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The Policy Terrain in Protected Area Landscapes

How Laws and Institutions Affect Conservation, Livelihoods, and Agroforestry in the Landscapes Surrounding Campo Ma'an National Park and The Dja Biosphere Reserve, Cameroon

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ALAM's Mission: To improve the science and practice of conservation through better understanding of agroforestry and communities in landscapes that comprise agricultural lands, trees, and protected areas.



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Introduction

The World Agroforestry Centre (ICRAF) has the opportunity to become a new leader within the field of conservation. ICRAF can offer a practical “middle ground” to the contentious debate surrounding conservation of protected areas and the rights of local communities that depend upon these resources through the promotion of appropriate agroforestry technologies which are founded upon high quality research and evolve from local priorities and demands. By promoting agroforestry as a landscape conservation strategy, ICRAF can expand ideas about how best to conserve biological diversity in a way that includes (rather than excludes) people and agroecosystems.

Using agroforestry in buffer zones is not a new idea per se. Within conservation and development circles many organizations have used agroforestry as part of integrated conservation and development projects (ICDPs) in an attempt to meet both conservation and livelihood goals. Yet within such projects, agroforestry was typically one activity amongst many geared towards a larger project goal. Unfortunately, very little has been written documenting the actual effectiveness of agroforestry in ICDPs (Ashley and Spainhower 2002).

Recently, a number of scientists have offered new strategies that promote agroforestry as a means of improving local livelihoods while conserving important species and environmental functions. Peter Brosius and Diane Russell (2003) proposed to “reinvent” community-based conservation by suggesting the principle of building assets across generations. As such, assets can include natural assets, social assets, and economic assets. Leakey and Tchoundjeu (2001; see also Tchoundjeu et al. 1999) made first-rate progress in the domestication and marketing of indigenous fruit trees in the humid lowlands of West Africa, thus supporting conservation through use. Additionally, Schroth and colleagues (2004) recently authored a synthesis of the benefits that agroforestry can offer biodiversity conservation in tropical landscapes. They identified three hypotheses on how agroforestry can contribute to conservation: 1) agroforestry can protect nature by reducing pressure to deforest land, 2) agroforestry can provide habitat for native plant and animal species, 3) agroforestry can serve as a benign matrix land use for fragmented landscapes. Despite these benefits, however, they state that integrating agroforestry into conservation is a major policy and institutional challenge.

While the opportunities seem quite promising, it is important to consider how the given policy environment (and those practices that ensue from it) impacts agroforestry efforts that fall within the sphere of influence of protected areas. Identifying opportunities and bottlenecks, as well as constructing an understanding of how agroforestry can best function within a variety of policy landscapes, will provide a necessary foundation upon which to build a buffer zone agroforestry strategy.

Scope of Study

1. For the purpose of this study the term policy is broadly defined as “a rule that influences the behavior of an individual, or firm, or organization” (Ender and Giovannucci 2003).

2. The government’s administrative structure is organized into *préfectures* (*prefecture*) and *sous-préfectures* (*sub-prefecture*), which are administered by *préfets* and *sous-préfets* who are appointed at the national level. This structure loosely translates into provincial and district level government. Local government is seated within a *commune* (*commune*).

Communes are given either rural or urban status and comprise a number of villages, or a large town or city and its surrounding villages. The commune is run by a locally elected mayor and other elected officials.

3. *Unite Technique Operational* – A structure that manages all of the actors and activities operating within the protected area landscape to create a coordinated joint workplan.

In order to address this lack of political and social understanding, ICRAF commissioned a study of the “policy terrain” within the humid forest landscapes surrounding Cameroon’s Campo-Ma’an National Park (CMNP) and The Dja Biosphere Reserve (The Dja), and its effect (either actual or potential) on agroforestry in the protected area landscapes.¹ The working hypothesis for the study is as follows: Agroforestry can help to mediate the policy terrain of protected area landscapes by meeting the livelihood demands of communities and supporting the conservation goals of protected areas.

In order to test this hypothesis, a list was compiled of all of the relevant policies, laws, and customary laws as cited by key stakeholders from various domains. In particular this report aims to look at how the “ground-level” reality, which does not necessarily reflect national level policies, may directly or indirectly affect agroforestry efforts, determine who the potential winners and losers may be of such a law, and identify opportunities where agroforestry can play a role. More specifically, this refers to identifying converging policies and conditions that create a local demand for agroforestry products, services, or benefits. Relevant stakeholders include: government officials, NGOs, local officials, local people, and marginalized populations. Policies of particular interest include those related to the environment, natural resource management and use, forestry, agriculture, agroforestry, land tenure, environmental conservation, protected area management, markets, gender, and traditional practices.

With a basic understanding of the political and legal terrain, it is then important to identify how different environmental and natural resource management stakeholders operate and interact within the policy terrain in order to gain a description of institutional policies, practices, and their potential impacts. Four key assessment areas were chosen – technology, extension, markets, livelihood – which provide a framework for understanding the types of knowledge and tools stakeholders are introducing (technology), their methods of sharing and disseminating information and practices (extension), how they are working to diversify and/or increase farmer incomes (markets), and finally how farmers judge their standard of living according to their own indicators (livelihoods).

Methodology

Two tropical humid forest sites were selected to allow comparison between a newly gazetted national park and a nature reserve that was established over 50 years ago. Campo Ma’an National Park (CMNP) is located in the Southern Province on the border with Equatorial Guinea. Research was conducted in two towns; Campo, a *sous-préfecture*² located on the southwest corner of the park on the Atlantic coast, and Ma’an, a rural *commune* situated in the southeast corner of the park. These two sites were selected because they are accessible and home to the operational bases of the UTO,³ park conservator, and WWF

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Campo Ma'an Project. At CMNP key informants helped to identify four NGOs and two logging companies that operate near Campo and Ma'an. Semi-structured interviews were conducted with representatives from three of the NGOs and one of the logging companies. These organizations included: WWF, Cercle de Promotion des Forêts et des Initiatives Locales de Développement (CEPFILD), Structure d'Appui à la Gestion de l'Environnement et le Développement (SAGED), and the logging company HFC-La Forestiere de Campo.

The Dja Biosphere Reserve (The Dja) falls within the eastern and southern provinces. Research was conducted in the sub-prefecture town of Lomié, situated on the eastern border of the reserve. Lomié was chosen due to its relative accessibility and the high number of NGOs operating in the area. At The Dja, ten NGOs and one program were identified through a key informant as operating within the Lomié area. All of the local NGOs are part of the umbrella organization Réseau des ONG et Associations Locales du Dja (ROLD).⁴ Semi-structured interviews were conducted with at least one representative of each organization. These organizations included Programme Regional de Conservation et d'Utilisation Rationnelle des Ecosystème Forestiers d'Afrique Centrale (ECOFAC), IUCN, Centre d'Appui au Développement de la Femme (CADEFE), Cooperative Agro Forestier de la Trinationale (CAFT), Centre pour Environnement et le Développement (CED), Centre d'Etude Forestier de Dja (CEFDja), Centre International d'Appui au Développement Durable (CIADD), La Generale d'Epargne et de Credit de l'Est Cameroun (GECEC), Observatoire des Cultures Baka et Bantu pour l'Education, l'Environnement et le Développement Communautaire (OCBB), and Pre Vert.⁵

In the field, six government representatives were interviewed using a semi-structured format. Interviews were conducted based on the availability of local officials. In CMNP, interviews took place with the park's conservator and the deputy mayor of Ma'an. In The Dja interviews were conducted with the deputy *sous-préfet* for Lomié, the second deputy mayor of Lomié, the conservator for The Dja's Eastern province region, and the chief forest and hunting officer.

In the capital of Yaounde, a semi-structured interview and an informal discussion were conducted with representatives of the ministry of environment and forests (MINEF); the deputy director charged with non-timber forest products (NTFPs), and the director of national parks. A semi-structured interview was also held with the director of the USAID-funded Central African Regional Program for the Environment (CARPE), as CARPE carried out previous studies around The Dja Reserve.

Seven semi-structured group interviews were conducted with communities living in proximity to the two protected areas. Three randomly selected villages, stratified according to ethnicity, were interviewed per site. Selection of villages was stratified in order to represent both the dominant Bantu ethnic groups and the minority Baka/Bagyeli (pygmy) populations.

At Campo, fifteen villages were identified within 20 km of the town; among them, Doum Essamebenga was randomly selected for interviews. Because the number of Bagyeli settlements were very few in number we intentionally chose to interview the

4. ROLD was formed to create a structure for NGOs and associations operating in concert with one another along the border of The Dja Reserve in order to engage experiences, harmonize approaches and strategies of intervention, and facilitate communication between members to avoid repetition on the ground.

5. See Appendix 1 for a description of the organizations.

Bagyeli camp associated with the village of Afan Essokye, as it was the only one accessible by vehicle from either Campo or Ma'an. The third village was selected from Ma'an. Sixteen villages were identified within 20 km of the town, and Meko'o Mengon was randomly selected for interviews.

At The Dja, selection of villages was based upon an additional factor – though no longer operational, IUCN had established a tree domestication agroforestry project in one of the villages outside of Lomié. Therefore, we intentionally chose Pohem Poum as the site for one of the interviews. The second village, Djebe, was randomly selected from the eight Bantu villages located within 20 km of Lomié. The third, Payo, was randomly selected from the two Baka (pygmy) communities within 20 km of Lomié. Of note is that Pohem Poum (PP) is physically divided along ethnic lines into PPI, where a Baka community lives, and PPII, which is a Bantu community. Both sides of the village were therefore interviewed separately.

Because multiple visits to each village were not possible within the given time frame, the most appropriate method that emerged for conducting interviews was to ask the chief or group leader to assemble representatives, including men and women, to participate in the interview on the chosen day. At CMNP a total of 32 people, 14 women and 18 men participated in the semi-structured village interviews. At The Dja a total of 78 people participated, including 36 women and 42 men.⁶ In total, four Bantu villages and three Baka/Bagyeli villages or settlements were interviewed.

