



Institutions, Collectivities and Individuals:
How Multiple Means and Mechanisms of Natural Resource Allocation Influence
their Use and Protection

Theoretical Considerations with Empirical Illustrations
from the Southwestern Amazon Trapeze of Colombia

by
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To my mum and dad

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LIST OF ABBREVIATIONS

CAR	<i>Corporaciones Autónomas Regionales y de Desarrollo Sostenible</i> (regional autonomous public agencies for sustainable development)
CBD	Convention on Biological Diversity
CORPOAMAZONIA	Corporación para el Desarrollo Sostenible del Sur de la Amazonía (Agency for Sustainable Development in the Southern Amazon)
GTZ	<i>Deutsche Gesellschaft für Technische Zusammenarbeit</i> (German Agency for Technical Cooperation)
INCODER	<i>Instituto Colombiano de Desarrollo Rural</i> (Colombian Institute for Rural Development)
INDERENA	<i>Instituto de Desarrollo de los Recursos Naturales Renovables</i> (Institute for forests and renewable resources)
IUCN	International Union for Conservation of Nature
MAVDT	<i>Ministerio de Ambiente, Vivienda y Desarrollo Territorial</i> (Ministry for the Environment, Housing and Territorial Development)
PNN	<i>Parque Nacional Natural</i> (National Nature Park)
SINAP	<i>Sistema Nacional de Áreas Protegidas</i> (National System of Protected Areas)
SINCHI	Instituto Amazónico de investigaciones científicas (Amazon Institute for Scientific Research)
SPNN	<i>Sistema de Parques Nacionales Naturales</i> (National Nature Park System)
TiCoYa	Tikuna, Cocama y Yagua
UAESPNN	<i>Unidad Administrativa Especial del Sistema de Parques Nacionales</i> (Special Administrative Unit for National Parks)

PROLOGUE: REMARKS ON THE CONCEPTUAL AND METHODOLOGICAL APPROACH

This study is based on two visits to the Colombian Amazon Trapeze. Access to the region and particularly to the indigenous communities was possible thanks to the support of the Environmental Program of the GTZ in Colombia and its director Peter Saile, the SINCHI, the University of Colombia, Sede Leticia and, most importantly, of the indigenous communities themselves.

The Basic methodology to collect empirical data was field research, which was mainly conducted as participating observation. This approach gave ground to interact with indigenous peoples through local participation in research and with local notions and processes of communication in order to establish a real possibility of reciprocity among the local actors, in particular the indigenous population and the settlers, and the researcher. Goal was to include as far as possible all the different social actors involved. In this context, it is important to highlight that in Colombia most indigenous peoples forbid any research in their territories. That is why research in indigenous territories requires an approach which goes in line with the respect for indigenous peoples' rights to self representation and sovereignty over their territories and to allow them to decide when, how, and with whom they want to work. This requires that the researcher discusses the purposes and plans with them and points out elements that should contribute to improve their situation.

The right to autonomy has different implications for indigenous peoples' relations with national policies, the processes of research regarding natural resource management, and projects that affect the lives or territories of indigenous peoples. In this sense, research topics and field research activities are somewhat collective decisions. The perspective opens the arena for constructing different methods according to the ad hoc development of the research. Consequently, the researcher participates in their daily life as well as in many workshops and meetings (community meetings or with national and local governmental authorities and non governmental organizations). At the same time the researcher agrees to bring back results and present them in a way which should allow the involved communities to benefit from the investigation. Along this line the researcher focuses on the role of different actors at the local and global levels, analyzing all the relevant actors and their actions and the interrelations that shape natural resource allocation.

1. INSTITUTIONS IN THE SOUTHWESTERN AMAZON TRAPEZE OF COLOMBIA: ZOOMING IN FROM THE “BIRD’S EYE VIEW” TO COMPLEX LOCAL REGIMES

“Deforestation is responsible for one fifth of global greenhouse gas emissions” (Greenpeace 2009).¹

“The Amazon rainforest contains about one tenth of the total carbon stored in land ecosystems and recycles a large fraction of the rainfall that falls upon it. So any major change to its vegetation, brought about by events like deforestation or drought, has an impact on the global climate system.” (Met Office Hadley Centre 2008).²

Climate change has become a major issue in the media and in everyday conversation. The fourth report of the Intergovernmental Panel on Climate Change (IPCC) – published at the beginning of 2007 – reaffirmed man-made climate change as a reality. The Amazon Rainforest – the world’s largest rainforest, covering over five million square kilometers and hence more than five percent of the earth, while crossing nine countries – is a major resource for slowing down this change, as has recently been reiterated at an international conference “Climate and Change in the Amazon” organized by the Heinrich Böll Foundation at the beginning of 2008 in Berlin (Schönfeld 2008). This vast territory is shared by a variety of communities and harbors an abundance of natural resources. For more than a decade, the sustainability of the Amazon has been on the international as well as national and local agendas. Non-governmental organizations (NGOs) and scientists from all over the world have been calling for a sustainable use or even strict conservation of the rainforest, arguing that the rain forest of the Amazon region is of outstanding importance for the planet’s climate and its biodiversity. However, at the same

1 <http://www.greenpeace.org/international/> (accessed 11.11.2009)

2 Quote taken from „Slaughtering the Amazon – Executive Summary Amazon Report 2009 “ by Greenpeace, July 2009. Met Office is the UK’s National Weather Service within the Ministry of Defence.

time, the region is affected by illegal resource use and overuse, population displacement caused by economic and political pressures, colonization programs and drug trafficking. Historically, the Amazon has captured the imagination of conquerors, dreamers, entrepreneurs, fortune-seekers and armchair philosophers of all times and nations: the Amazon as paradise or hell; the Amazon as “backyard”, an area where the problems of other regions can be “swept under the rug”; or the Amazon as “El Dorado”, a region full of wealth waiting to be exploited. Another vision, the one of its native inhabitants, is that of the Amazon as “our eternal, ancestral place of living”.

