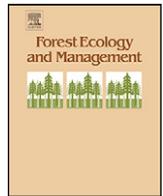




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Forest-related partnerships in Brazilian Amazonia: There is more to sustainable forest management than reduced impact logging

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ABSTRACT

There is more to sustainable forest management than reduced impact logging. Partnerships between multiple actors are needed in order to create the institutional context for good forest governance and sustainable forest management and stimulate the necessary local community involvement. The idea behind this is that the parties would be able to achieve more jointly than on their own by combining assets, knowledge, skills and political power of actors at different levels of scale. This article aims to demonstrate by example the nature and variety of forest-related partnerships in Brazilian Amazonia. Based on the lessons learned from these cases and the authors' experience, the principal characteristics of successful partnerships are described, with a focus on political and socioeconomic aspects. These characteristics include fairly negotiated partnership objectives, the active involvement of the public sector as well as impartial brokers, equitable and cost-effective institutional arrangements, sufficient and equitably shared benefits for all the parties involved, addressing socioeconomic drawbacks, and taking measures to maintain sustainable exploitation levels. The authors argue that, in addition to product-oriented partnerships which focus on sustainable forest management, there is also a need for politically oriented partnerships based on civil society coalitions. The watchdog function of these politically oriented partnerships, their awareness-raising campaigns regarding detrimental policies and practices, and advocacy for good forest governance are essential for the creation of the appropriate legal and political framework for sustainable forest management.

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1. Introduction

Operational guidelines for Reduced Impact Logging (RIL) (e.g. [Sist and Nascimento Ferreira, 2007](#)) focus mainly on silvicultural measures during pre-harvesting, harvesting and post-harvesting operations. Social aspects are also receiving more and more attention, particularly labour conditions, the effects of harvesting operations on people living in the surroundings and the contribu-

tion to their well-being ([Silva et al., 2006](#)). Despite this expansion in scope, the focus of RIL is still on timber production and on logging companies as the main actors in sustainable management. In this article, we argue that if we are to progress beyond RIL and pay the necessary attention to the social aspects of sustainable forest management, attention also needs to be paid to aspects related to forest governance and the inclusion of actors like communities and civil society organisations. Forest-related partnerships can play an important role in this respect due to their potential (i) to deal with a growing number of actors with competing claims and diverging interests, and (ii) to combine economic and environmental concerns with social ones. In this article, we aim to review and demonstrate by example the nature and diversity of partnerships in Brazilian Amazonia and to identify

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some success factors and pitfalls. We start by clarifying the concepts used in this article, the general background of partnerships in Brazilian Amazonia, and how they relate to economic and socio-political impediments to reduced impact logging and sustainable forest management. Then, after a clarification of the methodology adopted, we compare five cases, while highlighting the objectives of the partnership, the actors involved, the institutional arrangements, the socioeconomic benefits and drawbacks, and some environmental aspects. In spite of the diversity of partnerships in terms of actors involved and resource issues at hand, some characteristics of successful partnerships can be isolated and described. This is the focus of the last part of this article. In that section we outline the conditions under which partnerships can serve as a successful strategy for sustainable forest management.

2. Partnerships for sustainable forest management and good forest governance

2.1. Some definitions

In this article, we define partnerships as more or less formal arrangements between two or more parties from various sectors (government, civil society and/or private sector) oriented around at least partly shared goals. Parties engage in partnerships in the expectation of gaining more from combining power, funds, management capacity, skills and knowledge than from operating individually (Ros-Tonen et al., 2007). However, not all partnerships are equally successful. In this article, we aim to identify the characteristics of successful partnerships with success in this context referring to the capacity of partnerships to reconcile multiple interests and their potential to contribute to sustainable forest management and good forest governance.

Several kinds of partnerships exist in relation to forest management. The basic distinction is the one between product-oriented and politically oriented partnerships. The product-oriented partnerships, which may include conservation and development aims, encompass public–private partnerships, company–community partnerships, NGO–community partnerships and multi-sector partnerships (Ros-Tonen et al., 2007: 5–7). As far as politically oriented partnerships are concerned, Scholz (2005: 690) distinguishes between (i) alliances—a common activity focusing on a specific objective and involving a variety of organisations, which ends when the objective has been attained; (ii) partnerships—a fairly stable relationship between two or more organisations oriented around common objectives and based on shared ideals and worldviews; and (iii) networks—larger groupings of organisations, generally created for the purpose of information exchange and sometimes for joint activities.

Product-oriented and politically oriented partnerships are basically different in two respects. First, the politically oriented partnerships generally do not involve the corporate sector or government. Second, they have different goals. The primary aim of product-oriented partnerships is the ecologically sustainable, economically viable and socially just production of timber and non-timber forest products, either from natural forests or man-made vegetation types. Politically oriented partnerships are mostly oriented towards more fundamental policy changes and therefore deal with problems on a scale beyond the forest management unit. They are generally oriented towards promoting good forest governance rather than sustainable forest management.

At this point we need to clarify what we mean by RIL, forest management and forest governance. Following Putz et al. (2000: 852), we define RIL as a series of pre- and post-logging guidelines which aim to protect advanced regeneration from injury, to minimise soil damage, to prevent damage to non-target species

and to protect critical ecosystem processes. While RIL focuses on forest use for timber, sustainable forest management is a broader concept, encompassing the stewardship and use of forests for economic, ecological and social ends, at local, national, and global levels (SMCPF, 1993). Forest governance is the process of policy-making, implementation and monitoring the allocation and use of scarce forest resources (Macqueen and Bila, 2004). It deals with the politics of control, regulation and management (Rival, 2003) and about who has a say in the decision-making process. In summary, good forest governance provides the political, legal and institutional framework in which RIL and sustainable forest management can thrive.

2.2. Partnerships in the Brazilian Amazonian context

Partnerships for sustainable forest management and good forest governance have become more common in Brazilian Amazonia as the number of actors playing a role in defining forest policies has grown significantly since the 1980s. These actors include indigenous groups and other traditional forest users (Scherr et al., 2003), civil society organisations such as trade unions, peasants' organisations, environmental, indigenous and civic rights organisations (Scholz, 2005; Morsello, 2006), state and municipal governments (Toni and Kaimowitz, 2003), the Ministry of Environment, national and international research organisations, companies operating under Corporate Social Responsibility principles (Morsello and Adger, 2007) and international environmental organisations and donors. The growth of civil society organisations was particularly stimulated by the Constitution of 1988 (which granted more participation rights) and international donor support (particularly the G7 Pilot Programme for the Protection of Brazil's Tropical Forests, PPG7). The growing number of actors implies the need for negotiated solutions to land use (Pearce et al., 2003) and environmental policy, and the construction of alliances, partnerships and networks (Scholz, 2005; Hochsteler and Keck, 2007).

In addition to the increasing number of actors, several other factors led to the formation of partnerships (Ros-Tonen et al., 2007). At global level, these factors include (i) changes in governance thinking (the 'good governance' debate in the 1990s and the tendency towards global environmental governance); (ii) neo-liberal policy reforms and the declining role of the state; (iii) globalisation and the corresponding improvement of transnational communication; and (iv) widespread acceptance of sustainable forest management as the norm. At national and sub-national levels, factors favourable to the formation of partnerships include (i) decentralisation policies; (ii) devolution of property rights to indigenous and other local communities; and (iii) the democratisation wave in the 1980s which resulted in strong civil society development.

In particular, the multiple scale nature of partnerships makes them different from the co-management and participation approaches advocated since the end of the 1970s.

2.3. Partnerships and the impediments to sustainable forest management

The idea of implementing RIL through cooperation between multiple actors is not new. It emerged in particular during deliberations on how to deal with the various economic and socio-political impediments to sustainable forest management. Based on the experience gained in Tasmania, Wilkinson (2002: 323) has argued that 'RIL should be implemented where possible through an approach that fosters cooperation between government and other stakeholders' in order to optimise both consensus and the way RIL is put into practice. When reviewing the impediments to

sustainable forest management in Brazilian Amazonia, partnerships in this region may be particularly relevant because they can (i) provide an institutional framework for a multi-stakeholder perspective on forest use, (ii) reduce competing claims, (iii) involve communities, (iv) optimise resources and capacities, and (v) compensate for a lack of enabling policies. In the rest of this section, we clarify in more detail how forest-related partnerships are linked with the major hindrances to RIL and sustainable forest management in Brazilian Amazonia.

A multi-stakeholder or partnership approach to sustainable forest management is needed in the first place because forests have multiple values (de Groot et al., 2002) and mean different things to different stakeholders (Pearce et al., 2003). With its focus on timber and timber-producing companies, RIL insufficiently acknowledges that 'What are "weeds" to timber-stand managers are food sources, rare species, carbon stores, or intercrown pathways for other human and nonhuman stakeholders' (Putz et al., 2001: 17). Pearce et al. (2003) therefore argue for a multi-stakeholder perspective on what constitutes 'optimal forest use', which takes account of the standpoints of logging companies, forest dwellers, poor agricultural colonists, conservationists, national governments and bilateral and multilateral organisations. In this paper, we will show that multi-sector partnerships can provide the institutional framework for such a multi-stakeholder perspective on forest use and valorisation.