Ideally, gender specific interviews with separate groups of women and men per village would have allowed women greater opportunity to participate and may have revealed perspectives that were not shared during the interviews. Unfortunately, time constraints, logistics, and local protocol made this scenario impossible. Nonetheless, questions were specifically directed to women, and women's voices were quite strong during interviews with Bantu communities. While women did not speak as often, they were forceful in expressing their views. Baka and Bagyeli women did not participate as openly as the Bantu women; in these communities, however, few men spoke either, as the leaders were often the sole respondents to the majority of questions. This is not surprising given the levels of exploitation and abuse these communities have endured, and their hesitance to trust outsiders.

6. Head counts were taken at the start of each interview. It was quite common for numbers to fluctuate during the sessions as new participants joined or others left.

Policy Terrain

Cameroon operates within a largely centralized political structure in which ministries create policy and parliament enacts supporting legislation. Laws are administered by both appointed government representatives and elected officials at provincial, divisional, and district levels. At the local level, power is entrusted to locally elected mayors of urban and rural *communes*.

In the past decade, Cameroon has moved to increase participation in natural resource management, and recent legislation reflects this desire. The state, however, still retains control over much of Cameroon's forests. Forests cover 60% of national territory

(MINEF 1998) and are divided into permanent forest estate (PFE) and non-permanent forest estate (NPFE). Therefore, all categories of management must be aligned with either the PFE or the NPFE.

In 1994 a framework law was established which focused on forests, wildlife, and fisheries. The main objective of the law was to develop a national zoning plan to serve as a basis for national environmental management plan (MINEF 1996). Further, the law provides an opportunity for community participation through the introduction of community forestry and community wildlife management opportunities. It introduced the sharing of benefits from national parks and reserves with local communities, and the allocation of taxes from logging concessions to adjacent villages and their municipalities for social and development projects. While these opportunities and benefits have not been without difficulties, they do represent a chance for rural communities to profit from forest resources.

Building off the initial 1994 law, Cameroon has since committed to the Yaounde Declaration, which strives for better commercialization of wood, sustainable partnerships, transboundary protection, and trust fund establishment. In 2002, it also created a National Biodiversity Strategy and Action Plan in cooperation with WWF.⁷

7. Tabe Tanjong, WWF Policy Officer, personal communication, December 2, 2003.

National Policies

Permanent forest estate (PFE) and non-permanent forest estate (NPFE)

The 1994 laws and their texts of application in 1995, leading up to the Forest and Environment Sector Programme (FEST 2003), divides all forest within the national territory into permanent (PFE) and non-permanent (NPFE) domains. The PFE is made up of *forêt domaniales* (state forest), which is comprised of national parks and reserves, buffer zones, and logging concessions,⁸ and *forêt communales* (commune forest). The NPFE includes *forêt du domaine national* (national forest domain), *forêt communautaires* (community forest), and *forêt des particuliers* (private forest).

8. Logging concessions are commonly referred to as UFAs.

The government of Cameroon does not recognize traditional land tenure arrangements within the either PFE or NPFE. Most smallholders do not have a legal title to their land and as a result villagers and forest dwellers have lost legal access to or experienced the degradation of their traditional territories. The national forest domain (part of the NPFE) is largely made up of secondary forest that lacks titles but clearly belongs to individuals, families, and clans. As a result, areas of the national forest domain are easily sold by the state to agro-industrial plantations. Furthermore, people will continue to lose rights and access to their land as the government intends to increase the area of the PFE.

Laws promoting associations (1990), cooperatives and groups (1992), NGOs (1999)

In the 1990s a series of laws were passed which promoted the creation of associations, cooperatives, groups, and NGOs. These laws increased the common person's ability to participate in civil society. The results of these laws are evident in the number of locally and nationally based NGOs, groups and associations that are now working around CMNP and The Dja and over the rest of the country.

Conservation policies and user rights

Cameroon has committed to doubling the size of its current PFE to cover 30% of the national territory. It aims to achieve this goal through the creation of additional national parks, faunal reserves, and forest reserves. While this commitment is commendable from a conservation perspective, it may pose problems for rural communities who will lose vast swaths of forest in which they cultivate crops, collect non-timber forest products (NTFPs), and hunt. By increasing the number of protected areas, access to land and important NTFP resources will be restricted, traditionally recognized tenure arrangements will be nullified, the extent of “border” and “peripheral zone” will increase, and anyone who crosses these borders to maintain their traditional rights can be prosecuted or fined.

Historically, as is evident in the case of The Dja, efforts to establish protected areas neglected local land-use practices and customary tenure arrangements. Despite the fact that people were residing in and actively using forest resources, local communities were not consulted when The Dja was gazetted as a reserve in 1950. This oversight has left a bitter taste in people’s mouths, and has since been reinforced due to poor relations with the reserve’s managing body, ECOFAC.

Creation of CMNP in the late 1990s reflects Cameroon’s more recent commitment to use participatory methods and to involve local people in the conservation process. The populations of Campo and Ma’an were incorporated into the management plan, and specific zones for community forests and hunting are in the process of becoming a reality through so-called micro-zoning.⁹

Nonetheless, local people encountered in this study are not satisfied with their present situation, stressing their loss of resources and user rights, and difficulties controlling animals that raid their fields. According to the mayor of Ma’an, the park’s management plan refers to village compensation, but none has ever been received. In Lomié, a local NGO reflected that there are more benefits associated with living next to a logging concession than to a protected area.

No access to protected areas

There are some benefits, as well as costs, at the local and global levels in prohibiting local people from using the protected area resources, although these remain to be fully assessed. The national government benefits from money gained through tourism and conservation projects. Yet despite talk of benefit sharing or community management schemes, rural small-holder communities living in the periphery of protected areas lose legal access to resources like land, meat, fruits, nuts, and medicinal products which hold important subsistence and commercial value. Legality aside, local people continue to enter these protected forests to hunt, cultivate crops, and collect NTFPs. In this sense, access has not actually been lost; rather, people’s rights to those resources have changed. In entering the protected area, people have become “poachers” and bear an increased risk.

9. Micro-zoning offers real opportunities to increase access and user rights to land and forest, but it largely depends on the vision and will of individual park officials, particularly with regard to hunting zones.

No hunting in protected area

Hunting within a park or reserve is illegal. According to the villages interviewed, this law only serves outsiders or the government. According to the director of ECOFAC, The Dja's managing body, park guards also benefit from exploiting local poachers. Prohibiting hunting within the two protected areas has negative economic consequences for local populations, but the law by itself does not stop hunting within The Dja or CMNP in practice. One issue raised by villagers is that the borders must be clearly delineated so that hunters can at least make informed decisions.

No collection of NTFPs in protected areas

Local people are not permitted to collect NTFPs within the CMNP or The Dja. This law ignores the fact that people's rights to family and clan resources extend beyond the boundaries of official habitation/agroforestry zones and within the borders of both protected areas. For example, in the village of Meko'o Mengon, one man's family has a two hectare stand of *bita kola* (*Garcinia kola*) trees that is now cut off from use within the park. The Dja's conservator claims that while this is the law, it is not enforced and people can go into the park to collect NTFPs like bush mango (*Irvingia gabonensis*), *moabi* (*Baillonella toxisperma*), and *njangsang* (*Ricinodendron heudelotti*), as such collection does not hurt the integrity of the forest. The director of ECOFAC also stated that although he is opposed to local people going into reserves, he cannot always prevent this as he lacks the resources and understands that the people need to live. This shows that discrepancies exist between the law on paper and what is feasible on the ground.

Reserved species laws

In Cameroon, any tree can be declared "reserved" for the purpose of conservation or regeneration within an area of exploitation¹⁰ (*Recueil de Texte Officiels* 1994-1996). Additionally, all naturally growing trees in Cameroon belong to the state, even those trees growing on land under cultivation.

10. This includes logging concessions and potentially community forests as well.

Property Rights and Zoning

There is a distinct separation between traditional property rights and land tenure arrangements, on the one hand, and today's legal framework dictating contemporary ownership of land and property rights on the other. Under Cameroonian law all forested land belongs to the state as part of the PFE or NPFE. All unoccupied land, or land without an individual title, falls within the national forest domain as part of the NPFE. "Unoccupied" land refers to that which is not visibly under use, and does not take into account areas under fallow or customary claims on secondary forest. As a result, the government has the authority and opportunity to extract "forest rent" (Wunder 2001) from zoning logging concessions, agro-industrial zones, and national parks and reserves. Community forests and habitation/agroforestry areas have also been zoned for the benefit of rural communities.

Traditional land tenure arrangements are neither legal nor recognized. Traditional user rights within these zones are permitted, but commercialization of such forest products (raphia, bamboo, rattan, firewood) is not. According to van den Berg and Biesbrock (2000), the average Cameroonian does not own a title to his or her land. In most cases it is only elites who are capable of navigating the complicated and costly centralized process to gain titles.

Customary property rights

The *doit d'hache* (right of the first occupant) is the guiding rule for customary land tenure in the forest zone of Cameroon. According to Dkamela (2001), traditional property arrangements, “create a complex of overlapping individual and group rights on the same land and the same resource”. The group of authorized land-users, however, is usually larger than those people who actually exercise their rights. Rights are generally inherited from the father to the son, excluding daughters. However, women regulate use of NTFPs, and management can fall at various social-organizational levels (Dkamela 2001). Ethnic groups apply rights differently. For example, in Badjoue (Bantu) villages, rights to trees are shared by the entire village, excluding oil palm. In Bulu (Bantu) villages, rights are divided according to social group, land category, and the way that rights were obtained. Within all of the groups customary property rights are most secure under intense cultivation.

Commonly referred to as pygmies, Bagyeli and Baka communities are traditionally semi-nomadic forest dwellers whose customary tenure rests within the undisturbed forest. Though they only cultivate a limited supply of food crops, their agriculture rights are similar to that of Bantu communities. Their primary source of income and food is NTFPs that are collected freely from the primary forest (Dkamela 2001).

Logging concessions

Cameroon’s government sells licenses for logging concessions to national and international companies to exploit forest parcels (zoned as UFAs) on 30-year rotations. These concessions are part of the PFE. The government also sells *assiette de coups*, which constitute one-time leases that allow companies to take timber within a fixed time frame. One emerging issue with regard to logging concessions is that the companies, in taking over *commune* lands, cut important NTFP “orchards” or stands of trees that fall under customary ownership. For example, the village of Meko’o Mengong in the Ma’an region lost important *bita kola* (*Garcinia kola*) trees because the wood is also a valuable timber.