The future of the Amazon Region is still uncertain and undecided. All prospective scenarios are filled with major challenges, to be met by the construction of dialogue and exchange of information, by silent *de facto* interdependencies, the use of force or by the adoption of common cooperation policies in the use and conservation of natural resources and the execution of projects. On the discourse level, it is relatively easy to integrate conservation and sustainable use of natural resources protecting the tropical rainforest. However, until now, the Amazon has experienced many types of extractive economic booms (quinine, rubber, skins, wood, gold, petroleum, genetic resources, timber, iron ore, tin etc.) and deforestation for timber, cattle and soya, but has not yet experienced very much sustainable use of its resources in general, letting alone its primary forests.

Research into the causes of environmental degradation shows that institutions – here defined as systems of norms and rules - and their enforcement are crucial in order to understand the dynamics of conservation, resource use and misuse (Ostrom 2005). The Royal Swedish Academy of Sciences has just highlighted this fact by honoring Elinor Ostrom with the Nobel Price in Economic Sciences. In their explanatory statement, the Academy stresses the

significance of institutional regimes not only for natural resource management but for human cooperation more generally.³ Key among the relevant institutions are property rights and their enforcement mechanisms, as they shape to a great extent the dynamics of use and access as well as the protection from exploitation (Bromley 1991).⁴ Their sound allocation is essential for a successful management in terms of sustainability.

At the same time, the identification of institutional regimes that promote socially and ecologically desirable outcomes is a challenging task for research and policy-making. In spite of the optimism in the economic literature of the late twentieth century, the ability to design “optimal institutions” seems rather elusive (Luckert 2005: 21). The Amazon region has seen several endeavors of well-intended *de jure* allocations of property rights in favor of protection and sustainable use. Some of them have proven to be rather successful, such as Indian Reserves, whereas others have been flawed from the very beginning because of their inherently ambivalent or even anti-conservationist bias, such as “economic-ecological zoning” within the World Bank-assisted PLANAFLORO program of the 1980s and early 1990s in the Brazilian state of Rondônia and beyond (Nitsch 1993). Other approaches like community-based resource management, the recognition of common property with differing degrees of self governance, or the administration of protected areas by government agencies also do not, by any means, guarantee effective protection or sustainable use, nor does simple and outright private property. To advance our understanding of natural resource use and protection dynamics and how they are related to institutions, theory and praxis will have to recognize complexity and foster refinements. The identification of multiple property regimes, multiple and multi-level social sys-

3 This Year’s Nobel prize in Economic Science was awarded to Elinor Ostrom and Oliver E. Williamson, who both analyse economic transactions occurring outside the markets. The Commission honored particularly Ostrom’s „analysis of economic governance, especially the commons“ (source: http://nobelprize.org/nobel_prizes/economics/laureates/2009/ – accessed on October 12, 2009). Governance in this context can be understood as the formal and informal institutions through which authority and power are conceived and exercised. (Oyono 2005, Larson 2006).

4 Property rights in a broad sense refer to social institutions and not to any inherent natural or physical quality of the resource in question.

tems and multiple means and mechanisms of resource allocation are useful complements to sharpen our understanding as will be presented in this piece of research.

Bromley (1991) states that there are as many different property rights regimes as there are combinations of social systems. *De jure* property rights are most of the times supplemented by many *de facto* institutions. In fact, these *de facto* institutions, which may even be illegal, are not enforced or backed by one single authority – the State – but by various social subsystems such as organizations, social movements, clandestine alliances or other collectivities. In a particular context there can be as many regimes of property rights as there are subsystems of society. Multiple social systems can create a large variance of institutional regimes, which in many cases contain overlapping and conflicting elements. Moreover, they may apply multiple means and mechanisms of resource allocation as money and markets are not the only means. A complex set of taboos (f.e. not to steal) and enforcement mechanisms are also directly influencing resource allocation. This becomes particularly important when looking at the periphery of the monetary economy, like tropical forests in developing countries. However, only very few scholars discuss the effects of multiple social systems and multiple means and mechanisms of natural resource allocation within empirical work. This research seeks to fill this topic.

In Colombia, the constitution of 1991 formally recognized ancient indigenous territories as common property and stipulated the autonomy and self-governance of the indigenous peoples within those territories.⁵ As a result, Colombia's estimated indigenous population of around 700.000 (less than two percent of the national population) collectively owns about one quarter of the country's territory (INCODER 2006). However, on a *de facto* basis their self-governance of natural resources is limited and remains mainly under state jurisdiction and tutelage.