By integrating the perspectives of multiple stakeholders, a partnership approach to sustainable forest management may also help reduce competing claims to forest land. As such it deals with a second major impediment to RIL and sustainable forest management, namely the lack of long-term profitability and perspectives. Various studies in Brazilian Amazonia have shown that RIL is more efficient and cost-effective than conventional logging (e.g. Barreto et al., 1998; Holmes et al., 2000), but that it offers insufficiently attractive financial incentives to most loggers (Putz et al., 2000; Rice et al., 2001). This is particularly related to the fact that the opportunity costs of setting aside forest tracks and trees for preservation and future harvests compare unfavourably to 'liquidation harvesting' of all commercial trees under conventional logging (Holmes et al., 2002: 232). Creating additional incentives through the inclusion of non-timber values such as biodiversity and carbon has been suggested as one way of dealing with this problem (Pearce et al., 2003). However, in Brazilian Amazonia the basic problem is that it makes no sense to many loggers and timber companies to anticipate future profits and benefits:

- The forest is often going to be converted anyway (Putz et al., 2000) since much of the logging in the region is performed by land owners who want to capitalise on timber assets as a way to finance cattle ranching or agriculture (Ros-Tonen, 1993: 154; Blate et al., 2002: 347).
- There is insecure tenure and a lot of instability and rural violence associated with it (Nepstad et al., 2002).
- An increasing number of forest land owners face the risk of land invasion by timber thieves (Blate et al., 2002).

A brief explanation of the latter two risks can be found in Box 1. Such insecurities are serious impediments to sustainable forest management, since 'Forest managers who face uncertainty about the future are not likely to invest in it' (Bennett, 2002: 383). Although partnerships are not a panacea for the severe tenure situation in Brazilian Amazonia, they may locally advance negotiated solutions to land use between parties with diverging interests (Pearce et al., 2003), thus helping to reduce competing claims.

Partnerships may also offset the lack of community involvement in prevailing RIL and sustainable forest management approaches. Several authors have claimed that RIL falls short as

regards recognising the role of local communities in forest management (Bennett, 2002: 376) and as regards taking account of the economic, social and cultural context of smallholders (Rockwell et al., 2007: 372). The active involvement of forest-dwelling and adjacent communities is, however, increasingly important to sustainable forest use and conservation, since a growing proportion of forest land is coming under community control (White and Martin, 2002; Scherr et al., 2003). In order to realise active community involvement, an all-inclusive approach to sustainable forest management is needed based on the recognition that forest-related livelihoods include timber and non-timber forest products; not only from natural forests but also from other forested landscapes, including human-modified ones. Progressing beyond RIL therefore requires the inclusion of the total landscape used by local communities to maintain their livelihoods, while taking account of the socioeconomic and spatial contexts in which these are embedded (Ros-Tonen and Wiersum, 2005). To illustrate how this may take shape, we have also included partnerships in our review which deal with forest products from various vegetation types, including anthropogenic ones.

A further impediment to sustainable forest management that partnerships may help address is the generally perceived lack of well-trained supervisors and personnel responsible for the implementation of RIL and sustainable forest management systems (Johnson and Cabarle, 1993; Putz et al., 2000). As we noted above, the combination of skills, technological knowledge and traditional knowledge, provide partnerships with a strength that single actors do not possess.

Last, but not least, politically oriented partnerships may compensate for the lack of enabling public policies that is generally considered to be a serious impediment to sustainable forest management. Such partnerships may create awareness of the need for more sustainable policies and practices among both public and private actors, given that the latter are often unaware of the costs and benefits of RIL (Durst and Enters, 2001; Blate et al., 2002) and of the fact that something is wrong with conventional logging (Putz et al., 2000). Such lobbies may also include a plea for

Box 1. Tenure insecurity and the risk of timber thefts in Brazilian Amazonia

The right to land by appropriation (*direito de posse*) and the right to land by use (*usucapião*) embedded in Brazilian law have provoked decennia-long land grabbing (*grilagem*). In order to deal with the skewed property division resulting from that process, Law 4.504 from 1964 established that land which is not meeting its 'social function' (i.e. is used unproductively) can be expropriated for land reform by the government (Simmons et al., 2007). The latter forms the basis for land invasions by people without land (*sem-terras*) who anticipate such expropriation when they invade large land holdings and make encampments until the Brazilian Institute for Land Reform (INCRA) legalises their claims to land. Such invasions already caused at least one forest company in the state of Pará to lose its FSC certification, while some others are facing the same threat (Arini, 2007). Tenure insecurity in Brazil is further aggravated by the fact that both the Church, the Monarchy and the Federal government had the authority to issue land titles in the 19th century, as a result of which property titles are overlapping until today (Simmons et al., 2007: 579). Also the falsification of title deeds is common practice in the land grabbing process, as a result of which many property titles are of 'spurious legality' (Mayer, 2006: 342). More recently there is also the risk of land invasions by timber thieves (Blate et al., 2002) who use the same method as the landless peasants and are therefore referred to as the *sem-toras* (people without logs).

the proper implementation of environmental laws since weak law enforcement and corruption are generally perceived as being detrimental to the widespread implementation of RIL (Johnson and Cabarle, 1993; Durst and Enters, 2001; Blate et al., 2002; Nepstad et al., 2002). Furthermore, lobbying is needed for other enabling policies, such as the proper valuation of forest resources, the promotion of more efficient logging and wood processing, positive incentives for sustainable forest management and certification, reform of bureaucratic procedures and the provision of greater tenure security (Putz et al., 2000; Durst and Enters, 2001; Rice et al., 2001; Bennett, 2002). For this reason, we have included a politically oriented partnership in this paper, in order to make clear what role such a partnership can play in creating the conditions for good forest governance and the institutional framework in which RIL and sustainable forest management can thrive.

3. Methodology

In this article, we review the following partnerships:

- *Company–community partnerships* between (i) The Body Shop and the A'Ukre-Kayapó village in the state of Pará and (ii) between the former palm heart and açai fruit juice company Muaná Alimentos Ltd. and various communities on Marajó Island in the Amazon delta;
- *Multi-sector partnerships* relating to (i) an ecological paper project in the city of Belém, Pará, and (ii) the formation and management of extractive reserves in Rondônia;
- *A civil society partnership* based on an alliance between social movements and non-governmental organisations (NGOs) in protest at the construction of the Belo Monte dam in the state of Pará.

We selected these case studies as key examples of the main forms of partnerships for sustainable forest management in Brazilian Amazonia. By defining the lessons learned from both successful and failed cases we hope to provide an insight into the conditions under which such partnerships can contribute to sustainable forest management and good forest governance.

The product-oriented partnerships reviewed in this paper deal primarily with non-timber forest products (NTFPs) (see overview in Table 4), defined here as all plant and animal products other than commercial timber that come from forested landscapes including human-modified ones. For reasons explained above, and because the combined exploitation of wild and semi-domesticated NTFPs is economically more viable than a strategy based on wild NTFPs alone, we explicitly include NTFPs from human-modified or anthropogenic landscapes in the definition. This view is also reflected in the choice of partnerships that are being reviewed in this paper.

Table 1
Overview of cases, focus and methodologies used

Case	Type of partnership	Focus of the study	Methodologies used
The Body Shop-A'Ukre partnership for Brazil nut oil production	Product-oriented company–community partnership	Socioeconomic effects on indigenous communities	Household surveys, income surveys and time allocation observations
The Muaná Alimentos–community partnership for açai and palm heart production on Marajó Island	Product-oriented company–community partnership	Sustainability aspects of palm heart exploitation	Desk study, based on internet sources and secondary information
The Amazon Paper project	Product-oriented multi-sector partnership	Institutional arrangements in the production chain	Production chain analysis, institutional mapping and participant observation
Partnerships for extractive reserves in Rondônia	Product and politically oriented multi-sector partnership	Political processes	Ethnographic research, semi-structured interviews, participant observation and process and project documentation
MDTX in protest at the construction of the Belo Monte dam	Politically oriented partnership/alliance	Diverging environmental capacities of actors involved in cooperative politics	Qualitative interviews with representatives of public bodies, private sector, NGOs and social movements

Each of the case studies in this review was carried out from a different perspective and on the basis of distinctive methodologies, usually a combination of qualitative and quantitative methods (Table 1).

This variety in focus and methodologies allows us to benefit from complementary insights, but limits the possibilities for a systematic comparison, as is the case with any meta-analysis. Taking these constraints into account, we conducted a comparative analysis of the partnerships, comprising the following elements: (i) the objectives of the partnership, wherever possible distinguishing between those of various actors, (ii) the institutional arrangements, (iii) the actors involved (including brokers), (iv) the socioeconomic benefits of the partnership, (v) the socioeconomic drawbacks of the partnership, and (vi) some aspects related to the environment.

As regards the environmental performance of the partnerships, it should be kept in mind that most of the case studies focused on socioeconomic and institutional aspects of partnerships and did not address the issue of ecological sustainability to the same extent, scale or intensity.