Habitation/agroforestry zones

These zones are made up of villages, land under cultivation, community forests, and forest parcels reserved for future cultivation. However, the term agroforestry is used in a very broad sense and is ill defined. Compared to the size of logging concessions and agro-industrial zones, the habitation/agroforestry zone is extremely small – too small, according to villagers from Meko’o Mengon on the border of Campo Ma’an. Van den Berg and Biesbrock (2000) also highlight the fact that within the agroforestry zones the

forest administration can allocate logging licenses of 2,500 hectares, called *vente de coup* to Cameroonian nationals.

Community forests

Community forests fall within the NPFE and a single unit can cover a maximum of 5000 ha, generally lying along roadsides. These operations demand artisanal timber processing and manual removal of boards from the forest.¹¹ Community forests can incorporate more than one village, and are to be managed and used for the benefit of the associated communities. The aim of community forestry in Cameroon is to include local populations in forest conservation and management while the populations secure benefits that help to improve their standard of living. All products derived from the forest, including timber, NTFPs, wildlife, and fisheries are the sole property of the community. Communities are required to sign a management agreement with the forest administration and to submit a management plan outlining their activities (MINEF 1998). As part of the management plan, agriculture and agroforestry are permitted and enrichment planting is required, though the resources and capacity for enrichment planting are lacking in most areas.

Community forestry is both technically and politically complex, and at times internally divisive. Nonetheless, SNV (Netherlands Development Agency) and associated NGOs have spent considerable time and resources working to build local capacity, and to create an effective implementation “package”. Their efforts have been impressive, particularly in Lomié, where there is a strong network of local and national NGOs capable of guiding and training villages in community forest management. Unfortunately, prior to the period of this study, the establishment of new community forests was suspended by the minister in order to stop logging companies from setting up dummy community forests so as to take advantage of their tax-exempt status.¹²

Despite all the concerted effort, there are only two community forests in full operation with their own materials. In the vicinity of Lomié (The Dja) six community forests were established between 2001 and 2002, but are yet to function independently. In the Campo-Ma’an region there are 30 initiatives at various stages, representing 36% of the total number of villages (Ntonga, Nzooh, and Sonké 2000).

User Rights Outside of Protected Areas

Authorization to exploit timber

Commercial exploitation of timber requires government authorization, the purchase of a license, and payment of various fees and taxes. No villagers are capable of engaging in commercial exploitation since attaining authorization is very expensive.¹³ If timber is cut without authorization for commercial purposes, the chief forest officer can impose sanctions. While some local NGOs believe that this authorization is a mechanism to help protect the forest, those at higher levels recognize that such sanctions provide significant tax revenue for the government.

11. Local populations are concerned with the decree requiring artisanal processing and manual evacuation because people experience extreme difficulty carrying heavy boards on their head over many kilometers through the forest. As a consequence, standards of health in villages are suffering as money made is commonly spent to pay medical fees.

12. Rolf Schinkel, SNV Chef d'Equipe, personal communication, November 20, 2003

13. This is one reason why community forestry was created.

Tree rights

Interestingly, none of the stakeholders in this study mentioned rights to trees. According to van den Berg and Biesbrouck (2000: 46), “All naturally growing trees belong to the state, even on land under cultivation.” However, felling trees within the proper zones is legal for domestic purposes, including building materials and firewood.

Planted trees are recognized as personal property, but the state reserves the right to give “advice” as to their use. According to van den Berg and Biesbrouck (2000: 47), private ownership of planted trees is only recognized on titled land, or “land with visible signs of human presence, such as planted fruit trees.” It is unclear how such a law might actually be implemented, but it could be used to help individuals, communities, and ethnic groups gain land rights.

Traditional user rights

Traditional user rights refer to traditional hunting, fishing, and collecting of NTFPs. According to the conservators of CMNP and The Dja, villagers are allowed to practice traditional subsistence hunting outside of the protected areas. Technically this means that a person can hunt two wild animals (at a time) for his or her own consumption. Five of the villages strongly expressed their feeling that the rules surrounding traditional user rights feel hypocritical and unjust. Their inability to sell bush meat makes it difficult to purchase essential home items like kerosene, soap, and salt. Further, one villager claimed that all hunting is effectively illegal as the official eco-guards¹⁴ are in the habit of confiscating their wild game no matter the intent.

There appears to be a great deal of uncertainty and confusion as to what “traditional” actually means and where these rights extend. Variation in interpretation or intentional misinterpretation of traditional user rights is common, and physical borders are poorly marked. Near Lomié, eco-guards confiscated a large catch from fishermen, telling them “not to kill the fish,” even though the fish were caught through traditional methods outside of the reserve. There also appears to be a contradiction in the fact that guards will confiscate bush meat on the roads, but a vibrant bush meat market can be found each morning in Lomié.

User rights within logging concessions

User rights within logging concessions are very unclear. According to the HFC logging company, people are allowed to hunt and to collect for subsistence purposes, but not to cultivate. Some local NGOs and officials claim that hunting, fishing, collecting NTFPs, and cultivating are allowed, while others only cite a few of these rights. One village around Campo Ma’an believes that they do not have any user rights within the concessions. They are exceedingly frustrated with the logging companies operating in their area, and demonstrations and roadblocks have occurred in Ma’an in the past.

14. *Eco-guards is the local term for park rangers and wardens.*

Markets and Commercialization

Taxation

Cameroon's system of taxation exists at both the municipal and national levels. According to Perez et al. (1999), the *impôt libératoire* is a flat business tax that takes a high percentage of profits from small traders. Municipalities also tax market sellers; this is not, however, the case in Ma'an (CMNP) as the town does not have an official market building. The ministry of finance is pressing the ministry of environment and forests (MINEF) to start taxing marketed forest products. According to MINEF's deputy director of NTFPs, a 10 CFA (approximately \$US .18) per kilo sales tax is imposed on the sale of all NTFPs, but it was difficult to ascertain whether this was a reality in the field. Cocoa is another taxed product. Although buyers are technically required to pay a tax on each kilo purchased, officials in Lomié stated that this is not easily enforced as buyers do not present themselves to officials, but deal directly with the producers. Timber and other products from community forests are the only products that have a tax-exempt status, though this is currently under suspension.

Permits and sale of NTFPs and other forest products

According to MINEF's Deputy Director of NTFPs, permits are required to sell any NTFP. The problem is that most NTFPs have yet to be officially identified and so actual permits do not even exist. In theory, permits help to regulate quality, quantity, collection techniques, and origin of products. According to the chief forest officer at Lomié, these permits are largely unavailable to village harvesters and vendors since a permit can only be obtained from the ministry in Yaounde. Enforcement is inconsistent, but some people do have their products confiscated. The president of the NGO association in Lomié, ROLD, recounted how the bark a man had collected was seized on the road because he did not have a permit.

Though bush meat can be considered an NTFP, it is illegal to sell bush meat and local people are very aware of this fact. The reality, however, is that Lomié has an active bush meat market. Ma'an did not have an obvious bush meat market, but the town also lacks a market building. Anyone with a gun is required to buy a permit, and sport hunters must also purchase a permit for their desired target.

In theory, farmers have the right to sell timber if they planted the tree. In reality, structures are not in place to distinguish the origin of planted versus naturally grown trees, and smallholders would thus still require a license.

Who is facilitating market access?

Three organizations based in Lomié are working to help communities market timber and non-timber forest products, agriculture products, and cash crops. These are:

- CIADD, with support from the Netherlands, is focused on the commercialization of cassava, corn, and plantains. They work to organize farmers into groups, and link

these groups into the larger market chain. CIADD is also working with cocoa farmers on rehabilitating production, marketing, pricing, operating within regulations, and financial management.

- CADEFE's work is aimed at helping women to establish income generating activities through the transformation and sale of NTFPs. In particular they focus on the collection, transformation, and marketing of *moabi* (*Baillonella toxisperma*), *njangsang* (*Ricinodendron heudelotti*), and *okok* or *eru* (*Gnetum africanum*), with particular attention to seasonality and extraction techniques.
- CAFT is working with community forestry cooperatives to produce both timber and non-timber forest products. Though many of the cooperatives are not in full operation, CAFT aims to help the community forests market their products and find a secure position within the market chain.

No organization operating out of Campo or Ma'an has a strong focus on marketing. An Italian organization, CAIPE, used to operate as a buyer within the region, but their services have stopped. Moreover, all three of the villages claim that no organizations are facilitating their access to markets, and using transport vehicles is impossible as transportation is too unreliable. For a time, the mayor of Campo did send a truck to bring people and their products to Campo's Wednesday market, but the truck is broken and the service has ended.

Informal markets

The majority of communities have very limited access to local markets due to a lack of transportation and the distance to towns. As a result, villagers primarily rely upon the informal roadside market to sell their agriculture surplus or NTFPs. Buyers may include the occasional passer-by, or logging company employees who frequently pass in their heavy trucks. Sales can also take place within the village or between villages. For example, in Lomié, Bakas from the village of Payo often sell products to their Bantu neighbors. As another example, the old male leader at the Bagyeli camp near Campo is a healer who provides medicinal cures to neighbors and foreigners alike. The bush meat trade exists on an informal basis due to the fact that commercial sales are illegal. This trade exists within villages (selling cuts of meat), between villages, to local towns, and to logging settlements. Sale of bush meat is the primary income for farmers and hunters. According to one eco-guard, bush meat is also supplemental income for employees of the logging companies and agro-industrial plantations who earn low wages (estimated between \$US 45 and \$US 65 per month).

Local markets

The local markets at Campo and Ma'an are difficult to access from the rural villages. Lomié market as well as markets at the logging company's settlements appears to be a bit more accessible, but the major problems of expensive and irregular transportation and poor roads prohibit many farmers and collectors in both areas from selling their product. For example, villagers claim that the price to travel from villages near Ma'an to the town

of Ebolowa (situated at the crossroads with the paved road) used to be 1000 CFA (approximately \$US 1.80), but today it costs a person 2500 CFA (approximately \$US 4.50) to go one way.