5 See Article 329 of the Colombian Constitution of 1991: „Los *Resguardos* indígenas son propiedad colectiva no enajenable.“ Also Article 55T.: „Se reconoce el derecho a la propiedad colectiva de las comunidades.“ And Article 63: „Las tierras comunales de los grupos étnicos son no enajenables, no prescriptibles.“ For more details and background see Ochoa, Arango (2004) and Semper (2003).

At the same time, in many cases, commercial loggers and others are invading their territories for extractive purposes (Ochoa 2001: 307; Sandt 2003: 129), and for this purpose, they often form clandestine *ad hoc* alliances with bureaucrats, police officers and judges among others. The result is a complex situation, which often is referred to as *de facto* open access. But in fact one can identify overlapping *de facto* property rights claimed by multiple collectivities, like e.g. loggers from outside the locality, local indigenous authorities and environmental agencies and enforced through multiple mechanisms including social sanctions (or benefits), threat with violence or simply payments.

The so-called *de facto* open access situation particularly fits the forest areas in Colombia's indigenous territories such as the *Resguardo* "Ticuna, Cocama y Yagua (TiCoYa) de Puerto Nariño" in the Southwestern Amazon Trapeze of Colombia. The typical and often intense land-ownership conflicts known from other parts of the Amazon have been largely settled (with some exceptions). At the same time, severe resource conflicts prevail involving powerful alliances with outsiders. Hence, the *Resguardo* TiCoYa provides excellent conditions to discuss natural resource conflicts beyond land-ownership conflicts. Examples from the region will be used to illustrate the role of multiple property regimes, multiple and multi-level social systems and multiple means and mechanisms of resource allocation.

2. FORESTS, PROPERTY RIGHTS, AND PEOPLE: KEY CONCEPTS, LITERATURE REVIEW AND INSTITUTIONAL ANALYSIS

2.1. Forests as common-pool resources

Forests are often rightly classified as “common-pool resources”. Common-pool resources have two characteristics: (1) a low feasibility of exclusion and (2) consumption is subtractive. Low feasibility of exclusion refers to a situation where it is difficult (and consequently costly) for anybody to exclude other users from access to the output or services they provide or even to the stock of resources (like land and timber). Consumption is subtractive or rivaling when one person consumes a good for a particular purpose, with the result that another person cannot use the same good.

One of the most important characteristics of this type of resource is the dilemma between the group (and society) and individual interests. Users have private incentives to enjoy individual benefits while leaving the costs of their behavior to the group and society – Hardin’s well-known “Tragedy of the Commons”. Social dilemmas, i.e. situations where individual and group objectives are in conflict, occur whenever some actors have the chance to receive private returns that are greater than their fair share of a joint return and/or to get away without fairly contributing to cover the costs. Social dilemmas, thus, usually involve a group externality that can, in principle, be dealt with in many cases by the group itself through collective action that results in the construction of self-governing institutions (Ostrom 1990, Cardenas 2000). The dilemma and its solution become more complex when outsiders appear, when the group refers to society at large and when intermediate and conflicting institutions intervene.

The potential “free rider” who is so famous in the literature, can mostly be held under control as long as he or she is a person or firm belonging to the community in question. But even if the community manages to cooperate beautifully within its own social structures, it is hopelessly stressed and overburdened, when the defect strategy is applied by outsiders. If the outsider operates in illegality, in an atmosphere of conflict and distrust, options for cooperation between community members and illegal or paralegal appropriators are limited. However, if the state authorities are far away or unwilling to enforce the law, the costs of rule enforcement exceed by far the possibilities of the local communities, and the recourse to violent means from the various actors makes things worse. The result is a complex situation, which often is referred to as *de facto* open access, when the territory involved is *de jure* common property of a community or state property.

2.2. Property rights in economic analysis – who owns a resource and why does this matter?

In the following section various designs of property rights regimes on natural resources will be distinguished. But what is understood by a “property right”?

“A property right is an enforceable authority to undertake particular actions in a specific domain. Property rights define actions that individuals can take in relation to other individuals regarding some ‘thing’” (Ostrom 1998: 4).

This definition will be adjusted later in this chapter for the purpose of this research, but Ostrom’s explanation will do for the moment. A range of property rights regimes is present in everyday life: widely used is the classification into the four classical regimes of private property,

state property, common property and open access. Private property usually is assumed to grant the most far-reaching bundle of rights. However, this classification is rather simplistic. Someone can dispose of a resource, which is owned by somebody else. In this case owner and possessor need to be distinguished. The one who holds (in whatever sense limited) using rights on a resource, and thus is in possession of it, is called the possessor. Additionally, possession of a resource can be illegal when bringing the resource in one's possession without holding any *de jure*, i.e. legal, rights on the resource. This difference is a key aspect for analysis as well as for politics: Particular property rights have economic implications even when an actor only "possesses" the resource without legally owning it. Apart from owner and possessor, other actors may hold – formal or informal, legal or illegal – rights regarding access, withdrawal or management.¹ Consequently, property rights regimes are bundles (or combinations) of property rights while the single property rights may be held by different actors.

Distinct bundles of property rights are possible, even with respect to the same resource, and should be interpreted as separate goods as they have different economic implications. In legal terms the definition generally seems to deal with the relation between a resource and a human being (or beings). However, for economic analysis it is much more enlightening to look at the relationships between humans which result from rights to the resource. As Ostrom makes clear, property rights establish a relation between humans regarding a resource.