4. Company–community partnerships

Company–community partnerships typically involve a commercial enterprise and one or more local communities which agree to produce and commercialise forest products with mutual benefits as the expected result. Brazilian Amazonia is relatively rich in such partnerships, in particular those related to the commercialisation of NTFPs such as cosmetics, essential oils, pharmaceuticals, food, juice pulp, resins and fibres for the automobile industry (Morsello, 2006; Otsuki, 2007). The first case reviewed in this article evolved around the production of Brazil nut oil from *Bertholletia excelsa* Humb & Bompl. (used to produce cosmetics), while the other deals with the production of the palm heart and fruit juice (*açai*) of *Euterpe oleracea* Mart.

4.1. The Body Shop–A'Ukre partnership for Brazil nut oil production

In 1991, an agreement was signed between the UK-based cosmetics company, The Body Shop, and a Kayapó village in the Brazilian state of Pará, covering the sale of a maximum of 2000 kg of oil per year to The Body Shop. With a population of about 230 people, the A'Ukre-Kayapó control approximately 310,000 ha within the 3.3 million ha of the indigenous territory Área Indígena Kayapó. The village is very isolated – it can only be reached by small planes – and is 220 km, or an hour's flight away from the nearest town of Redenção. There are no permanent roads leading to the village and rapids make fluvial transportation to local towns very difficult. Consequently, the community is still only experiencing the early stages of market integration and new market activities may have a significant impact.

Table 2

Actors and their roles in three product-oriented partnerships

Actor	Role
In the Body Shop-A'Ukre partnership for Brazil nut oil production:	
The Body Shop	<ul style="list-style-type: none"> • Providing a fair trade market for Brazil nut oil by buying the product at premium prices
AmazonCoop	<ul style="list-style-type: none"> • Brokering in the conclusion of the deal • Acquisition of inputs • Transport
FUNAI employees	<ul style="list-style-type: none"> • Overseeing the contract
A'Ukre Kayapó community	<ul style="list-style-type: none"> • Supplying AmazonCoop/The Body Shop with Brazil nut oil after gathering and processing Brazil nuts
In the Muaná Alimentos–community partnership for <i>acaí</i> and palm heart production on Marajó Island:	
A2R/Terra Capital	<ul style="list-style-type: none"> • Providing investment capital to companies operating in an ecologically and socially responsible manner • Making profit while contributing to the conservation of biodiversity
IFC/World Bank and GEF	<ul style="list-style-type: none"> • Providing funds to the Terra Capital equity fund
Muaná Alimentos	<ul style="list-style-type: none"> • Buying, processing and marketing of palm heart and <i>acaí</i> • Supporting a social programme
Labour cooperative	<ul style="list-style-type: none"> • Organising and mobilising extractors
Company-created NGO	<ul style="list-style-type: none"> • Providing boats and fuel for school transportation
Third party suppliers	<ul style="list-style-type: none"> • Sustainable extraction of palm heart and <i>acaí</i>
In the Amazon Paper project:	
POEMA	<ul style="list-style-type: none"> • Setting up and coordination of the research programme • Identify local knowledge of plant use
POEMAR	<ul style="list-style-type: none"> • Organising production • Providing technical assistance to communities and producer associations • Experimenting with new NTFP uses • Broker for international donor funds • Lobby for land and resource rights
Bolsa Amazônica	<ul style="list-style-type: none"> • Promoting commercialisation of sustainably produced Amazonian products
JICA	<ul style="list-style-type: none"> • Transfer of papermaking technology
International donors (Oxfam-Novib, DEG, IFC/World Bank)	<ul style="list-style-type: none"> • Providing seed money for investments in the Production Unit and training of staff and employees
Private sector investors (e.g. Brazil Bank Foundation)	<ul style="list-style-type: none"> • Financing of <i>curauá</i> seedlings
Local farmers and extractors	<ul style="list-style-type: none"> • Provision of raw material • Providing local knowledge of plant use
Factory workers and local craftsman and women	<ul style="list-style-type: none"> • Papermaking
Private sector actors in commerce (retailers, sales representatives)	<ul style="list-style-type: none"> • Marketing of the products

Acronyms in the order of their appearance: FUNAI = *Fundação Nacional do Índio*; IFC = International Finance Corporation (World Bank Group); GEF = Global Environmental Facility; NGO = Non-governmental organisation; POEMA = Poverty and Environment in the Amazon Programme (Federal University of Pará, Belém); POEMAR = Nucleus of Action for Sustainable Development; JICA = Japanese International Cooperation Agency; DEG = *Deutsche Investitions und Entwicklungsgesellschaft*.

4.1.1. Objectives of the partnership

The agreement provides The Body Shop with an ingredient for the production of various cosmetics such as soap, shampoo, body scrub and creams (<http://www.thebodyshop.com>). The partnership with an indigenous forest-dwelling community also enables The Body Shop to enhance its 'green' and socially responsible image. In its marketing strategy, The Body Shop profiles itself as a promoter of fair trade, which provides communities with income opportunities and an alternative to logging and mining (<http://www.thebodyshop.com>). This image allows the company to operate on profitable niche markets where consumers are willing to pay a premium price for products from (presumably) well-managed forests. For the A'Ukre Kayapó society, participation means access to a profitable niche market, employment and cash incomes in a situation where few other income opportunities exist.

4.1.2. Actors involved

The parties in the arrangement are The Body Shop, the A'Ukre Kayapó community, AmazonCoop (a multi-ethnic cooperative based in Altamira town) and the government foundation for

indigenous affairs the Fundação Nacional do Índio (FUNAI). Their respective roles are summarised in Table 2. There are no signs of exclusion as appears from the fact that 70% of the community is involved in the production of Brazil nut oil. Women, however, have no access to the more profitable grinding and pressing phases (see below).

4.1.3. Institutional arrangements

In A'Ukre, the company was initially responsible for all the necessary inputs, equipment, transportation and management duties. Following criticism by some indigenous advocacy groups, the control of the operation was progressively passed on to the villagers who relied on assistance from AmazonCoop. The cooperative is largely controlled by FUNAI employees.

4.1.4. Socioeconomic benefits of the partnership

The Body Shop paid US\$ 35/kg of Brazil nut oil in the early 2000s, which was well above the average market price range of about US\$ 4–8/kg (Collinson et al., 2000; Enríquez et al., 2003). Because of the price premium and the small local population,

incomes received from producing Brazil nut oil are locally important if we consider the few cash income-earning opportunities. However, the amount of oil sold is too small to increase local cash incomes to any large extent. Expanding production under the present conditions is, however, impossible without imperilling food production, because (i) labour is limited and (ii) there is no possibility of purchasing food instead of producing it due to the village's remoteness. The company provided some capacity building in which the community members were taught how to process the oil and avoid contamination, but this did not include management and trading practices. The Body Shop, through its Foundation, also used its political influence and contributed to the building of a health facility in the nearby town of Redenção.

4.1.5. Socioeconomic drawbacks

In the first place, there are some differences in cash income levels according to gender and age. Contrary to what is often feared regarding trade deals with isolated, traditional and relatively egalitarian indigenous communities, cash incomes in A'Ukre are distributed quite equally among households and individuals. In the village, the majority (70%) of the people older than fifteen received income from oil production in 2000 and 2001. However, a relatively smaller proportion of women (around 50%) than men (over 85%) receive income from collecting or processing nuts and their mean annual income of US\$ 110 is US\$ 357 lower than that of men (US\$ 467). These gender differences in cash incomes occur because of: (i) payments in the name of the male household head in the gathering phase; (ii) lower payments per hour to women in the shelling phase; and (iii) a lack of access for women to the more profitable grinding and pressing phases. The unequal distribution of incomes by age is due to teenagers working less and receiving a lower rate of pay per hour worked.

Secondly, the interference of additional income-generating activities with subsistence practices may have potentially adverse effects on long-term food security. Although, given present levels of oil production, subsistence agriculture is not being jeopardised, there are indications that the situation may have been different in years of high Brazil nut harvests like in 1998, when the productivity of home gardens of some families suffered a decline. An overlap in time between oil production and the preparation (clearing and planting) of agricultural plots resulted in delays in the latter. Raising oil production levels to above 2000 kg/year can therefore produce more negative impacts than positive, since it can jeopardise food security while raising cash incomes (Morsello, 2002).

Thirdly, oil processing may have negative effects on internal group cohesion and be detrimental to the community's resilience to shocks like crop failures or natural hazards. Whereas collecting tends to reinforce social bonds and may strengthen Kayapó social structures and culture, oil processing – the most rewarding part in the production chain – is more solitary and individualistic work in return for hourly payment. This deviates from traditional Kayapó practices and social structures which, combined with the fact that less time is available for rituals, socialisation and leisure, might lead to the weakening of social bonds. In the end, this may result in increased risk to temporary food scarcities (Morsello, 2002).

Fourthly, the deal failed to empower the group in their commercial relations with the outside world. The transfer of responsibility from the company to the community came about without any greater effort being made as regards local training in accountability or management skills. Since the cooperative is controlled largely by FUNAI employees, in effect the control was transferred from the company to a third party, rather than to the community itself. The Kayapó are famous for their self-organising capacity as regards political activities, but their lack of planning skills, limited knowledge of Portuguese and limited experience with

markets and contract law has resulted in an assistencialist mentality which matches the paternalistic attitude on the part of FUNAI.