The availability of products at the various markets depends on the season or the past year of forest fruit trees. Markets can also depend on social factors like local tastes or values. For example, *okok* (also called *eru*) is the leaf from an understory forest shrub that has a strong market in Lomié, but not in the neighboring district of Ngoila. According to Perez et al. (1999), local markets make a profit of less than 10 million CFA (approximately \$US 18,000) in half year sales, and tend to sell fewer products that are locally available.

“Buyam-sellam” markets also exist, but they are not well developed for subsistence crops. In this market chain, buyers travel from village to village purchasing certain agricultural or forest products, which they resell in larger regional markets or international markets.

Frontier and national markets

Strong frontier markets exist on the borders of Central African Republic (Kenzou), Gabon (Abang Minko), and Equatorial Guinea (Kye Ossi). The latter lies just across the river from CMNP and is an easy point of exchange. Both Gabon and Equatorial Guinea are in relatively close proximity to CMNP and The Dja. Frontier markets tend to deal in a few products which are in demand in the neighboring country (Perez et al. 1999). Abang Miko, for example, specializes in bush mango and barks. Kye Ossi also specializes in bush mango, and both markets have a strong demand for banana and plantain. Kenzou, meanwhile, is a major source of cola nut for the Central African Republic (ibid.).

Urban markets like Douala and Yaounde sell a wide variety of agricultural products and NTFPs, which tend to come from distant sources. These markets serve as major trade centers to neighboring countries for *safou*, the fruits from *Dacryodes edulis*. In NTFPs alone, half-year sales in these urban markets reach 100 million CFA (\$US 180,000). In comparison, regional markets (including Kribi and Ebolowa) show half year sales from NTFPs that attain 10 million to 100 million CFA (\$US 18,000-180,000), most of which originates from within the region (Perez et al. 1999).

What are people consuming and selling?

Agriculture: The main agricultural products grown in the Lomié, Campo, and Ma'an regions include bananas, plantains, cassava, cocoa, yams, sweet potatoes, corn, ground nuts, okra, and “cucumber” (actually a type of squash). Typically, these agricultural products are grown for consumption but are sold by women when there is a surplus.

NTFP: According to Dkamela (2001), the trade or sale of NTFPs is less economically important than their domestic consumption. However, this may only be the case because markets within the study area are so difficult for farmers and gatherers to access. As Perez et al. (1999) documented, NTFPs represent a very important trade within Cameroon, earning over \$ US 1.9 million in half-year sales from 25 markets.

Within the two study areas, farmers and other respondents generated a list of 20 NTFPs that are primarily consumed at home, compared to 15 products that are sold or traded on either the formal or informal markets. Product prices fluctuate depending on seasons and levels of production, as certain forest trees only produce significant quantities of fruit every two or three years. For example, Payo's bush mango and *moabi* trees did not produce in 2003. At the village level, Bantu women are generally responsible for the collection, transformation, and commercialization of NTFPs. The Bantu collect many of these NTFPs in fallow fields, secondary forests, cultivated plots, and cocoa fields. The Baka and Bagyeli, on the other hand, collect most of their products deep within the primary forests (Dkamela 2001).

Bush meat and fish: Consumption of bush meat and fish for subsistence purposes is legal, but conservationists conclude that the majority is sold illegally. Markets for bush meat and fish appear to respond to two factors: consumers' desire for meat, and sellers' need for a quick source of revenue, particularly surrounding the start of school, marriages, funerals, sickness, and holidays. The markets for meat are likely strongest in areas where there are sawmills. Bush meat is more prominently sold during the rainy seasons, while fish is sold during the dry season. Campo is located on the Atlantic Ocean and has a good supply of salt water fish. Snails are another source of protein to be consumed and sold. The price of bush meat ranges from 1000 to 5000 CFA/kilo (approximately \$US 1.80-9.00).

Cocoa: Market fluctuations and the elimination of state subsidies have made cocoa an unstable cash crop in the CMNP and The Dja regions. During the mid 1980s and early 1990s, the economic crisis and structural adjustment forced many farmers to abandon their cocoa plantation. Prices have since rebounded, but not all farmers have returned to cocoa cultivation due to poor soil types, and/or the presence of logging (Ndoye and Kaimowitz 2001). According to an NGO in Lomié, prices in 2002 hit a high of 1000 CFA/kilo (approximately \$US 1.80), but farmers from Meko'o Mengon still express frustration because they cannot afford the costs of pesticides and as a result their cocoa pods succumb to pod-rot disease.

Timber: At the local level, there is enormous demand for timber. The accessibility of chainsaws, however, has drowned out the local markets for timber from community forests. Access to national and international markets remains stunted because community forest associations have been unwilling to establish a wood seller's cooperative/association that could help to regulate supplies and prices. As a result prices remain lower than expected, and at times it is even difficult to get rid of wood due to an absence of buyers. Dutch wood traders are one group of potential buyers, but the villages with community forests need to do more to attract other options. The top species logged include *sapelli* (*Entandrophragma cylindricum*), *kosipo* (*E. candollei*), *sipo* (*E. utile*), *tali* (*Erythrophloeum suaveolens*), and *assamela* (*Pericopsis elata*).

Where does the money go?

Money earned through the sale of agricultural crops, NTFPs, and bush meat or fish is used to purchase basic household items that include supplies, medical care, and leisure and luxury goods.

Trees of value

Table 1 outlines important multiple use trees of high cultural, subsistence, and commercial value for communities living in the forests surrounding CMNP and The Dja. In order to sustain present and future access to these trees and curb unsustainable harvesting of wild trees, new harvesting practices or domestication – on farm or in community forests – may be necessary. For example, a Tropenbos study on communities and NTFPs in villages near The Dja found *Garcinia lucida* at only one site, and *Cola edulis* at no sites (Dkamela 2001).

Interpretation and implementation of laws

At the national policy level, Cameroon has issued clear regulations guiding rights to and exploitation of forest resources. However, its ability to define, implement, and enforce some of these regulations in the rural peripheries of protected areas is comparably weak. The concept of “traditional user rights” and the areas where they apply are unclear, allowing for considerable confusion, misinterpretation, misapplication, and abuse from both sides.

Legislation guiding taxes and permits for collection and sale of NTFPs does not reflect the market reality in rural protected area landscapes. Whether due to an absence of structure, a lack of information on particular species, or an inability to decentralize the process, regulation of NTFPs is haphazard. This situation creates numerous loopholes or voids which can work to rural collectors’ and vendors’ advantage. On the other hand, people’s rights are considerably weakened when confronted by law enforcement officials with the power to enforce their own perceptions of the law. These perceptions easily benefit the eco-guard or forest official, and are based only upon general legislation that lacks specific and clear directives. In essence, rural economies are caught between framework legislation that lacks implementing guidelines or directives, and enforcement officials whose informal interpretation and selective application of the law carry the deciding weight. Arguably, these informal markets and negotiations create an unpredictable policy terrain that does not directly reflect the official laws and policies.

Micro-zoning is one variable within the policy terrain. According to the Campo Ma’an conservator, administrators on the ground can have a significant impact on how land is actually used through micro-zoning. For instance, logging concessions can be micro-zoned as hunting zones, and portions of the NPFE could be micro-zoned as multiple use zones, thus increasing local rights and opportunities. Micro-zoning for the benefit of rural communities, however, largely depends on the vision and attitude of individual administrators on the ground.

Table 1: Trees of value and use considerations*

Scientific Name	Common Name	Uses	Considerations
<i>Irvingia gabonensis</i>	Bush mango	fruit, kernels	Some say it is deforested near villages and roads because of cultivation.
<i>Baillonella toxisperma</i>	Moabi	oil, fruit, timber	Populations are being reduced from logging and agriculture.
<i>Garcinia kola</i>	Bitá kola	kernel, bark	Mostly consumed locally. Harvesting can include debarking, uprooting, and felling, which may jeopardize sustainable use. It is harvested by many people.
<i>Elaeis guineensis</i>	Oil palm	oil, fruits, wine	Oil from palm nuts is used in cooking. Wine has important cultural significance and a strong local market value. Trees can be felled for wine, though usually not felled until it has stopped producing oil. Harvesting of palm nuts and wine is restricted to the owner of the tree .
<i>Ricinodendron heudelotti</i>	Njansan	fruits	These fruits are used to make soups and sauces, and have a strong market value.
<i>Panda oleosa</i>	Afane	nut	A Bagyeli food.
<i>Onco calamus</i>	Rattan	building material, handcraft	Commonly sold by the Baka to Bantu communities.
<i>Pausinystalia johimbe</i>	Yohimbe	bark	Local viagra, strong commercial demand which may threaten sustainable use due to excessive debarking.
<i>Dacryodes edulis</i>	Safou	fruit	Eaten boiled and high in protein. It is not plentiful in the area.

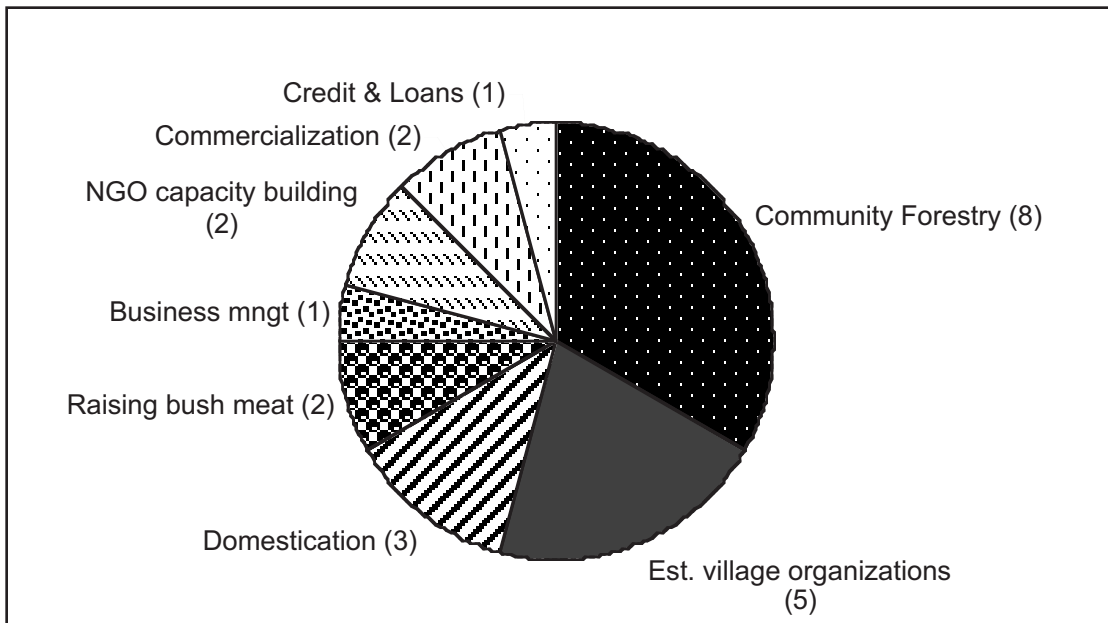
*This table combines data gathered through interviews with villages, NGOs, and government officials. It also includes information from Dkamela's (2001) published results on the role of community-based institutions in NTFP in villages in or near The Dja Biosphere Reserve.