Historically, distinctly specified property rights as a theme within mainstream economics occurred with the appearance of the "Property Rights Theory" at the end of the 1960s and early 1970s with its famous advocates Demsetz, Alchian and Furubotn, to name a few.² Before,

1 Bundles of rights associated with actor positions will be presented further below in Chapter 2.4

2 The Property Rights Theory commonly is classified as a branch of New Institutional Economics (NIE), which will be further discussed in Chapter 2.5

property rights were taken for granted and/or only taken into account as framing conditions (Lerch 1999: 132ff). Alchian points at the importance of property rights with a simple statement: "In essence, economics is the study of property rights of scarce resources." (Alchian according to Lerch 1999: 133). However, property rights have been an issue for a long time in political economy. And of course, they were essential for Marx and his pupils. But with the recent appearance of the property rights school they became integrated seamlessly into neoclassical economics. This approach can even be read as a radicalization of neoclassics as its inherent bias can be reduced to "market and private property – as much as possible" (Lerch 1999: 134).
Any restrictions regarding the disposition of property within these theoretical lines tend to be interpreted as dilutions rather than alternatives or complements.

The property rights school has had a major influence on politics for several decades and still does, and it has sharpened our understanding of resource conflicts, which is why its key elements will be briefly presented here. Property rights theory mainly examines the following aspects: the emergence and development of property rights, the allocation of property rights, and the consequences of this allocation for the efficiency in reaching objectives such as utility or profit maximization, conservation, sustainability or others. Property rights emerge or change when changes in the utility of a resource and/or a change of enforcement costs of specific rights on this resource, or more precisely, when the utility of property rights rises (or is lowered) and their enforcement becomes less (more) costly. Demsetz (1967) traces this finding back to results of an anthropological analysis of Speck and Leacock about the Montagnais indigenous peoples and their beaver hunting behavior in Quebec and Labrador around 1700, where due to a rising demand, private property rights were assigned to beaver hunting, which beforehand was seen as common property. Along these lines, to give a second example, argues the Coase theorem when explaining the emergence of property rights. Itself part of the property rights theory, the

Coase theorem – without going into more detail – puts the emergence of property rights down to the distribution of costs between polluters and victims (Coase 1960).³ Both approaches though do not look at the distribution of property rights in the context of their emergence. But if it is not the “law of the strongest” which is to be applied, it is exactly this dynamics which are particularly interesting in a state of change (Müller 2004a: 13f).

Regarding the dynamic effects of natural resource allocation, the scientific debate as well as politics have been strongly influenced by Hardin’s already mentioned famous article “The Tragedy of the Commons” (1968). The article describes a dilemma in which a group of individuals acting independently in their self-interest can destroy a shared, limited resource. Hardin illustrates his thesis by introducing a hypothetical example of a pasture shared by local herders. The herders are assumed wishing to maximize their individual yield, and so will increase their individual herd size whenever possible. The utility of each additional animal has two effects: the herder receives all of the proceeds from each additional animal, and the pasture is slightly degraded by each additional animal. Crucially, the division of these costs and benefits is unequal: the individual herder gains all of the benefits, but the costs are shared among all herders using the pasture. As a result, for an individual herder weighing these, the rational course of action is to add an extra animal, and another, and another. At the same time all herders reach the same rational conclusion. Consequently, overgrazing and degradation of the pasture follows. Hence, Hardin resumes that common property would hold incentives leading to overuse of the resource in question, since the entire group would carry the costs of overuse or, more precisely, the individual could take all the profit but pass on the costs of overuse to the group. The individual does not include the social costs into his individual cost-benefit

³ The Coase theorem holds that if property rights (to pollute, or to clean water) are well defined and no transactions costs exist, then the parties involved in an externality situation are able reach a Pareto-improving allocation of property rights by bargaining among themselves.

calculation. Those perverse incentives, according to Hardin, result in an inefficient allocation of resources under a common property regime because of resource overuse. Interestingly, already Aristotle argued in his *Politics* to this effect: "What is common to the greatest number gets the least amount of care" (Aristotle, *Politics*, Book II, Ch. 3 according to Ostrom 1990: 3).

The "Tragedy of the Commons" dominated the debate for years and was often uncritically accepted until the early eighties, when it became clear that one aspect had been clouded in the argumentation: the difference between open access and common property was not recognized in Hardin's thesis. The first refers to a situation where no limits exist neither on who is authorized to use a resource nor how much can be extracted, i.e., no one has the means to exclude anyone from using a resource. The latter characterizes a setting where the members of a specific group hold the right to exclude nonmembers of that group from using the resource (Ostrom 2005, Bromley 1991, 1992). A common pool of herders with a defined number of individuals could always come together and decide about a limitation of access for cattle. What Hardin actually described was open access and not any "commons" with a limited number of persons as collective owners of the right of access and the autonomy to regulate this access, such as herders in mountainous regions of the world have done since centuries. A different example is the atmosphere where no restrictions have existed, even though this state of affairs is currently changing through international treaties, traditionally, and where until not long ago the conditions for the appearance of a truly "common" property rights regime just weren't given. This can be seen as an unregulated state, called "open access", which is the true and critical aspect of the "tragedy". In consequence, occurring overuse under a common property regime can be overcome by allowing the group to design rules. Hardin's example shows a "tragedy of *de facto* open access", whereby *de facto* open access can relate to a formal open

access situation, or to insufficient, disputed, unenforced or unclear property rights, and it is that case in which individual or small-group possessors have the incentive to overuse the resource.