4.1.6. Environmental aspects

Results relating to the ecological sustainability of Brazil nut exploitation for oil production under the partnership are disappointing for three reasons. First, due to a lack of monitoring programmes and management practices that mitigate adverse ecological impacts, the most exploited Brazil nut grove in A'Ukre is already revealing signs of changes in Brazil nut population dynamics (J. Solorzano, personal communication). This may undermine harvesting in the long-term, as has frequently been observed elsewhere, particularly in those production systems based on gathering from natural forests (Belcher et al., 2005). Second, families putting more effort into oil production tend to clear larger areas for agriculture and families receiving higher incomes from oil production tend to hunt more (Morsello, 2002). Although these transformations are rather unimportant in view of the very low human densities in the Kayapó area, they could reduce the sustainability of indigenous peoples' natural resource use practices in other localities. Third, the NTFP trade agreement fails to function as an alternative to more deleterious activities like logging and gold panning which are much more profitable (Corry, 1993) and do not involve labour trade-offs for being based on royalty payments or concessions (Morsello, 2002).

4.2. The Muaná Alimentos Ltd. partnership with communities on Marajó Island

The fruit juice and hearts of the multi-stemmed *Euterpe oleracea* Mart. (*acaí*) palm are among the major commercial NTFPs of the Amazon region (Pollak et al., 1995; van Andel et al., 2003). In 1999, the former canning company Muaná Alimentos Ltd. entered into a partnership with a labour cooperative on Marajó Island in the Amazon Delta for the sustainable management of 4000 ha of *Euterpe* swamp. The firm also dealt with riverine communities outside this area for the purchase of palm hearts and *acaí* on a (presumably) sustainable and socially equitable basis. In 2000, the company produced 540 tonnes of palm heart with a value of US\$ 4 million. In the same year, 7 tonnes of frozen and sweetened *acaí* pulp were exported to the US (Buia, 2001). After meeting the numerous preconditions resulting from the first assessment of the Smartwood NTFP guidelines in 1999, the Brazilian certifier *Instituto de Manejo e Certificação Florestal e Agrícola* (IMAFLOA; Institute for Forest and Agricultural Management and Certification) and the Smartwood network of the Rainforest Alliance certified the company's *Euterpe* forests in 2000. Muaná Alimentos was the first company in South America to sell NTFPs with a forest management certificate of the Forest Stewardship Council (FSC). The certified products were initially launched onto the domestic market, after which the first 6 tonnes of frozen fruit pulp were shipped to the US in 2000. Later, Muaná Alimentos exported its product to Europe. The potential certified volume of product was expected to be 184 tonnes of palm hearts and 132 tonnes of *acaí* fruit per year. Muaná's ultimate goal was the certification of 40,000 ha of natural forest for *acaí* production in 5 years, of which 400 ha had to be set aside for permanent forest conservation (Donovan, 2000). Unfortunately, these ambitions were never achieved as the company and the major investor in the partnership (A2R) went bankrupt in 2005. One of the reasons for this failure was that Muaná's products could not compete on the domestic and international markets with the cheaper *acaí* products from non-sustainably harvested areas.

4.2.1. Objectives of the partnership

The major investor in the partnership, the Brazilian company A2R Environmental Funds, set up the Terra Capital equity fund to invest

in small and medium-sized companies like Muaná Alimentos that operate under Corporate Social Responsibility principles. The major aim of this fund was to capitalise on opportunities in 'green' markets and make a profit while contributing to the preservation of biodiversity (Forgách, 2002). Muaná Alimentos strived to produce palm heart and *açaí* in an ecologically sustainable and socially responsible manner. The harvesters and workers involved in the partnership expected to gain safe working conditions and employment (de Carvalho Lobato, 2003).

4.2.2. Actors involved and institutional arrangements

In 1999, the A2R Terra Capital equity fund (in which the World Bank's IFC participated with US\$ 4 million and GEF with US\$ 5 million) bought a majority stake of US\$ 1.5 million in the practically bankrupt canning company Ita Agroindustrial, which was subsequently transformed into Muaná Alimentos. The deal on Marajó Island was between Muaná Alimentos Ltd., a labour cooperative, and riverine communities on Marajó Island. Forty percent of the raw material was bought from third parties in riverine communities (Homma, 2005). The actors and their respective roles are summarised in Table 2.

4.2.3. Socioeconomic benefits of the partnership

The Muaná factory provided direct employment to 100 people, while buying raw material from 56 families in five municipalities (Forgách, 2002). The company's social programme was meant to impact 52,000 families in seven municipalities (ibid.). Muaná paid its workers and suppliers at least 28% above the US\$ 78 a month minimum wage (Buia, 2001). Contrary to common practice, the company refused to employ children. New harvesting methods had been developed that enabled extractors to gather the fruits in a safer way than before. A company-created NGO provided boats and fuel for school transportation, worked with the Brazilian government on vaccination programmes and opened a computer school (ibid.). The company also cooperated with the state government and several municipalities to implement a social programme in the communities (Renström and Rainey, 2001). Moreover, the company periodically provided training courses in responsible forest management to the employees and other technical courses to the community as a whole, with a special focus on cultivating *Euterpe* palms near houses for food production and maximising yields of fruit and palm hearts (Buia, 2001). In addition to the above-mentioned benefits (which are based mainly on claims made by the company) the Brazilian certifying body IMAFLORA has noted that the company was instrumental in solving a land conflict in Currálinho, in improving interrelationships between the company, communities and the public power, and in promoting cooperative activities (de Azevedo, 2003).

4.2.4. Socioeconomic drawbacks

A former chairman of the Rural Workers Syndicate is a lot less optimistic about the benefits of the deal and claims not to know of any social benefits in terms of education or health (de Carvalho Lobato, 2003). In the same year, de Azevedo (2003) pointed out the weak economic viability of the deal and the instability of the team. The mass investment by A2R gave a new impulse to the firm but could not prevent the bankruptcy of both.

The exact details of the deal between Muaná and the harvesters remain unclear. Were the harvesters allowed to continue their subsistence activities while working for the company? Could they still fish, hunt or cultivate their crops in the concession area? These are important questions, since evidence from Guyana suggests that part-time palm heart harvesters who also practise subsistence farming tend to use less destructive extraction methods than full-time cutters who neglect their traditional farm plots because the company more or less forces them to do so. With few food reserves

grown at home, the extractors are obliged to cut more palm hearts in order to earn enough for their daily meals. In Guyana this led to extreme poverty and malnutrition in overharvested areas (Forte, 1995; van Andel et al., 1998).

4.2.5. Environmental aspects

Since the multi-stemmed *Euterpe oleracea* species is locally abundant and regenerates quickly after harvesting, it is relatively easy to extract palm heart in an ecologically sustainable way (Anderson, 1988), even more so in the *Euterpe*-dominated forests that Peters et al. (1989) referred to as 'oligarchic forests'. However, ecologically sustainable palm heart extraction requires various management practices (see van Andel et al., 1998, for a summary). In practice these measures are seldom applied, as a result of which promoting *açaí* and palm heart harvesting involves a number of environmental risks. Firstly, repeated stem cutting with short rotation periods (1–2 years) causes clump mortality, slower regeneration and a steady decline in production (Anderson and Jardim, 1989). Overharvesting and the extraction of small-sized (immature) palm hearts have already weakened Brazil's position on the world market, causing many factories to close down (Richards, 1993) and national production to decline. Recent research on Marajó Island has revealed that *açaí* palm management cannot protect the biodiversity of the floodplains in the longer term (Weinstein and Moegenburg, 2004: 342). A third environmental risk is that people do not stop other, less sustainable, land-use practices such as slash-and-burn farming, logging and cattle ranging due to lack of profitability.

5. Multi-sector partnerships

Multi-sector or intersectoral partnerships involve actors from multiple sectors (state, private sector and civil society) who often operate at multiple scales. Examples of such actors are international donors and organisations, national and local government agencies, NGOs, private corporations, research organisations and community-based organisations. These partnerships bring together political power, donor funding, management capacity, technological skills and local knowledge. As a result, the actors in the partnership are able, at least in theory, to achieve much more than they would achieve individually. The first case reviewed below refers to a multi-sector partnership for ecological paper production in the state of Pará, while the second refers to multi-sector partnerships for the creation, implementation and development of extractive reserves in the state of Rondônia.

5.1. The Amazon Paper project in Pará

The Amazon Paper project was launched in 2000 by the Poverty and Environment in the Amazon Programme (POEMA) of the Federal University of Pará in Belém. This programme can be classified as a special variant of a multi-sector partnership, namely a research partnership. In such a partnership, universities and/or private research organisations explicitly cooperate with multiple donors to promote sustainable and pro-poor forest use. In this case, experts and local institutions, in partnership with private enterprises and international donors, implemented a production chain of ecological paper made in the north-eastern part of Pará (including the city of Belém). The principal ingredient for the paper is a native Amazonian fibre plant called *curauá* (*Ananas erectifolius* L.B. Sm.), which had been domesticated by indigenous people in the western part of Pará. The extracted fibres are combined with palm tree barks and branches, natural dyes and/or agro-industrial residues such as sugarcane bagasse and coconut shell fibres in order to give the paper variations in texture and colour. The paper is produced in a small production unit in Belém which also

coordinates the project's financial management and marketing of the paper and craft products. As far as marketing is concerned, particular attention is being paid to the branding of the final products using 'Amazonian stories'.