Institutional Policy Terrain

Technology

Local and national NGOs' capacity to offer a wide range of services and technologies is quite impressive and could serve as a valuable resource for outside NGOs seeking partnerships. Seventeen NGOs and government civil servants who engage in conservation and/or development activities near Lomié, Campo, and Ma'an were interviewed. Of these institutions, fifteen organizations claim to offer specific agroforestry, social, and market-oriented technologies as indicated in chart 1. Though most engage in multiple activities, the majority of organizations and officials are engaged in community forestry, followed by the formation of village groups, associations, and cooperatives. Two organizations and one forestry official (unconfirmed) launched tree domestication and nursery

Chart 1: Dominant NGO Technologies & Number of NGOs involved



efforts near The Dja, but both of the organizations' projects lost funding and cannot be considered successful.¹⁵

Table 2 outlines those organizations working in each region and their respective technologies. The greatest diversity of technologies is available in Lomié, compared to Campo and Ma'an, as Lomié is home to the majority of organizations encountered in this study. Most of these organizations are locally based or have a national affiliation. These local NGOs maintain the closest contact with communities compared to the international NGOs, park projects, or government offices.

Village Perceptions of Technologies Offered

Village perceptions indicate that a total of nine NGOs have actually worked or conducted activities in the interviewed villages. On average, each village has worked with two different organizations. The Bagyeli settlement near CMNP stands out as the only community that has not had any contact with organizations. Overall, the work focused on providing natural resource and development technologies. Of these nine organizations, people pointed out that two (IUCN and SNV) are no longer active on the ground but continue to maintain supporting roles focusing on influencing policy (IUCN) and providing capacity-building support (SNV) to local NGOs.¹⁶ Respondents did not mention any government officials who claim to be engaged in dissemination of technologies, nor did they mention WWF or ECOFAC, the projects respectively managing CMNP and The Dja. In WWF's case, this is probably because they have yet to focus on local (village) actors. As for ECOFAC, numerous informants, including the director of ECOFAC, stated that people feel strong disdain towards their efforts, particularly their anti-poaching activities.

15. Though not counted in this report, many of the organizations are also engaged in conservation and development activities that include information sharing, advocacy, monitoring, sensitizing, socio-economic studies, preserving local culture, protected area management, environmental education, controlling NTFPs, and wildlife research.

16. IUCN's project funding ended, while SNV shifted to an advisory and support role for implementing NGOs.

Table 2: Technologies according to region and organization

Technologies	The Dja Biosphere Reserve Organizations & Purpose	Campo Ma'an National Park Organizations & Purpose	Operating/advising at both sites
Community forestry	ECOFAC - reduced pressure on Dja OCBB - let people conserve own forests CEFDja - build forestry capacity CAFT- support sustainable development	Conservator - let people decide what they will do with their forests CEPFILD - support sustainable Natural Resource Management SAGGED - support sustainable natural resource management	SNV - reduce pressure on the reserve and provide timber
Establishing village organizations & associations	OCBB - increase attention to development activities in villages CAFT- raise understanding of cooperatives in villages <i>Pre Vert</i> - NTFP management	CEPFILD - support community enterprise SAGGED - support for cooperative production and marketing of products	
Domestication & agroforestry	ECOFAC - support income diversification IUCN - conserve biodiversity Conservator - provides alternatives to hunting		
Domestication of bush meat	ECOFAC - alternative income and protein	CEPFILD - community enterprise	
NGO capacity building	ECOFAC		SNV - increase villages' access to community forestry.
Commercialization	CIADD - income generation through agriculture and cocoa production		
Credit-loans-savings	CADEFE - improve income through sale of NTFPs		
Business management	GECEC - meet local needs, support cooperatives		SNV - support necessary skills

Bold indicates that the project or organization is no longer providing that technology on the ground. SNV represents a special case as they have shifted their focus from project management to an advisory role by supporting local and national organizations to carry out community forestry work.

According to the communities interviewed (table 3), four villages are engaged in community forestry. Two villages have received guidance on forming groups and associations, and in one case the main focus was on creating agricultural cooperatives. Pohem Poum I and Pohem Poum II (technically one village) participated in a domestication/nursery project, however the project has ended. Another village was targeted with a bush meat domestication project that has also ended. One Baka community is receiving support on strengthening their rights. Finally, one village said that they

have received micro-finance support. No villages, however, claimed to be working with an organization on commercialization or marketing of agricultural or forest products.

Case study of domestication and nursery efforts

ECOFAC

During its first two phases, ECOFAC set up a “multiplication station for agro-forestry trees” in the town of Somolomo, situated in the north of The Dja Reserve. The aim was to provide an alternative to hunting through commercialization of tree products including *safou*, guava, coffee, cocoa, oranges, oil palm, and *moabi*. According to the conservator for Dja-East and the ECOFAC director, the project primarily focused on oil palms. The project produced the seedlings and sold them for 400 CFA (approximately \$US 80) to the surrounding community. Informants claim that the project was a failure due to poor management; the conservator’s explanation, however, was that people were not very interested in planting trees to make money as they already had a rich forest and could gain an income from hunting. Success was also blocked by a lack of organization at the local level and an incapacity to buy products or do the necessary work. These “agroforestry” activities were stopped during the third phase of the ECOFAC project.

Reflecting on this project’s efforts, the conservator advised that any new endeavor would need to pay close attention to the plants that the community will accept, and to make sure that people truly understood the project and participated in the decision-making. He also stressed that people must understand that development cannot primarily depend upon revenue from hunting.

IUCN

IUCN set up two pilot nurseries in Lomié.¹⁷ The first was located in the town of Lomié. Remnants of the abandoned plot indicate that they were selling *safou* (*Dacryodes edulus*) and exotic fruits like mandarin, mango, and avocado seedlings. One man had been paid to run the nursery, but when funding was cut he stopped.

The second nursery was run in collaboration with the local NGO named PERAD. This “demonstration” nursery was located in a rural village and sought to bring trees of value to the whole region. The project identified the five most important species and sold them to the local populations for 1000 CFA (\$US 1.80) per seedling; they discovered, however, that their priorities were not the same as the local population, and the project ultimately lost funding. A tour of the abandoned nursery found *moabi*, oil palm, mango, *yohimbe*, *njangsang*, plantains, *Afrostryax lepidophyllus*, and *calliandra* (*Calliandra calothyrsus*, a nitrogen-fixing plant growing amongst the *moabi* as “fertilizer”).

The nursery was located on the edge of Pohem Poum I, a Baka village aligned with the Bantu *cheferie*¹⁸ of Pohem Poum II. Only one man from PPI was trained in domestication techniques and nursery management. The others provided paid labor (watering, weeding, and transplanting wildlings to the nursery) when many hands were needed. Despite the fact that the project offered PPI oil palm seedlings to plant on a piece of land,

17. IUCN received their domestication training from ICRAF.

18. A *cheferie* is the domain over which a chief rules.

Table 3: Villagers' perceptions of organizations that work in their village & which technologies and services they offer.

Organization	Services	Near The Dja				Near CMNP		
		Djebe	PP1	Payo	PPII	Meko	Bagyeli	Doum
*IUCN	Raising bush meat	x						
	Nursery		x		x			
	Forming co-ops/associations			x				
*SNV	Community forestry	x						
CIAD	Community forestry	x			x			
	Establishing people's rights			x				
GECEC	Microfinance	x						
Agrie	Community forestry				x			
	Establishing people's rights			x				
CEPFILD	Community forestry					x		
GIC	Forming coops/associations					x		
STD	Community forestry							x
AAPEC	Establishing people's rights			x				
None							x	

* Organization is no longer operating in the area.

the villagers refused and express no interest in reviving the nursery, especially since they cannot afford the necessary inputs like fertilizer and pesticide.

Although initial tree domestication and nursery efforts were unsuccessful, this is not necessarily a reflection of the actual value of the technology in the regions. Rather, is likely a result of the objectives of the projects, and extension and dissemination methods. In fact, agroforestry and tree domestication could be quite useful within the context of community forests, in cocoa plantations, or even on farm for the production of agroforestry tree products.

Extension Trends

Who are extension efforts targeting?

Most extension and dissemination efforts target either the entire village or select groups. A handful have specifically focused on women, but the trend appears to be shifting to “mixed” groups as gender divisions have not always worked well. Two of the organizations interviewed are working with pygmy communities, while a third organization has stopped such programs because of inadequate funding.

How is extension and dissemination structured?

Community forestry has had a strong influence on the formation of numerous local and national NGOs with well-trained extension officers and animators. Initial contact and information is generally shared through community leaders or at village-wide meetings. More focused and technical information is taught at trainings, site visits, workshops, and seminars that target community representatives and group leaders.