This points towards a different aspect, namely that the simple (though common) classification of property rights into private property, common property, state property and open access is very shallow. A private property regime usually refers to the situation where a single natural person or legal entity holds “all rights” regarding a resource, which – following Schlager and Ostrom (1992) – consists of access, withdrawal, management, exclusion and alienation. All of these rights can be held by single individuals or by collectives. When analyzing the property rights regime on common-pool resources, the above-mentioned rights are often split among the state, a collective and/or a person, each of which again split up into different entities. The collective may or may not have any internal property rights regime for its individual members and for outsiders. Hence, the rather rough classification into state, private and common property is not sufficient for analysis and a more complex view will be sketched out in the following sections.

Hardin’s herders example rightly demonstrates that *de facto* open access is critical regarding scarce and vulnerable resources. If such a resource generates highly valued products, one can expect that the lack of rules regarding authorized use will lead to misuse and overconsumption (Ostrom 1990: 2,3,7,9). Nonetheless, it is too easy to assume that private property is the only efficient way out of this dilemma, which has been the prevalent answer by many protagonists of the property rights school of thought. Generally, to keep a scarce resource available and to protect a resource system, limitations of uses and users are key. Property rights regimes have the potential to regulate this, while also being decisive for income and utility of the rights holders and the non-rights holders. Therefore a close look at property rights

arrangements in particular regimes and the effects on their allocation and distribution allows one to understand an essential part of the dynamics regarding resource use and conservation.

2.3. Getting rid of the “Troika of Confusions”: Making the commons less tragic and more complex

Ever since the publication of Hardin’s articles “Tragedy of the Commons”, the debate has been clouded by a “troika of confusions” (Ostrom 1998) that impedes communication. The source of confusion, according to Ostrom (1990) relates to the three differences between (1) common property and open-access regimes, (2) common-pool resources and common property regimes, and (3) resource systems as stocks and the flow of resource units.

The most far-reaching confusion has already been sketched and concerns the difference between property regimes that are open access and those which are common property. As Hardin has strikingly illustrated, if anyone can use a resource, no one has an incentive to conserve its use or to invest in improvements. The Colombian Amazon forest experienced this effect particularly during the sixties and seventies in the aftermath of Law No. 2/1959, which nationalized most of the forests. The institutional arrangements that local users had devised to limit entry and use of the forest were overruled, but the national governments lacked monetary resources and personnel to monitor the use of forest resources effectively. Thus, resources that had widely been under a *de facto* common property regime enforced by local users, were converted to a *de jure* state property regime, but *de facto* reverted to an open-access regime. The harmful effects of this change of status have been well documented from examples around the world.⁴

4 A detailed overview about the corresponding literature is given in Ostrom 1998: 2f

The second confusion relates to the distinction of a resource system and the relation of property rights regimes. Property rights to resources are not inherent to the resources themselves but are human institutions, meaning sets of mutually recognized claims and decision-making powers over those resources. No property regime is linked to a particular resource system by its nature. Classifying forests can as “common-pool resources” refers only to the inherent attributes of the resources at a certain time. Property rights establish a relation between humans regarding a resource. Forests can be under a private, a state or a common property rights regime or even a mix. The confusion in this case results in a terminological problem: Frequently one finds the phrase “common property resource” in contemporary literature to describe a type of economic good that has been defined as a “common-pool resource”. Operating with the term “property” in this context reinforces the impression that resources sharing these characteristics tend to share the same property rights regime.⁵ Most notably, there is no argument for any *a priori* association of common-pool resources with particular property rights regimes!

A third confusion clouds an in-depth debate: common-pool resources are composed of a resource stock and a flow of resource units or benefits from these stocks (Ostrom 1990: 30f, Knöpfel 2001: 18f) – and these need to be distinguished as a resource stock can be under a different property rights regime than the flow of resource units. Obviously a particular resource stock and the flow of resource units (goods or services) out of this stock are naturally interrelated, since it is the resource stock (sometimes also called resource system), which generates a flow of resource units or benefits over time. Devising property rights regimes that allow ecologically sustainable use of a common-pool resource requires rules that taking the distinction of resource stocks and their flow of units into account.

⁵ This is partly due to the confusing double meaning of the word “property” in English language as it may refer to “attribute” or “ownership”, depending on the context. But especially this difference may be crucial to recognize for analysis and policy recommendations.

2.4. Breaking down the social dilemma of common-pool resources

Understanding property rights regimes as bundle of rights and duties, Schlager and Ostrom (1992) identify five property rights that are most relevant for the use of common-pool resources – namely access, withdrawal, management, exclusion, and alienation – and give the following, and very useful, definition of those rights:

“Access: The right to enter a defined physical area and enjoy nonsubtractive benefits (for example, hike, canoe, sit in the sun).

Withdrawal: The right to obtain resource units or products of a resource system (for example, catch fish, divert water).

Management: The right to regulate internal use patterns and transform the resource by making improvements.

Exclusion: The right to determine who will have access rights and withdrawal rights, and how those rights may be transferred.