5.1.1. Objectives of the partnership

The principal objective of the partnership is to establish a localised production chain of natural fibres and other NTFPs in order to add value to local NTFPs. Through this production chain, the partnership's aim is to promote sustainable NTFP production and generate income for both rural and urban poor. Another aim is to promote the use of natural fibres and dyes among local producers while training local, especially young, people to become professional makers of handmade art paper and craft products.

5.1.2. Actors involved

Table 2 shows which actors are involved in the partnership. Central to the partnership is the Nucleus of Action for Sustainable Development (POEMAR), a non-governmental organisation created in 1995 to facilitate the work of the university POEMA programme. POEMAR organises the production, provides technical assistance to local communities, and experiments with new NTFP uses using the university's laboratories. POEMAR also acts as a broker for international donors whose funds and expertise are channelled to local communities. Alternatively, it provides assistance to small producers' associations as regards applying for rural credits from local banks or governmental institutions. POEMAR also lobbies governmental agencies to secure other production rights such as land titles, which shows that product-oriented multi-sector partnerships may also address forest governance issues.

In fact, POEMAR is a part of the institutional arrangement called the POEMA system, which also includes POEMATEC, a private enterprise that produces industrial products from coconut fibre and latex, and POEMACOOOP, which is a cooperative of small producers and agricultural extension workers.

The papermaking technology was introduced by the Japanese International Cooperation Agency (JICA) in 2000, while local knowledge of plant use was provided by university researchers and indigenous/local people's groups. After an initial research and development period, the Production Unit was built with financial support from the Dutch co-financing organisation Oxfam-Novib in 2001–2002. In 2003, a German investment society called *Deutsche Investitions und Entwicklungsgesellschaft* (DEG), which operates using public funds, provided operational support. In the same year, the project won a World Bank grant competition for small and medium enterprises. In 2004, the Brazil Bank Foundation financed the *curauá* seedlings and in 2005, the International Finance Corporation (IFC) of the World Bank Group gave a 1-year subsidy to train local staff of the Production Unit in successful marketing.

Local farmers and extractors supply raw material to the Production Unit where young people are trained to become paper or craft makers. Consultants, investors, retailers and sale representatives are actively involved in marketing. The POEMA system acts as an intermediate party to ensure that the products made by the Production Unit reach the consumers. In this respect, the *Bolsa Amazônia* programme plays a specific role in promoting final products. This programme was set up in partnership with the Biotrade Initiative of the United Nations Conference on Trade and Development (UNCTAD) to promote the commercialisation of Amazonian products sustainably produced in Brazil, Bolivia, Colombia and Ecuador.

5.1.3. Institutional arrangements

The establishment of a localised production chain transformed a small research programme of the university (in this case POEMA) into a complex institution that deals with production, processing,

training and marketing of particular products, involving a wide range of experts and sub and parallel organisations (Table 2). For an adequate institutional arrangement between this broad range of actors, an intermediary organisation such as POEMAR is necessary to connect local (especially poor) populations to international donors and businesses that have a greater interest in, and money available for, financing sustainable development projects than the governments. For this partnership, it is important that the local development organisations function as a bridge between the 'global' and the 'local' worlds.

5.1.4. Socioeconomic benefits of the partnership

The project has generated 50 resource-processing jobs for rural and urban poor, indirectly benefiting 200 people (<http://www.globalgiving.com/pr/1000/proj946p.html>). Twenty farmers from various villages in the northeast of Pará have been involved in the project on a pilot basis as suppliers of fibres and other natural inputs (ibid.). In addition, the local value of NTFPs was actively promoted as being an important part of the tradition and culture of local producers (Rios, 2000). By involving both rural producers and urban slum dwellers along the production chain, the project has also succeeded in creating rural-urban synergy. By the end of 2006, the project succeeded to perform without significant external donor support and hence achieved commercial sustainability.

5.1.5. Socioeconomic drawbacks

The most significant socioeconomic drawback relates to the administration and economic viability of the production chain and the partnership. Contrary to what was intended at the start, the project continued to operate at a pilot scale because of the difficulty of administering a wide range of actors and commercialising final products at profitable prices. In 2003, the Production Unit started to sell paper at US\$ 2–3 per sheet (98 cm × 64 cm) based on a calculation of the production costs. The costs were fairly high at the production level of 5000 sheets per month. Moreover, in case of commercialising stationary goods made from handmade paper, the value would have to be added twice, as a result of which the final product would become too expensive for distributors. Consequently, the wage and prices paid to the workers and farmers have not risen as expected.

5.1.6. Environmental aspects

In the northeast of Pará and, more generally, parts of the Amazon close to the cities, the use of domesticated NTFPs is more important than the use of natural forest products, as primary forests have already disappeared. In already deforested areas, ecological sustainability depends largely on sustainable agriculture. The recent successful (re)introduction of alternative farming techniques such as agroforestry, the products of which are used in this project, has benefited communities involved in this partnership. Promoting the use of domesticated NTFPs further encourages the use of degraded areas and promotes sustainable farming, which helps stop further encroachment into primary forests.

5.2. Extractive reserves in Rondônia

Extractive reserves are protected areas, established by the government, that guarantee the rights of local populations to use natural resources for livelihoods (Allegretti, 1990; Schwartzman, 1989). This approach was proposed by the rubber tappers or *seringueiros* of the state of Acre in the mid 1980s as a means of securing rights to land. In 1990, the Brazilian government adopted this approach as part of its environmental policy (Hall, 1997). The federal government has established about fifty extractive reserves in Brazil, covering an area of approximately 10 million hectares (<http://www.ibama.gov.br>). In addition to these, there are twenty-

one extractive reserves in Rondônia, covering a combined area of about 1 million hectares, which were created by the state government. This was done under a large-scale environmental management project funded by the World Bank, referred to as the Rondônia Natural Resources Management Project (PLANAFLORO), which was implemented between 1993 and 2001.

5.2.1. Objectives of the partnership

The partnerships that have evolved in the context of extractive reserves and PLANAFLORO aimed to (i) guarantee the effective creation of extractive reserves, including demarcating their boundaries; (ii) address land tenure and property rights issues; (iii) promote co-management; (iv) and improve the livelihoods of local communities through the development of income-earning opportunities based on sustainable use of forest resources. The partnerships for extractive reserves are of a mixed nature. Based on the third and fourth objective, they can be classified as product-oriented. However, the first two objectives are more characteristic of politically oriented partnerships since they deal mainly with forest governance issues at higher and multiple levels of scale.

5.2.2. Actors involved

A number of steps are necessary to ensure the effective establishment of an extractive reserve, namely creation, legal implementation and development. Local populations must firstly submit a formal request to the government asking for the area they inhabit to be declared an extractive reserve. This request must be based on sound environmental, social and economic arguments. Once a reserve has been formally created, it then needs to be legally implemented, which involves resolving any conflicting property rights and establishing co-management arrangements. At the same time, development measures are promoted, particularly in the areas of income-generation, health and education. Each of these steps requires partnerships between different actors. Table 3 summarises the diversity of actors in each of the stages and their role in the partnership.

In Rondônia, the creation of extractive reserves began in the late 1980s and involved the State Institute of Forests (IEF), grassroots organisations of rubber tappers, national and international NGOs and donors.

The legal implementation of reserves involves the devolution of jurisdiction over land from the federal to the state level. For reserves created by the state government to be legally recognised, all the land where they are created must be under the jurisdiction of the State Secretariat for Environmental Development (SEDAM). For this to take place, the federal agency which controls most public land in Brazil, the National Institute for Colonisation and Agrarian Reform (INCRA), must transfer jurisdiction to SEDAM.

The development of extractive reserves depends on multi-sector partnerships. Actors involved in the management of extractive reserves include the federal organisation responsible for enforcing environmental legislation, IBAMA (*Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis*), its counterpart at the state level, SEDAM, and the organisation of rubber tappers. During the second half of the 1990s, the United Nations Development Programme (UNDP), under a technical cooperation agreement with PLANAFLORO, was entrusted with the task of building institutional capacity of communities and government to manage extractive reserves. As regards the improvement of incomes, partnerships evolved between local NGOs, the World Wide Fund for Nature (WWF) and other international donors.

5.2.3. Institutional arrangements

PLANAFLORO provided the policy context for the establishment of extractive reserves as a means of simultaneously protecting large areas of forest and sustaining the livelihoods

of the population living in these areas. Guaranteeing the creation of the reserves within the PLANAFLORO project and promoting their ecological and socioeconomic sustainability became the focus of multi-sector partnerships between actors operating at various scales, from grassroots organisations and local NGOs to international NGOs and donors. Once PLANAFLORO ended, the partnerships with NGOs, particularly WWF, continued to be important.