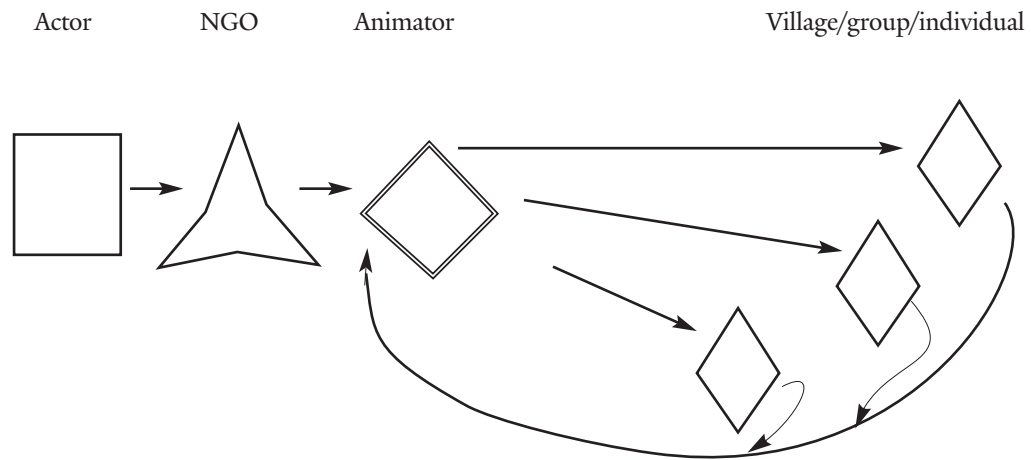
According to the villagers, NGOs transfer information through two primary methods: trainings and meetings. Information is usually provided by someone working with the NGO, although members of the community can also participate in teaching. As meetings and trainings do not always focus on the entire group or community, village representatives are often required to relay information back to the rest of the village.

Centralized extension and dissemination

Centralized extension is the most common form amongst organizations and actors operating around CMNP and The Dja. In this system, services and information originate from an organization’s central office and move outward through a chain of social links to the target population (see figure 1). The centralized system that we found in this region of Cameroon is interesting because in a number of instances international organizations are disseminating through locally based NGOs, making these local organizations the first link in the chain. However, an outside initiating actor is not always present. Instead, the initiating actor can be a community or group who contact the local NGO and request their services.

The second link is an animator who relays information to the entire village, to a group, or to particular individuals, and perhaps to all three during different phases of dissemination. For example, villagers from Meko explained that their local bureau on community forestry is responsible for diffusing information to the rest of the village. On the other hand, an organization located in Ma’an stated that using local intermediaries to transfer information to the rest of the group or village was not an effective structure. This organization preferred to actually conduct their work in the village where everyone concerned had access to the information. Sometimes the animator actually lives in the village. Funding is limited for local or national NGOs, which means that organizations cannot entirely dictate the problems they wish to address or programs they want to implement, but often have to wait for either the community or an outside organization to contract their services.

Figure 1: A stylized depiction of centralized dissemination model



Decentralized extension and dissemination

In a decentralized dissemination system, information and examples of the technologies are held at field-based centers or demonstration sites. Groups, group representatives, or community representatives converge on these field sites for trainings, exchange visits, or workshops where they are instructed by field officers, animators, or other groups (see figure 2).

As with the previous structure, one real challenge is obtaining transportation and/or funding to visit the village, or bring people to the site. An important misconception found near The Dja is that simply constructing a nursery site facilitates the spread and adoption of technology, when in fact much more is actually needed.

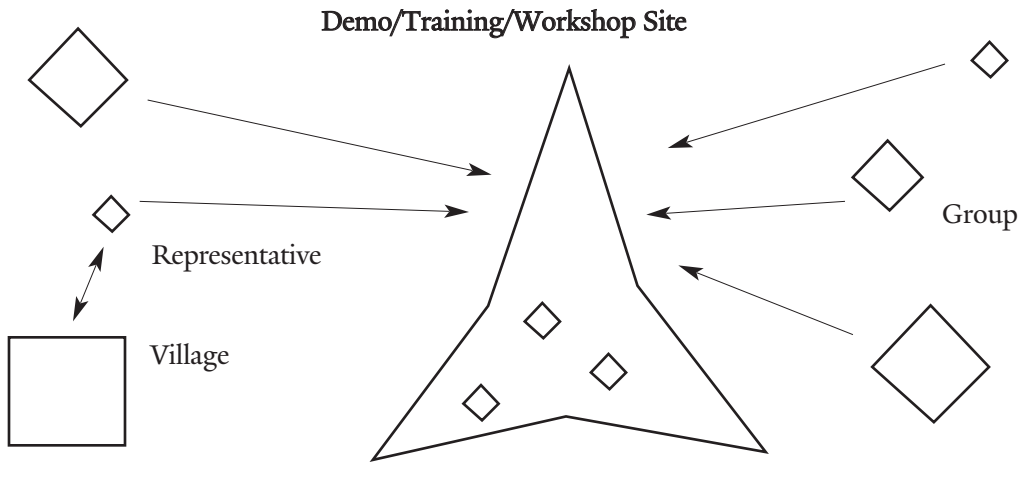
Community-initiated dissemination

In community-initiated dissemination, communities themselves look for opportunities and information that can strengthen their efforts, typically in community forestry. CAFT is one example of this system in Lomie (The Dja) in which representatives from nine communities meet together four times a year. The meeting site rotates between all of the villages. External organizations like NGOs may also participate to provide advice, support, or resources (see figure 3). This form of seeking out and adopting technologies or options is relatively rare. In fact, CAFT was the only example of this structure found in the whole study, but it appears to hold potential as a successful and sustainable model for obtaining and disseminating information and technologies.

How effective are extension and dissemination methods?

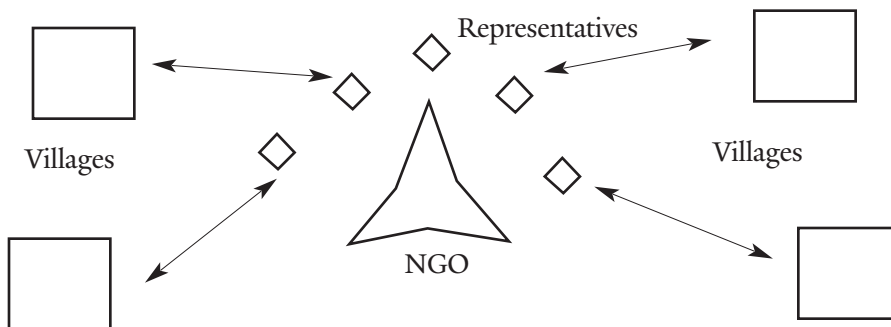
According to villagers from two communities, the information that organizations share is generally easy to understand. One of the challenges to actual adoption however,

Figure 2: A stylized depiction of the decentralized dissemination model



rests on the reliance on formal groups. According to villagers and organizations alike, such groups are not often organically formed within communities, and do not always function well. In fact, until the early to mid 1990s, cooperatives and associations were illegal. Before that time, the only village associations permitted were those connected to the state for production of cash crops, or those that operated informally as communal money saving and credit mechanisms called *Njangi*. The pan-Cameroonian drive to organize “Groupe d’Initiative de la Commune” (GIC or Community Initiative Group) has met with mixed results. According to villagers from Payo (The Dja), the group focus is not entirely sustainable because not everyone is interested in participating. In their village, groups of five to six people are the most successful size, especially since the NGO they were working with has left now due to lack of funding. In Doum, near CMNP, questions to individuals suggested that no one considered him or herself to be part of a group. One female had participated in a group, but she decided to stop. Another man expressed that he works as “an individual.” However, the village interview eventually

Figure 3: A stylized depiction of the community-initiated dissemination model



revealed that Doum has a GIC of which everyone is a member. This highlights the fact that even if groups exist on paper they may not function in day-to-day efforts, and people do not necessarily identify themselves with the association.

It appears that successful extension and dissemination can best be judged by actual adoption and sustainable use of technologies. Community forestry is only in its early and middle phases in most villages, but it appears that extension and dissemination efforts are making good progress in this realm. The reasons are clear: villages are highly motivated by the promise of large financial returns from the sale of timber, and organizations and animators are well trained and equipped to disseminate the information. Conversely, this may explain why other efforts have met with either mixed results (forming groups or cooperatives), or relative failure (agroforestry tree nurseries using domestication technology), as commitment and engagement at both village and individual levels are weak or lacking. Specific bottlenecks to extension include:

- Weakened extension links due to insecure funding or lack of transportation. This is a particular problem for the NGOs operating out of Ma'an.
- Dependence on representatives to share information which can easily dilute the quality of the information.
- Targeting of groups which are not stable or self-committed.
- Premature withdrawal of NGO support.
- Poor understanding of local priorities and assumptions that people will adopt a technology just because it is promising.

Forest and Human Ecosystems

National Parks and Reserves

One of Cameroon's youngest protected areas, Campo Ma'an National Park (CMNP) was established in the late 1990s as compensation for environmental damage resulting from Exxon's 1000 km Chad-Cameroon pipeline.¹⁹ The park covers well over 260,000 ha of Atlantic coast and dense humid tropical forest ecosystems in the lower altitude zones, as well as Guinea Congolian forests. CMNP houses a high diversity of flora and fauna, including 1500 plant species, 45 of which are endemic (Ntonga, Nzooh, and Sonké 2000).

CMNP is surrounded by logging concessions with 30-year leases, an agro-industrial oil palm plantation (Socapalm), a rubber plantation (Hevecam), and agricultural and forest dwelling communities. In 2000, the logging company HFC constructed a controversial road through the park to facilitate transportation of logs from their concession east of the park to their sawmill in Campo Town. The road, however, is not open to the public and requires permission to pass from park officials.²⁰

CMNP and the surrounding landscape are now zoned as a national park, logging concessions, agro-industrial zones, and agroforestry/habitation zones. The agroforestry zones are the only areas that remain accessible for local communities to inhabit and cultivate.

19. Djogo Tounouksala, Conservator CMNP, personal communication, December 2003.

20. *Ibid.*

The Dja Biosphere Reserve is the largest reserve in Cameroon and is situated in both the eastern and southern provinces. Established in 1950, it covers over 590,000 ha of Atlantic, semi-deciduous, and evergreen dense humid forests, and houses a rich diversity of fauna including 109 mammal species, 360 bird species, and 62 fish species (Williamson and Usongo 1995). In 1981 The Dja was gazetted a Biosphere Reserve and in 1987 a World Heritage Site. Presently, collaborators are working to establish corridors to link The Dja with Odzala National Park in the Democratic Republic of Congo and Minkebe National Park in Gabon in a transboundary biodiversity conservation initiative.