Alienation: The right to sell or lease management and exclusion rights” (ibid.: 250f).

In this context it is useful to associate positions of property-rights holders to specific bundles of rights as individuals (or collectives) may hold well-defined property rights that include or do not include all five of the rights defined above.⁶

“‘Authorized entrants’ include recreational users of national parks who purchase an operational right to enter and enjoy the natural beauty of the park, but do not have a right to harvest forest products.

⁶ The following classification of positions is adopted from Ostrom/Schlager (1996). Note that the definition of positions associated with specific bundles of rights separates the question of whether a particular right is well-defined from the question of the effect of having a particular set of rights.

'Authorized users' have both entry and withdrawal use-right units. The presence or absence of constraints upon the timing, technology used, purpose of use and quantity of resource units harvested are determined by operational rules devised by those holding the collective-choice rights (or authority) of management and exclusion. It is important to notice that property rights may overlap when one set of users owns the right to harvest fruits from trees, another set of users owns the right to the timber in these trees, and the trees may be located on land owned by still others.

'Claimants' possess the operational rights of access and withdrawal plus a collective-choice right of managing a resource that includes decisions concerning the construction and maintenance of facilities and the authority to devise limits on withdrawal rights.

'Proprietors' hold the same rights as claimants with the addition of the right to determine who may access and harvest from a resource. Most of the property rights regimes that are called 'common property' regimes involve participants who are proprietors and, hence, have four of the above rights, but do not possess the right to sell their management and exclusion rights even though they most frequently have the right to bequeath it to members of their family and to earn income from the resource (see Bromley et al. 1992 for extensive examples). Empirical studies have found that some proprietors have sufficient rights to make decisions that promote long-term investment and harvesting from a resource. In a series of studies of inshore fisheries, self-organized irrigation systems, forest user groups and groundwater institutions, proprietors tended to develop strict boundary rules to exclude noncontributors;

established authority rules to allocate withdrawal rights; devised methods for monitoring conformance; and used graduated sanctions against those who do not conform to these rules (Agrawal, 1994; Schlager, 1994).

'Owners' possess the right of alienation - the right to transfer a good in any way the owner wishes that does not harm the physical attributes or uses of other owners - in addition to the bundle of rights held by a proprietor. An individual, a private corporation, a government, or a communal group may possess full ownership rights to any kind of good including a common-pool resource" (Ostrom/Schlager 1996: 133f).

The rights of owners, however, are never absolute and even private owners have responsibilities not to generate particular kinds of harm for others (Ostrom 1990: 5). Additionally to the above mentioned rights, two more categories need to be considered, as outlined by Arun Agrawal (Agrawal 2003: 244): monitoring and sanctioning. Both are linked and together they refer to the right and duty to assure that the access and withdrawal rights are observed along with the authority to punish violations.

Property rights regimes are far more complex than simply government, private and common property and protecting a resource stock or resource system is not dependent on a particular structure of property rights regime per se. Failures of market and state institutions as causes of unsustainable natural resource management have also been widely discussed. With respect to natural resources, the market is not able to cope with the social dilemma related to common-pool resources, since it does not recognize ecological nor social sustainability as relevant factors. The market mechanism neither honors or remunerates cultural diversity nor does it respect biodiversity and a functioning living ecosystem – a situation that makes political

or other collective institutions necessary. But central state authorities, too, have, in the majority of cases, especially in developing countries, a limited capacity to cope with this problem, lacking information and enforcement capacities.

As an alternative to the market and to state controlled institutional arrangements, local level collective action has been highlighted and studied. Local authorities can often substitute for the central state authority and have proven to be adequate in many diverse cases; however, in others resource overuse occurred in spite of local community endeavors. Elinor Ostrom and her disciples have analyzed in depth cases of common-pool resources (CPR) in many common-use situations and a wide variety of property regimes, promoting the empowerment of communities and local users in solving the social dilemma mentioned above (Ostrom 1990, Ostrom Gardner and Walker 1994, Ostrom 2005). They argue that collective action for CPR management will endure and be successful under six relevant conditions of (1) well-defined boundaries, (2) congruence between appropriation and provision rules, (3) effective monitoring, (4) graduated sanctions, (5) efficient conflict-resolution mechanisms and (6) minimal recognition of rights to organize (Eggertsson 1990; Ostrom 1990; Bromley 1991; Hanna and Munasinghe, 1995).

Consequently, to slow the degradation of forests, neither the market nor the state nor self-governing by local communities alone are comprehensive solutions. Ostrom (2005), Larson et al. (2006) and Meinzen-Dick (2001: 20) all agree that "a completely decentralized system of small local units without overlap is as incapable of learning and self-correction as a fully centralized system" (Ostrom 2005: 270). Consequently, complex institutional regimes not only prevail in praxis, but also in theory, when it comes to recommendations for efficient and predictable governance structures.