5.2.4. Socioeconomic benefits of the partnership

The extractive reserves under PLANAFLORO involve approximately 326 families which gained secure rights to land and received support to improve their livelihoods sustainably. Improving livelihoods is conditional to the long-term viability of extractive reserves. Failure to do so might cause families to abandon the reserves in search of better opportunities elsewhere. The presence of these families is the most effective deterrent to large-scale deforestation by land grabbers and illegal loggers. If uninhabited, the reserves are more vulnerable to external pressures. This caused the state government of the neighbouring state of Acre to adopt the Chico Mendes Law in 2000 which provides subsidies for the price of natural rubber produced by rubber gatherers (http://www.ac.gov.br/producao/chico_mendes.html). In Rondônia, partnerships between WWF and other donors like PPG7 enabled the initiation of several income-generating projects since 1993, such as ecotourism, the production of a rubber-coated textile known as ecological leather and community-based logging. The latter, when based on sustainability criteria, is a promising option as regards improving the rubber tappers' income. Such revenues can be further increased if the logging projects can be FSC certified.

5.2.5. Socioeconomic drawbacks

The drawbacks of the partnership were mainly caused by conflicting interests of the increasing number of actors involved. For example, the project was strongly supported by the World Bank, whose conservation priorities ran counter to the economic development agenda of Rondônia's government. The state government as a whole was not committed to PLANAFLORO's environmental objectives, but saw it as a means to obtain much needed funds to improve infrastructure and public services. It only created extractive reserves and committed funds for their implementation after criticism put forward by civil society organisations in national and international forums.

Disputes over power between government agencies at federal and state levels have constrained the legal implementation of extractive reserves. INCRA saw the transfer of jurisdiction to SEDAM as weakening its influence in the state and, as a result, the legal implementation of many reserves is still pending.

Efforts to improve the economic viability of the reserves have benefited from the involvement of NGOs that provided much needed capital and technical assistance. However, disputes have arisen between NGOs and community leaders over the control of specific income-generating projects.

Getting the timber produced by community logging operations certified under FSC has been unsuccessful so far due to a lack of funds and difficulties in meeting the strict certification criteria. Since the FSC introduced the Small and Low-Intensity Managed Forests (SLIMF) initiative in 2002, group and community certification has been made more affordable. As a result, at least five Resident and Producers Associations in Acre's extractive reserves were on the list of FSC-certified forest operations in June 2007 (<http://ww2.imaflora.org>). Despite these more favourable conditions, no products from extractive reserves in Rondônia have yet been certified.

Table 3
Actors and their roles in the partnerships for extractive reserves in Rondônia, Brazil

Actor	Role
Creation phase (start late 1980s): State Institute of Forests (IEF)	<ul style="list-style-type: none"> Identifying the areas with potential for the establishment of extractive reserves
(E)NGOs (i.e. INDIA, ECOPORÉ)	<ul style="list-style-type: none"> Encouraging the Rondonian rubber tappers to organise and establish an independent organisation (OSR) Providing expertise to formulate sound proposals for the creation of extractive reserves
Organisation of rubber tappers of Rondônia (OSR)	<ul style="list-style-type: none"> Negotiating the creation of extractive reserves, mobilising and organising communities.
WWF-Sweden	<ul style="list-style-type: none"> Funding to sustain grassroots organisations (OSR and associations) and supporting activities aimed at strengthening extractivist and agricultural production and marketing
World Bank	<ul style="list-style-type: none"> Funding to promote the sustainable management of natural resources in Rondônia Monitoring the state government's commitment with sustainable development
Legal implementation phase (early 1990s): National Institute for Colonisation and Agrarian Reform (INCRA)	<ul style="list-style-type: none"> Legalising property rights by recognising the boundaries of extractive reserves Transferring authority over land from the federal to state level of government
Defence Department	<ul style="list-style-type: none"> Transferring land which is to be included in extractive reserves from the military to the state domain
State Secretariat for Environmental Development (SEDAM)	<ul style="list-style-type: none"> Supporting the legal implementation and socioeconomic development of state extractive reserves
Development phase (1993–2001): WWF & other donors	<ul style="list-style-type: none"> Funding income-generating projects in extractive reserves
NGOs (a.o. ECOPORÉ)	<ul style="list-style-type: none"> Providing technical expertise for the development of income-generating activities (community-based logging, production of ecological leather, ecotourism)
UNDP	<ul style="list-style-type: none"> Building capacity of state agencies and associations to manage extractive reserves
IBAMA	<ul style="list-style-type: none"> Enforcing environmental legislation (e.g. protecting reserves from illegal logging)
SEDAM	<ul style="list-style-type: none"> Participate in the co-management of reserves; guaranteeing the ecological sustainability of reserves, including their protection from outside pressure
OSR (rubber tappers)	<ul style="list-style-type: none"> Self-organised monitoring and protection; sustainable use of extractive reserves

Acronyms in the order of their appearance: IEF = Instituto Estadual de Florestas (State Institute of Forests); (E)NGOs = (Environmental) Non-Governmental Organisations; INDIA = Instituto de Defesa da Identidade Amazônica (Institute for Defence of Amazonian Identity); ECOPORÉ = Ação Ecológica Vale do Guaporé = Ecological Action Guaporé Valley); OSR = Organização dos Seringueiros de Rondônia (Rubber tappers' Organisation of Rondônia); WWF = World Wide Fund for Nature; INCRA = Instituto Nacional de Colonização e Reforma Agrária (the National Colonisation and Land Reform Institute); SEDAM = Secretaria de Desenvolvimento Ambiental do Estado de Rondônia (State Secretariat for the Environmental Development of Rondônia); UNDP = United Nations Development Programme; IBAMA = Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (Brazilian Institute the Environment and for Renewable Resources).

5.2.6. Environmental aspects

The overall sustainability of extractive reserves depends on two key conditions, namely protection from external pressures and robust community institutions to develop and monitor rules aimed at ensuring the sustainable use of resources.

Extractive reserves in Rondônia are being threatened by loggers and land grabbers. Federal and state agencies responsible for protecting the reserves against external pressure are not effective. This is partly due to a lack of coordination between IBAMA and SEDAM.

Significant advances in institutional building for reserve management were achieved under the UNDP programme. However, when the project came to an end the communities were not yet capable of organising themselves without external support and facilitation. The time it takes for community and collective action institutions to develop and mature exceeds the average duration of external interventions. Similarly, SEDAM staff were not yet equipped with the necessary expertise to ensure the continuation of extractive reserve management and development activities at the end of PLANAFLORO. Eventually, the rubber tappers developed their own protection efforts by putting pressure on environmental agencies, exposing environmental crimes in the media and collaborating with public prosecutors.

6. A politically oriented partnership: the movement for the development of the Transamazon Highway and the Xingu (MDTX)

An illustration of a politically oriented partnership is the social movement protesting against the Belo Monte hydrological complex 50 km east of Altamira town in the southeast of Pará State. Central to the analysis of this case is the environmental capacity of the actors involved, which is understood as their capacity to engage in dialogues and negotiations concerning the environment (Scholz, 2005).

The Belo Monte hydroelectric complex was initially planned by the state energy company called Eletronorte in the 1980s. In 2000, a feasibility study was published, which envisaged the flooding of 400 km² and massive environmental and social effects (<http://www.belomonte.gov.br/menu.html>). The construction would negatively affect endemic species in the river basin and disrupt the lives of indigenous peoples in the affected areas. It would also attract spontaneous immigration to the region and provoke a rural exodus of people in search of labour. After the conclusion of the work, a large number of people would be very likely to turn to the countryside, with exacerbating land conflicts being the result. In order to curb the adverse effects, an alliance of more than a hundred grassroots organisations from all municipalities along the

Transamazon Highway, which has already existed since the end of the 1980s, decided to engage in protest against the planned dam and hydro electric plant. This alliance became known as the *Movimento pelo Desenvolvimento da Transamazônica e do Xingu* (MDTX; Movement for the Development of the Transamazon Highway and the Xingu).

6.1. Objectives of the partnership

The main objective of the MDTX is to attract and channel funds into the region for the improvement of the situation of family farmers and general living conditions along the Transamazon Highway. In this context, the movement also opposes the dam's construction. A large public construction project represents an opportunity for negotiating additional investments for development, especially when there is local resistance to the construction. Part of the MDTX represents this type of strategic thinking. Others consider the social and environmental impacts of the dam so disastrous that construction cannot be justified at all. Despite these differences, the MDTX has been able to define a common objective of stopping the construction.

6.2. Actors involved

The MDTX has 30,000 members who belong to rural workers' unions, farmer associations, women's groups and church-related organisations (Nepstad, 2005; Scholz, 2005). This movement is also allied with research organisations and NGOs in order to design alternative development strategies for the region based on small-scale farming. Due to the weakness of the judiciary in the state of Pará, the MDTX has also formed an alliance with the *Ministério Público* (public prosecutor) who has the obligation to defend both social and individual constitutional rights as well as public interests. The Constitution grants the public prosecutor an autonomous status and ample rights to sue public bodies in the event that they do not obey the law. Moreover, the prosecutor can force other public bodies to take specific measures. These competencies are especially relevant when it comes to ensuring that environmental laws and procedures are respected.