Human Ecosystem

The landscapes surrounding both CMNP and The Dja have very low population densities. Along the periphery of The Dja there are under 5 persons/km² (Dkamela 2001). The dominant populations in both landscapes are of Bantu origin. Around The Dja they are the Bulu, Badjoue, Fang, and Nzime ethnic groups. Near CMNP they are the Bulu, Ngoumba, Fang, and Bassa ethnic groups. Primarily agriculturists, the Bantu practice shifting cultivation with fallow systems in which primary or old secondary forests are cut and burned to plant maize, groundnuts, cassava, coco-yam,²¹ plantain, banana, and a variety of squash (also called cucumber and melon). After the harvest these fields are left to regenerate over a period of many years. There are two planting seasons per year, which fall just before the biannual rains in November/December and April. Cocoa is the principle cash crops in both regions, though production has fluctuated over the years. Many people earn more here from bush meat trading than from selling cocoa. Some men around The Dja also engage in coffee production. Women tend to gain their income from the sale of food crops or NTFPs at local markets or on the roadside. These communities also rely strongly upon NTFPs for food, materials, and medicine (Dkamela 2001; van de Berg and Biesbrouck 2000).

Pygmies, as they are commonly called, are the minority ethnic group in both protected area landscapes. Around CMNP the pygmy populations are the Bagyeli or Bakola, while in The Dja they are the Baka and Kaka. These forest dwelling, semi-nomadic communities rely upon the forest for their livelihood. Their camps tend to fall under the administrative jurisdiction of Bantu village chiefs, and most pygmy groups share alliances with Bantu communities through intermarriage and the exchange of labor, bush meat, honey, and palm wine for cultivated crops, clothing, and money. Bagyeli families typically cultivate only one small field per year, though this varies between areas. While the Bantus collect NTFPs from secondary forests or fallow fields, Bagyeli and Baka collection occurs exclusively in the primary forest. Their diets include bush meat, mushrooms, snails, fish, and fruits (Dkamela 2001; van de Berg and Biesbrouck 2000).

Though a handful of NGOs are working to aid and support the Bagyeli and Bakas, these communities have a difficult time as their access to the forest is diminishing with the expansion of logging concessions and protected areas. The Bagyeli and Bakas also experience discrimination, partly as a result of their increasing adoption of more sedentary, agrarian lifestyles.

21. *Coco-yam* (*Xanthosoma sagittifolium*) is a type of yam frequently found growing in cocoa farms.

Livelihoods and Marginalized Groups

Cameroon's environmental policies clearly prioritize the sustainable extraction of natural resources (logging concessions) and biodiversity conservation (protected areas) over rural livelihoods. The ground level presents a rough and uncertain policy terrain that forces people to maneuver and negotiate the variable and selective interpretations and applications of the laws. But despite these challenges, local capacities and opportunities have increased from legislation promoting the creation of NGOs, groups, cooperatives, and associations. As a result, rural people in the humid forest zone do have access to an impressive wealth of social and organizational resources, particularly in Lomié.

Nonetheless, Cameroon's policies have created a situation in which customary tenure and local land use rights are entirely ignored, and the establishment of legal rights is practically inaccessible for the average farmer or hunter. As a result, local communities have lost access to vast tracks of land and to critical NTFPs. Laws, of course, cannot completely prevent people from cultivating, hunting, or collecting within protected areas or concessions, but they do greatly increase the risks involved and heighten livelihood instability and economic insecurity. It is also clear that Bantu communities are generally better equipped to maneuver within this policy terrain as compared to Baka and Bagyeli communities, who lack the voice or power to defend their rights.

Village assessments of livelihood

Changes in the way a country uses and manages its natural resources can have profound effects, both positive and negative, on local livelihoods. Livelihood does not measure standard of living. Rather, a livelihood assessment aims to understand how people make a living and support their family, and seeks to identify how people view their present situation compared to the recent past, according to their own livelihood categories. This study asked local communities to assess their livelihood conditions on their own terms.

The five villages that did this assessment judged their livelihood based on five value categories, and accordingly determined that their situation has either improved, not improved, or become worse. The value categories that emerged were as follows:

- **Development resources:** The arrival of development resources was directly linked to two villages viewing their livelihood situation as improving. Three of the villages hope to receive development resources as a future priority. Such resources include electricity, improved roads, potable water, schools, and health centers.
- **Economic resources:** The loss of their past economic activities contributed to the Bagyeli viewing their situation as getting worse, and another village seeing no improvement. Nearly all of the villages seek new economic opportunities to help counter losses from market swings, new protected areas, or other causes.
- **Natural resources:** Loss of natural resources was associated with all of the villages that viewed their situation as either not improving or getting worse.

- Rights: A lack of rights was cited by the minority Bagyeli and Baka communities as, respectively, contributing to the demise of their welfare or reduce hope for future empowerment.
- Culture: Loss of culture was cited as a concern by the sole village that sees itself as worse off.

Half of the villages interviewed view their situation as not improving or getting worse because they have lost access to all or a combination of economic and natural resources, rights, and cultural integrity. Those who see their situation as improving do so because of the recent arrival of development resources like water pumps, schools, and money from external institutions. All of the villages would like to see more in the way of development and economic resources.

Payo and Pohem Poup II (The Dja) feel that their livelihoods have at least slightly improved and that the village is progressing due to an influx of development and economic resources. In Payo, an NGO helped them to build a school, and they used money from the logging company to bring a water pump into the village. Pohem Poup II received money from the logging company that they invested into establishing a community forest.

Doum and Meko'o Mengon (CMNP) feel that their welfare has not improved because they have lost access to natural resources and economic resources. Doum feels a large contradiction between their previous access to the forest and its resources, and the current zoning of logging concessions and the national park. Villagers from Doum are extremely hopeful that their community forest will serve as a new means of economic resources. Meko'o Mengon lost access to critical economic resources when cocoa prices dropped and state subsidies were removed, and they also recently lost access to their forest resources from the logging concessions and the national park.

The family at the Bagyeli settlement (CMNP) feel that they live poorly for four main reasons. They lost legal right to their forests, are losing their culture, lost access to natural resources, and have subsequently lost their economic resources. These Bagyeli are blocked by zoning that includes logging concessions, the national park and the agro-forestry/habitation zones designated for the Bantu villages. Without their customary land rights, these Bagyeli are losing the basis of their culture as forest people who are not necessarily comfortable or satisfied adopting a sedentary, agrarian lifestyle. The new zoning also means that they have lost access to the forest resources that provided subsistence and economic resources. According to the Bagyeli grandfather who spoke for this group in its interview, "for the pygmy his life is meat, now we are like sheep eating grass."

What do people want?:

- The Baka from Payo desire to secure their legal rights to land and to continue to improve their economic opportunities through the commercialization of agriculture products.
- Pohem Poup II hopes that community forestry will provide economic resources.

- Doum wants to see an increase in development resources in the form of electricity, paved roads, and potable water. They would also appreciate improved job security for their children working for the various logging companies, as current wages are low (\$US 45-65/month) and the risks of injury or death are quite high.
- Meko'o Mengon desires development resources in the form of electricity and improved roads, which would enable transporters and potential buyers to more easily access their village. They also seek new economic opportunities.
- Finally, while Djebe villagers did not assess their current livelihood situation, they did express their need for development resources in the form of potable water, schools, and health centers.

Minorities

The livelihood challenges facing the Baka and Bagyeli communities are extreme; without strong advocates and support, their communities will fall on very hard times. The three minority villages currently fall along a spectrum from doing very poorly with no rights or legitimate resources, to pushing forward and making strides within the current policy environment.

The critical differences that place pygmy populations at a disadvantage relative to the Bantu are their traditional nomadic movements, comparatively vague (to outside observers) customary land tenure, absence of agriculture (which leaves a distinct claim on the land), and history of living under the administrative domain of other ethnic groups. These conditions add up to a situation where some Baka and Bagyeli have completely lost their natural and economic resources and access to the forests that were once their home and livelihood. Moreover, their condition has been largely overlooked or ignored due to a cultural racism against the Baka's and Bagyeli's traditional way of life. This prejudice is compounded within the protected area landscape because it is widely viewed that the pygmy lifestyle of hunting and gathering is incompatible with conservation of national parks and reserves, and is a direct threat to wildlife.

This view has been contested by educated Bakas who defend a strong conservation ethic within their culture (IUCN 2001). This ethic emerged in the present study through examples and stories. Sn old msn from the Bagyeli settlement explained that he will follow the growth and progression of a tree, checking on it time and again as he moves within the forest, until it is capable of producing fruit, nuts, or another resource. These communities not only nurture trees in the forest, but plant trees as well. For example, villagers from PPI had planted avocado trees behind their houses and fertilized them with kitchen compost.

Payo and other Baka villages near The Dja appear to have a more secure existence than the Bagyeli settlement near CMNP. The difference is likely linked to the various communities' support system and access to resources. The Bagyeli have no outside organizations providing support or defending their rights, whereas Payo has had significant assistance and is currently fighting to obtain equal footing with their neighboring Bantu. It is interesting that Payo was one of only two villages that saw its situation as improving.²²

22. There are a handful of organizations working to support these communities and fight for their rights. Near CMNP they include RAFCOM in Akom II, Societe d'appui aux initiatives locales de developpement/autopromotion des pygmees dans leur environnement (SAILD/APE), and nuns from the Catholic Mission. Near The Dja the organizations include Association des Baka de Lomie (ASBAL) and CEDEBABIK near Bipindi.

For neither good nor bad, these pygmy populations are at a challenging crossroad where they must choose whether to struggle to maintain their old lifestyle within an entirely new political and environmental landscape, or to adopt new livelihood strategies and mix the past with the present and future. The first priority is clearly to obtain citizenship and land-use rights, as well as improved access to health care and education. However, introduction of agroforestry technologies could play a key role in helping to reinforce certain land rights – perhaps through tree planting – or in obtaining new sources of income through the collection and marketing of NTFPs.