2.5. Understanding property rights regimes as complex institutional structures

To analyze the social dilemmas related to common-pool resources, Institutional Economics has proven to be a fruitful approach and forms the theoretical point of departure of this research. However, before going into detail, the concepts behind institutions, rationality, preferences, preference formation, and choices need further clarification. In the literature one finds a wide range of positions, but it is common to distinguish two of them: the so-called “New Institutional Economics” (NIE) and the so-called “classical” school of “Institutional Economics” (IE). While the first has a strong influence from neoclassical economics, the classical school takes a very different point of view. The classical IE has its origins with the European founding fathers of political economy such as Adam Smith, David Ricardo, Karl Marx and John Stuart Mill, and with American authors like Thorstein B. Veblen, John R. Commons, and Wesley C. Mitchell, whose positions have been modernized through a combination with ideas from contemporary sociology, anthropology and organizational science (Vatn 2005: 121, Vatn 2007). In the following, additional links to systems theory will be pointed out.

Both “institutionalist” positions should be understood rather complementary (Nitsch 1990). The following short overview of the different positions of institutional economics is partly adopted from the work of Ariel Vatn (Vatn 2005, Vatn 2007, Vatn 2007b). For each school, “institutions” will be discussed before touching very briefly some ontological and epistemological aspects.

According to the NIE (see Coase 1984, Eggertson 1990, North 1990), institutions are:

“the rules of the game of a society or more formally the humanly-devised constraints that structure human interaction. They are composed

of formal rules (statute law, common law, regulations), informal constraints (conventions, norms of behaviour, and self-imposed codes of conduct), and the enforcement characteristics of both.” (North 1995:29)

Elinor Ostrom defines institutions as “the prescriptions that humans use to organize all forms of repetitive and structured interactions” (Ostrom 2005:3). Most authors of the NIE support the neoclassical position of individual rationality, i.e., individuals are rational egoists maximizing individual utility. The individual is self-contained, implying that preferences are stable and thus independent from institutions. In other words, if humans are understood as autonomous, institutions can only operate as external constraints (Vatn 2005: 121f). In the position of the NIE, therefore, institutions are seen as external constraints. Behavior will be based on maximization or individual satisfaction within these constraints. Behavior in relation to others is only instrumental and/or strategic and at the end of the process of adjustment after changes, equilibrium will always be reached, at least in theory.

Summarizing the NIE, then, the core assumptions are: 1. rational choice as maximizing individual utility (utility as external pay-off); 2. fixed (or given) preferences (autonomous individual); 3. equilibrium states.

The classical school looks at institutions as more than external constraints, seeing them as also moulding individuals into “settled habits of thought” (Veblen 1919: 239). Institutions are seen as structures, and institutions have a formative influence on individuals. They offer meaning to the situation and support values and protect and produce interests (Vatn 2007). Consequently, institutions are both external constraints and structures shaping the individual (Scott 2001: 39). For Scott (2001):

“Institutions consist of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior” (Scott 2001: 33).

Hence, what is rational is not just a result of an individual, autonomous calculation based on stable preferences given external constraints, but institutions also influence what is observed, which values are seen as the right thing to do, and which preferences are held. According to the classical view, there is a two-way interaction between the individual and the institutions. As an individual becomes socialized into an institutional structure, he or she also internalizes the values and logic upon which he or she is based.

This institutional view emphasizes the role of both actor (individual) and structure. A definition from Vatn combines and develops the most important aspects emphasized by classical institutionalists:

“Institutions are the conventions, norms and formally sanctioned rules of a society. They provide expectations, stability and meaning essential to human existence and coordination. Institutions regularize life, support values and protect and produce interests” (Vatn 2007b: 13).

The assumption of Vatn, following Bromley and Hodgson, is that plural rationalities exist and that preferences are socially constructed and dynamic, i.e. they are seen as to a certain degree endogenous.

To decipher the dynamics of use and conservation by individuals in certain moments and within the *detailed* structure of the action arenas, the NIE approaches seem more adequate, whereas classical institutionalism is more appropriate, when larger institutional change dynamics

and power relations are to be analyzed (Nitsch 1990). It will be assumed that the various actors maximize their utility and follow their own agenda. At the same time, some aspects of the classical IE view from above -- like socially-constructed preferences -- will be taken up, in particular to interpret the social structures within which the individuals make their choices, and their change over time.

Summarizing the two schools outlined above, it is obvious that they do not differ too much regarding what institutions are but rather in what they do and how the relationship between institutions and the individual is shaped. To a large extent, this is based on different views on whether institutions mould the valuation of utility by the individual, which will be discussed in the next section. When analyzing action arenas, in the following, the analysis implies that only individuals decide, neither institutions nor collectives, but that institutions shape and mould individual behavior so that utility functions are not taken as given in a dynamic perspective.

Before moving on, one side aspect needs clarification: In everyday use, the term "organization" is often mixed with "institution". An organization is not the same as an institution. Organizations are social entities, even though institutions constitute them:

„The term organization refers to public bodies (political parties, the Senate, a city council, an administrative authority), legal persons in economic life (firms, trade unions, family farms, cooperatives) and agencies of the educational system (schools, universities, centers for vocational training). They consist of groups of individuals who undertake joint action, because they want to achieve a common objective" (North 1990: 5).