6.3. Institutional arrangements

As a politically oriented partnership, the MDTX can be considered an alliance which is a common action of various organisations with a specific objective which ends when the objective has been attained. The public prosecutor (MPF) is crucial for the partnership for preventing the undermining of environmental law and indigenous rights. Representatives of the indigenous people who were to be affected by the dam informed the MPF that the responsible electricity company, Eletronorte, was conducting an environmental impact assessment without previously asking the congress for permission (the latter is a legal requirement for projects interfering with indigenous areas). Later, the MDTX entered into a close alliance with the MPF in order to stop the ongoing environmental impact assessment. The federal court accepted the arguments of the MPF and indeed ordered an end to the environmental impact assessment, thereby postponing the construction of the dam.

6.4. Socioeconomic benefits of the partnership

The MDTX has succeeded in making public actors aware of the risks associated with large-scale investments and in creating a public consensus around the proposed alternatives. This success was based on its alliance with the MPF, and on its capacity to organise a large local rally in Altamira, close to the planned construction site, where protest was voiced. This came rather unexpectedly for both Eletronorte and its allies in public

administration at local, regional and federal levels. MDTX was able to achieve this because it (i) is well-organised around a common objective (to channel funds for development into the region and stop the construction of the Belo Monte dam); (ii) has solid knowledge of the ecological and social consequences of the dam; (iii) has a clear vision of alternative local economic and social development; and (iv) maintains strong alliances with external actors. The latter include mainly research organisations, as well as the federal prosecutor and foreign networks which support the movement's cause, such as the International Rivers Network (IRN), a transnational network opposed to large dams.

6.5. Socioeconomic drawbacks

MDTX involves a large number of actors, but it failed to establish an alliance with public authorities at local and regional levels. This was mainly due to the public sector's relative lack of technical, financial and organisational capacity and its inability to evaluate the impacts of infrastructural works adequately. This resulted in a vacuum at local level where public authorities should have been present to decide on issues of public interest. Consequently, civil society had to turn to public actors at federal level in order to negotiate solutions. This local policy vacuum tended to strengthen private economic interests which further eroded the negotiation process, as powerful local economic actors often prefer the use of violence to achieve their objectives. The extent to which such violence is used, particularly in land conflicts, is illustrated by data from the Pastoral Land Commission (CPT). In the wake of the 318 land conflicts registered in Brazilian Amazonia in 2006, 3716 families were evicted from their land, 2357 houses and 670 fields were destroyed and 764 families suffered damage to their assets. In the same year, 143 leaders of social movements were threatened with murder and 28 were effectively assassinated. Twenty-four of these murders occurred in the state of Pará (<http://www.cptnac.com.br>).

6.6. Environmental aspects

Partnerships with research organisations allowed the MDTX to come up with alternative sustainable production systems and technologies. International relations between NGOs and civil society organisations from Brazil and industrialised countries helped increase local environmental capacity to carry out evaluations of federal investment projects. In this way, partnerships and alliances help create the critical mass required to demand local participation and the inclusion of environmental concerns in national development planning resulting in positive long-term effects on forest governance.

7. Discussion

The cases reviewed in this article show various modalities of forest-related partnerships and several lessons learned. A general comparison is presented in Table 4. Below we review the main challenges facing partnerships for sustainable forest management and good forest governance. Next, we formulate some conditions under which partnerships may help create an enabling environment for sustainable forest management. In doing so, we realise that we are skimming over some important issues (such as land tenure, the need to empower communities and the challenges for indigenous communities to engage in partnerships) that deserve more attention than is possible here.

7.1. Negotiating common objectives

In our review of impediments to sustainable forest management at the beginning of this paper we started by noting that partnerships may provide an institutional framework for nego-

Table 4
Comparative overview of partnerships for sustainable forest management and good forest governance

Partnership	Objectives	Actors involved	Product(s) involved	Institutional arrangement	Socioeconomic benefits	Socioeconomic drawbacks	Environmental aspects
The Body Shop-A'Ukre partnership for Brazil nut oil production	<ul style="list-style-type: none"> • Socially responsible production of Brazil nut oil 	<ul style="list-style-type: none"> • A'Ukre (Kayapó) community in the state of Pará, Brazil • The Body Shop • FUNAI 	Brazil nut oil from <i>Bertholletia excelsa</i> Humb & Bompl	Company–community partnership with a cooperative controlled by FUNAI employees acting as a broker	High premium price (US\$ 35/kg) for large part (70%) of the community	<ul style="list-style-type: none"> • Less time for rituals, socialisation and leisure • Women may benefit less from processing • Control in hands of third party 	<ul style="list-style-type: none"> • Lack of monitoring • Total livelihood portfolio may become less sustainable • No alternative to more harmful activities
The Muaná Alimentos–community partnership for açai and palm heart production on Marajó Island	<ul style="list-style-type: none"> • Sustainable production of açai and palm heart from <i>Euterpe oleracea</i> Mart. 	<ul style="list-style-type: none"> • Members of labour cooperative that manages company plantations • Communities on Marajó Island, Pará • Muaná Alimentos • Company-created NGO 	Açai and palm heart from <i>Euterpe oleracea</i> Mart.	Company–community partnership with external investor involvement and a cooperative acting as a broker	Loan 28% higher than minimum wage; no child labour	<ul style="list-style-type: none"> • Neglected home gardens and farm plots may reduce food security 	<ul style="list-style-type: none"> • Large potential for sustained production but incompatible with biodiversity conservation
The Amazon Paper project in northeast Pará	<p>By implementing a production chain for ecological paper:</p> <ul style="list-style-type: none"> • Increase local value adding and economic competitiveness • Raise the sustainability of NTFP production • Alleviate poverty 	<ul style="list-style-type: none"> • Federal University of Pará • POEMA (NGO) • International donors (JICA, Oxfam Novib, DEG, World Bank) • Private sector • Rural and urban population of NE Pará 	Fibre from <i>Ananas erectifolius</i> L.B. Sm., palm tree barks and branches, natural dyes and/or agro-industrial residues (e.g. sugarcane bagasse, coconut shell fibres).	Research partnership involving a complex web of actors from multiple sectors and scales	Income from fibres and ecological paper production; access to niche market	<ul style="list-style-type: none"> • Complex organisation; high transaction costs due to the many actors involved 	<ul style="list-style-type: none"> • Making use of fibres from domesticated plants stimulates the use of already degraded areas and reduces pressure on primary forests
Partnerships for extractive reserves in Rondônia	<ul style="list-style-type: none"> • Guarantee the rights of local populations to harvest natural resources • Satisfying the population's basic needs • Biodiversity conservation • Strengthening social organisation for participatory management 	<ul style="list-style-type: none"> • World Bank • Federal and state government agencies (IBAMA, SEDAM) • (E)NGOs (e.g. ECOPORÉ) • Organisation of rubber tappers (OSR) • 326 families 	Rubber from <i>Hevea brasiliensis</i> , Brazil nuts from <i>Bertholletia excelsa</i> Humb & Bompl, and timber (various species)	Multi-sector partnership involving actors from multiple sectors and scales	Forest as a source of livelihood protected; support for income-generating activities and infrastructure	<ul style="list-style-type: none"> • Weak state agencies hence irregular demarcation of extractive reserves, exclusion of relevant actors and ineffective implementation of project components • Diverging interests between the parties involved • Weak economic feasibility and donor dependency 	<ul style="list-style-type: none"> • Insufficient capacity of federal and state agencies to protect the reserves from loggers and land grabbers
MDTX in protest at the construction of the Belo Monte dam, Pará	<ul style="list-style-type: none"> • Channel funds to the region for alternative development scenarios and stop the construction of the Belo Monte dam 	<ul style="list-style-type: none"> • 113 civil society organisations, representing farmers, women, indigenous peoples, youth, scientists and religious groups 	Not applicable	Civil society alliance	Awareness raising among public actors about the risks of the dam and public consensus around the proposed alternatives	<ul style="list-style-type: none"> • Weak local government and judiciary 	<ul style="list-style-type: none"> • Indirect positive effects on the environment through advocacy and awareness-raising campaigns

tiated forest use from a multi-stakeholder perspective. Our case studies demonstrate that the parties in a partnership may take part for different and sometimes conflicting reasons. While community members tend to be primarily motivated by the wish to improve their livelihoods, companies tend to be driven by the possibility to capitalise on profitable niche markets for certified and fairly traded forest products. Public actors may find multi-sector partnerships attractive as a source of funds for infrastructural and social investments, while international donors might be more concerned about forest and biodiversity conservation. In contrast, civil society and research organisations often see partnerships as a mechanism for poverty alleviation, social equity and environmentally sound development.

In order to create stable partnerships, it is therefore imperative to deal with diverging interests and the underlying power imbalances. This requires the empowerment of the weakest parties in the arrangement, notably local communities, with specific attention being paid to their negotiation, management and marketing skills. Company–community partnerships tend to overlook this aspect unless an NGO acts as an intermediary or broker between the company and community. Through the participation of civil society organisations, multi-sector partnerships offer better prospects for a fair negotiation process. These organisations can play a role in mobilising communities, defending their interests (including those related to tenure and use rights) and compensating community members' lack of negotiating skills when the objectives, conditions and benefits of the partnership are being established. Politically oriented partnerships can supplement these efforts through advocacy for an enabling legal and institutional framework that make these partnerships work for local communities and thus help reduce competing claims to forest land.