Agroforestry and Landscape Conservation Opportunities

The policy terrain within the protected area landscapes of Campo Ma'an National Park and The Dja Reserve creates a strong demand for a landscape conservation strategy that would employ agroforestry both to meet the livelihood needs of the rural population and to conserve forest species through their use in farming systems and managed forests. The reasons for this demand are five-fold:

- Zoning of protected areas, logging concessions, and agro-industrial plantations has significantly limited farmers' and nomadic forest dwellers' access to land and resources.
- The government's plan to double the size of the PFE for conservation will only increase the number of peripheral areas and affected communities, which in turn will likely force more concentrated land-use strategies and perhaps create a demand for alternative land-use systems.
- There is an increasing scarcity of valued forest species due to unsustainable use and complex regeneration processes. For example, *moabi* is highly valued for its timber and NTFPs, but its natural regeneration depends on large mammals like elephants.
- People's income generating activities are threatened because the sale of bush meat, which was an immediate and important source of money, is now illegal.
- Production of cash crops is risky and expensive, not everyone in the population produces cocoa or coffee, and the money earned is concentrated at one time of year. Therefore, there is room to explore regional and national NTFP markets that can diversify sources of income.

Further, Cameroon's policy terrain presents a number of key opportunities to use agroforestry, particularly tree domestication, as a landscape conservation and livelihood strategy. These are:

- The 1994 Forestry Law and 1995 Forest Policy prioritize improving livelihoods through community participation in forest conservation and management.
- While community forests primarily focus on timber, the original intent was to include agroforestry, agriculture, and NTFPs. In addition, community forests have a replanting requirement that could be partially met through agroforestry technologies.

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- Though the specifics are somewhat unclear, planted trees are viewed as individual property and thus could help strengthen local rights to land and resources. This is an area that would require further research before initiatives are launched.
- The flexibility and openness of the law creates an opportunity to micro-zone already designated areas to local people's benefit. For example, NTFP "buffer zones" could be established within protected areas, permitting traditional collection and management.
- Domesticating indigenous species could promote and facilitate a more efficient and accessible process of issuing permits to harvest and sell NTFPs.

Agroforestry and tree domestication clearly have a role to play in these humid forest landscapes, be it on individual farms, in community forests, or within specifically micro-zoned areas of the dominant forest zoning. Already, an impressive network of NGOs is in place to help facilitate such a process and serve as local resources to the communities. Further, conservation groups involved in the management of the protected areas appear willing and well poised to usher in such initiatives.

However, organizations must acknowledge the complexities of the ground level policy terrain, which presents a nexus of national policies that clearly favor the state and corporate bodies, laws that lack specific implementation guidelines or are inconsistently applied on the ground, and customary land rights and relationships with the forest that conflict with legislation. Consequently, environmental organizations operating within protected area landscapes must be willing to advocate for changes or clarification in national policies and ground level implementation. They must also be willing to support communities and groups in establishing, justifying, or increasing their access and rights to resources and markets. Finally, it is advisable that organizations proceed cautiously as tree planting and agroforestry interventions could create unexpected outcomes (Schroeder 1997), especially if the resources gain value or cause cultural or political tensions.

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APPENDIX 1: Acronyms used in text

ASBAL	Association des Baka de Lomie
CADEFE	Centre d'Appui au Développement de la Femme
CAFT	Cooperative Agro Forestier de la Trinationale
CARPE	Central African Regional Program for the Environment
CE	Centre pour Environnement et le Développement
CODEBABIK	Comité du Développement de Baka Bagelli de Kribi
CEFDja	Centre d'Etude Forestier de Dja
CEPFILD	Cercle de Promotion des Forêts et des Initiatives Locales de Développement
CIADD	Centre International d'Appui au Développement Durable
CMNP	Campo Ma'an National Park
ECOFAF	Conservation et Utilisation Rationnelle des Ecosystèmes Forestiers d'Afrique Centrale
GECEC	La Generale d'Epargne et de Credit de l'Est Cameroun
GIC	Groupe d'Initiative de la Commune
ICRAF	World Agroforestry Centre
ICDP	Integrated Conservation and Development Project
IUCN	World Conservation Union
MINEF	Ministry of Environment and Forests
NGO	Non-Governmental Organization
NPFE	Non-Permanent Forest Estate
NTFP	Non-Timber Forest Product
OCBB	Observatoire des Cultures Baka et Bantu pour l'Education, l'Environnement et le Développement Communautaire
PERAD	Environmental Protection, Research and Support to Sustainable Development
PFE	Permanent Forest Estate
PPI	Pohem Poum I
PPII	Pohem Poum II
RAFCOM	Royal Air Force Community Support
ROLD	Reseau des ONG et Associations Locales du Dja
SAGED	Structure d'Appui a la Gestion de l'Environnement et le Développement
SNV	Netherlands Development Agency
SAILD/APE	Societe d'Appui aux Initiatives Locales de Développement / Autopromotion des Pygmees dans leur Environnement
UTO	Unite Technique Operationel
WWF	World Wide Fund for Nature

APPENDIX II: Description of Institutions Operating in Campo, Ma'an, and Lomié

National / Multiple Site Affiliation

Ministry of Environment and Forests - Direction of Non-Timber Forest Products (MINEF-NTFP)

- Oversees all aspects of NTFP use and transformation in Cameroon
 - Initiating a new project with FAO which focuses on institutional support for and sustainable management of NTFPs in Cameroon.

World Wide Fund for Nature (WWF)

- Among other objectives, WWF is providing policy analysis and support on conservation and the sustainable use of natural resources.

Netherlands Development Agency (SNV)

- Their general focus is on gender, health, minorities, and sustainable development.
 - SNV was executing projects, but have now shifted to advising and providing capacity building for intermediary organizations.
 - They have worked in Lomié, as well as Campo and Ma'an, on community forests, and continue to support the organizations that are carrying on their work.

Central African Regional Program for the Environment (CARPE)

- A long term initiative by USAID to address the issues of deforestation and biodiversity loss in the Congo Basin Forest zone.
 - CARPE works in nine basin countries including Cameroon.

Campo Ma'an National Park

Ministry of Environment and Forests (MINEF)

- Charged with the management and conservation of the park.
 - The conservator is responsible for the park, the wildlife, and hunting in peripheral areas. He also engages in educating people about the park and its management.

World Wide Fund for Nature (WWF)

- Their goal is to contribute to the conservation of the Atlantic Coast forest ecoregion through the protection of Campo Ma'an National Park.
 - The project aims to facilitate protection of the park's biodiversity through regional land planning and sustainable use of the forest and faunal resources.
 - They are currently focusing on the management of the peripheral zones, which includes community forestry, logging concessions, and agro-industry. Shortly, they

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will start to focus more on livelihoods through a project aimed at ecotourism, wood production, and village enrichment through agriculture.

Cercle de Promotion des Fôrets et des Initiatives Locales de Développement (CEPFILD)

- The primary goal is to contribute to local development through sustainable natural resource management.
- They encourage local communities to unite in order to fight against poverty through optimal use of their resources, and support local communities in the sustainable management of their natural resources.
- They focus on community forestry, environmental education, village land management, and enterprise development.

Structure d'Appui à la Gestion de l'Environnement et le Développement (SAGED)

- The main goals are to fight against poverty and improve local standards of living by promoting sustainable natural resource management.
- Activities revolve around community forests, agriculture, raising wild game, pisciculture, and HIV/AIDS.

The Dja Reserve

Ministry of Environment and Forests (MINEF)

- This ministry is charged with conservation of Dja-East, as well as the upkeep of rural infrastructure, and the maintenance of relations with local communities through education, sensitization, and development projects.

Programme Regional de Conservation et d'Utilisation Rationnelle des Ecosystème Forestiers d'Afrique Centrale (ECOFAC)

- This program guarantee a sustainable conservation system for The Dja Biosphere Reserve by integrating local populations and actors in the sustainable management of their lands, which border the reserve, and assuring local benefits.
- The global objective is to reduce pressure on the reserve's natural resources by reducing poaching within the reserve. This can be achieved by providing local populations access to and options for alternative livelihood activities.

World Conservation Union (IUCN)

- IUCN's conservation project lasted from 1995-1999. The main objective was to support conservation by integrating the reserve into a regional context, and by supporting natural resource management.
- Specifically they were focused on helping local populations know their rights and responsibilities in natural resource management, providing education, and offering training. They also look at the economic value of regulated hunting and initiated an agroforestry project.

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Observatoire des Cultures Baka and Bantu pour l'Education, l'Environnement et le Développement Communautaire (OCBB)

- To adapt and use the cultural aspects of the Bantu and the Baka for community development.
- Their focus is on environmental education, sustainable natural resource management, cultural promotion, and community development. As such they have worked to implement community forests, conduct socio-economic studies for other conservation projects, establish a cultural heritage art museum, and help to organize village associations.

Centre pour l'Environnement et le Développement (CED)

- Their main goals are to improve the participation of the local populations in forest management and to contribute to the fight against poverty.
- Activities focus on informing people about laws that pertain to community forestry and protected areas. They are also engaged in advocacy for pygmy populations with regard to land rights.

Cooperative Agro Forestiere de la Trinationale (CAFT)

- CAFT's focus is on the valuation of natural resources for local communities. It is working within the "TriNational Project" that will link four protected areas, including The Dja (Cameroon), Minikebe (Cameroon), Odzala (Congo), and Nki (Cameroon).
- Principle activity is establishing community forest management committees.

Centre d'Appui au Développement de la Femme (CADEFE)

- The primary goal is to support women through development initiatives.
- Main objectives include reducing poverty, improving women's economic opportunities and valorizing NTFPs, and disseminating information to women on health issues that include AIDS, family planning, and domestic violence.

La Generale d'Epargne et de Credit de l'Est Cameroun (GECEC)

- GECEC objectives are to enhance the culture of cooperatives and establish financial mechanisms which are adapted to the needs of communities.
- Activities focus on stimulating local populations to take advantage of loans and credit, and to help them safeguard their funds.

Centre d'Etude Forestier de Dja (CEFDja)

- CEFDja's primary objective is to increase the technical capacity of villagers in forestry.
- Activities focus on the installation of community forests and creation of management plans.

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- Protect the environment by preventing environmental degradation and promoting development activities of low environmental impact.
- They focus on ecotourism, anti-poaching, sustainable use of wildlife, and the valorization of the local culture through use of NTFPs.

Centre International d'Appui au Développement Durable (CIADD)

- Conducts basic environment and development work in Lomié region.

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ADDITIONAL TITLES IN THIS SERIES

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