7.2. Limited involvement of public actors

The cases presented in this article illustrate that a broad range of actors are involved in forest-related partnerships, including international donors, private companies, civil society organisations, local communities and research organisations (Tables 2 and 3). Even if a broad range of actors are involved in partnerships, they will fail to achieve their objectives if important actors are excluded. In particular the multi-sector partnerships for extractive reserves and the politically oriented MDTX illustrated the important role of public actors (in particular the judiciary) in securing tenure and use rights and the enforcement of environmental laws—two important requisites for sustainable forest management. Capacity building and institutional strengthening at local government level may contribute to improve the capacity of public actors to engage effectively in multi-sector partnerships or cooperative politics. In several Amazonian states, public actors become more actively engaged once new governments have been elected that show a greater willingness to work with all sectors of society. This is currently the case for the states of Acre, Amapá, Amazonas and Pará.

7.3. Create equitable and cost-effective institutional arrangements

Each type of partnership requires a well-coordinated institutional arrangement. In company–community partnerships the number of actors is small and a third party is often needed either as an investor or as a broker to defend the interests of local communities. Multi-sector partnerships demonstrate a high organisational complexity which may involve high transaction costs that are a considerable burden on the net benefits of the partnership. The creation of producer associations and cooperatives could help reduce transaction costs (Mayers and Vermeulen, 2002). In the case of political partnerships, the rule of law and protection of basic human and political rights are fundamental.

7.4. Limited benefits of product-oriented partnerships for local communities

Partnerships generally aim to generate two main kinds of benefits. One is the economic empowerment of local communities through new income-generating opportunities and improved market access. Another is the political empowerment of previously marginalised groups in terms of increased participation in decision-making and access to land and natural resources. Political empowerment can be an important condition for economic empowerment, given that livelihoods depend on secure rights to land and resources.

In terms of economic empowerment, the partnerships examined in this paper reveal a number of different limitations. Although partnerships based on NTFP exploitation may enable local communities to access profitable niche markets and engage in income-generating activities, they generally have limited capacity as regards lifting people out of situations of poverty (Neumann and Hirsch, 2000; Sunderlin et al., 2005). The economic viability of product-oriented partnerships is also a point of concern, as the case of Muaná Alimentos showed. Bankruptcy may paralyse the trust and willingness of communities to engage in partnerships for years. Disappointing returns in terms of income may furthermore result in people developing more rewarding but less sustainable activities such as gold panning and unsustainable logging, thereby prejudicing the viability and credibility of partnerships. Considering these results, partnerships seem to have limited capacity as regards dealing with an important economic impediment to sustainable forest management, namely the generally perceived lack of long-term profitability.

In relation to this, serious questions have been asked regarding whether the NTFP production that prevails in forest-related partnerships may ever provide an alternative to more lucrative timber deals (Morsello, 2002). It is therefore relevant to consider whether product-oriented partnerships can successfully combine NTFP production with (certified) timber production. Company–community deals for timber production are still rare in Brazilian Amazonia (Vidal and Donini, 2004) due to unclear land rights associated with a lengthy and complicated process to secure land tenure (Lentini et al., 2003), the time it takes forest institutions at federal level (IBAMA, FUNAI) and state level (such as the Secretary of the Environment (SECTAM) in the state of Pará) to approve management plans (partly due to a lack of expertise) and, last but not least, competition with illegal logging (Vidal and Donini, 2004).

Although the cases reviewed in this article did not show this to be the case, long-term arrangements in settlement areas based on 30 years cutting cycles are hampered by social dynamics which accompany high rates of lot turnover and re-settlement (Schmink and Wood, 1992; Ludewigs and Brondizio, 2005). Only one case of a company–community partnership for sustainable timber extraction has been reported in the literature, namely the partnership between a small logging company (MAFLOPS, *Manejo Florestal e Prestação de Serviços*) and smallholders along the Santarém-Cuiabá road (BR-163) (Nepstad et al., 2005). Although the project seems to be promising in terms of social investments and support relating to the acquisition of secure land titles and legal management plans, it is too early to assess its long-term benefits and sustainability. The implication is that more studies are needed to explore the economic benefits of partnerships in relation to RIL and the combined production of timber and non-timber forest products.

As far as political empowerment is concerned, multi-sector partnerships and civil society alliances are the most promising, particularly in terms of stimulating local actors to participate more effectively in policy making. However, one feature of partnerships is that they involve actors with different environmental capacity and abilities to influence outcomes. These differential abilities are deri-

ved from their relative power, access to information and resources. Even product-oriented partnerships have a strong political element, in the sense that companies are usually more powerful than communities. This may affect the equity of the deals agreed.

7.5. Dealing with socioeconomic drawbacks

In any partnership, attention should be paid to potential drawbacks at community level, like unequal distribution of benefits according to gender or age, interference with subsistence activities that may threaten food security, trade-offs in terms of time available for socialisation which negatively impact on people's resilience to shocks, and negative consequences of power imbalances. Several drawbacks are inherent in trading with indigenous communities, such as cultural and language barriers, their lack of knowledge of the markets' logical frame of mind, and notions of equality which conflict with the hierarchies common in an enterprise (Bray and Merino, 2003). The cases illustrate that overcoming such barriers, and building trust and co-management institutions need time—often more than the donor's average project cycle. Partnerships therefore need long-term commitment and realistic timeframes.

7.6. Environmental aspects

Most of the partnerships described in this article deal with NTFPs, the commercial exploitation of which has been promoted since the end of the 1980s as a strategy to combine the goals of biodiversity conservation and poverty alleviation (e.g. de Beer and McDermott, 1989; Nepstad and Schwartzman, 1992). This was based on the idea that NTFPs could be harvested without major damage to the forest, its environmental services and biological diversity. While NTFP commercialisation indeed has positive conservation outcomes at landscape level, the ecological effects of NTFP harvesting on the target species are positive only in case of cultivated NTFPs, but negative in many other cases (Kusters et al., 2006). NTFP harvesting may result in a gradual reduction in the vigour of the plants, decreasing rates of seedling establishment, a potential disruption of the animal population and nutrient loss from harvested material (Peters, 1996).

Overexploitation is a serious risk for partnerships set up for the extraction of Brazil nuts, rubber, palm heart and *acaí* (Shanley et al., 2002). In order to prevent over-harvesting and resource depletion, NTFP-based partnerships should establish guidelines for sustainable harvesting as well as monitoring systems. In addition, attention should be paid to the ecological sustainability of activities that people undertake owing to changed livelihood portfolios as a result of participation in new markets. Finally, environmental legislation needs to be enforced and protection from land grabbers and illegal loggers needs to be provided in order to achieve sustainable forest management. The latter two aspects require good forest governance, i.e. an enabling regulatory and institutional framework, which advocacy and awareness-raising campaigns under politically oriented partnerships may help to create.

8. Conclusions

We have argued that alternative scenarios are needed to progress beyond RIL for three reasons. First, there is the need to deal with an increasing number of actors in forest governance and management. Second, the scope of forest management is tending to broaden with greater attention being paid to social objectives at community level and to products other than timber. Thirdly, there is the need to address issues beyond the forest management unit which are needed to create the proper political, legal and institutional context in which RIL can thrive. Since RIL focuses

on the forest management unit, or even the annual coup, additional strategies are required to address these issues. We propose partnerships as one such a strategy due to their potential to create win–win situations which cannot be achieved by RIL alone.

Forest-related partnerships are, however, no panacea for unsustainable and socially undesirable practices. They can help reduce some of the impediments to sustainable forest management by (i) creating an institutional framework for a multi-stakeholder perspective on forest use, (ii) locally advancing negotiated solutions to land use which may help reduce competing claims to forest land, (iii) enhance community involvement in forest management, (iv) create win–win situations and enhance the actors' capacities and scope for action by joining power, assets, knowledge and skills, and (v) compensate for a lack of enabling policies by lobbying the conditions for sustainable forest management and the proper enforcement of environmental laws and tenure rights. However, several problems will have to be dealt with in order to create stable and successful partnerships. As far as product-oriented partnerships are concerned, the characteristics of successful partnerships include (i) fairly negotiated objectives and conditions of the deal, (ii) the empowerment of local communities in order to overcome power imbalances and diverging interests, (iii) the inclusion of brokers with a 'watchdog' function, (iv) equitable and cost-effective institutional arrangements with a flexible intermediate organisation capable of mediating the parties' inputs at minimal transaction costs, (v) sufficient and fairly shared benefits based on economically viable operations, and (vi) the establishment of sustainable harvesting guidelines and appropriate monitoring systems.

The more politically oriented partnerships (MDTX, as well as the partnerships relating to extractive reserves) clearly showed that the involvement of public sector actors and links with the judiciary are important conditions for good forest governance and sustainable forest management.

Finally, conditions have to be realised at policy level in order to deal with environmentally unsound and socially unjust policies and practices and create enabling policies. This requires awareness-raising campaigns and advocacy for pro-poor forest governance. RIL and product-oriented partnerships rarely engage in this work and politically oriented partnerships based on civil society coalitions are therefore an important supplement. Only where such watchdogs are active can an enabling policy, legal and institutional environment be created in which reduced impact logging and sustainable forest management can be realised.

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