2.6. Individuals as sociocultural beings shaped by social systems and by the history of society

This section discusses methodological individualism to clarify the point of view taken for analysis as the definition of this term varies substantially. Despite its frequent appearance, there is no consensus on its sense and usage. This is surprising as in many models, methodological individualism is taken as basic condition without discussing its contextual meaning. Frequently economic theories are categorized as either individualistic or holistic. However, as Udehn puts it, “this neat picture is not so much wrong as too simple” (Udehn 2002: 479). Of course, both doctrines prevail in a variety of mutations and some combine elements from both.⁷

To find the first individualist theory of society, one has to go back to Greek antiquity, where it is used to describe the emergence of social systems and social order more generally (Udehn 2002: 480).⁸ The theory of the social contract has been picked up in the seventeenth century by Hobbes and Locke. The point of departure is the “state of nature” where individuals are assumed to be asocial and no society or culture exists. Hobbes described such a setting as “state of war of each against all with continual fear” (Hobbes [1651] 1968: 186 according to Udehn 2002: 480, see also Ostrom 2005: 53). Rational and self-interested as individuals are, they try to escape from this status quo and institute rules and enter into a contract with others. The most eye-catching feature of the state of nature is the absence of society and culture at all. Nevertheless, it is still present in many rational choice explanations of the emergence

⁷ A brief history of methodological individualism and an overview of the evolution of this phrase is given by Lars Udehn in his book *A History and Meaning of Methodological Individualism* (2001).

⁸ Note that what here is called a social system in contemporary sociology is often labeled social institution and refers to complex social forms that reproduce themselves such as governments, the family, human languages, alliances, business corporations, and legal systems.

of institutions and it seems as if Hobbes' image of social order is what many social scientists identify with methodological individualism today.

However, individuals are cultural beings living in a society. Consequently, to explain human action, the beliefs or attitudes of individuals matter. Karl Popper ([1945] 1966) picked this aspect up in the discussion of methodological individualism. Popper suggested a methodology based on situational logic and institutionalism (Popper ([1945] 1966: 90, Udehn 2002: 488). He combined two originally incompatible elements, which traditionally represented two opposite doctrines: individualism and institutionalism (Udehn 2002: 488). In Popper's "Institutional individualism", individuals are seen as socio-cultural beings shaped by social systems and by the history of society (Udehn 2002: 488). This clearly represents a new version of methodological individualism and can be associated with the work of Joseph Agassi, a pupil of Popper, and his article "Institutional Individualism" (1960). For Popper and Agassi, all social phenomena should be understood as resulting from the decisions, actions, attitudes, etc., of human individuals, but recognizing the power of institutions to shape their preferences. This avoids the requirement of complete explanatory reduction to individuals, and does not imply that explanations should be in terms of individuals alone. On the other hand, it avoids the overwhelming power of institutions like classes over the individual person reducing him or her to a mere character mask and puppet of the collective.

According to Hodgson (1986), the debate on methodological individualism is not yet completely resolved:

"Does [methodological individualism] simply point to the importance of individuals in explanations of social phenomena, or does it insist that explanations should be reduced to individuals alone? Clearly, there is no

consensus among advocates of methodological individualism" (Hodgson 1986: 217).

For the purpose of the following analysis, the most promising approach seems to be what Popper and Agassi called "institutional individualism", i.e. an approach which takes those interdependencies seriously, which exist between individuals and the institutions within which they operate and with which they are confronted in the arenas of their activities.

Accordingly, in the following analysis, each individual is modeled with a utility function depending on his/her preferences, calculating the utility of different options and then making a rational choice, i.e., deciding for the option with maximum utility for the individual. Among these preferences, institutional pressures and "spirits", altruistic motives and ecological concerns may play an important role within the preferences and utility structure of the individuals so that the use of this methodological approach does not *a priori* exclude the "common good" or "ecological concerns". In other words, it also covers "what is right in a certain situation or institutional context" (Vatn 2007:4), labeled "social rationality" by Vatn (2007), as being part of the individual's utility function, because of the "warm glow" associated with the act of doing the right thing. Theory recognizes the importance of social rationality, because individuals always carry some kinds of these objectives in their utility function, thus playing a role in decision-making. Trust, the sense of belonging, being esteemed and other non-material pay-offs count in the utility function of each individual.

It makes sense to keep the assumption that individuals act rationally. Then the question turns to how rationality is defined. An individual who feels good when cooperating does not act irrationally when making decisions in light of the "common good", which obviously has a utility for his or her psychological well being. However, in analysis, one needs to distinguish carefully

how to relate rationality to the assumption of a “homo oeconomicus” in order to avoid to turn the phrase into a tautology. In the following the term “homo oeconomicus” is understood and used as a category for individuals who act “normally” in an action situation, in contrast to a “homo heroicus”, who is defined and can be understood as acting with an extraordinary dose of altruism or commitment to nature and society on one side, and to a “homo criminalis” on the other, who is defined and can be understood as acting with an extraordinary dose of selfishness even willing to apply criminal techniques to maximize his/her own utility.

2.7. Property rights, multiple social systems and multiple means and mechanisms of resource allocation

For Bromley, property rights “are the capacity to call upon the collective to stand behind one’s claim to a benefit stream” (Bromley 1991: 15). This definition contains three core elements, “capacity to call upon a collective”, “to stand behind” and “benefit stream”, which deserve some more attention in the context of this analysis.

2.7.1. Collectivities as social subsystems to stand behind a claim

To analyze situations in which many institutions are characterized by informality, illegality, force, violence and camouflage, it is useful to substitute Bromley’s “collective” by the term “collectivity” on which property rights holders call upon. The latter avoids the rather compact, holistic, visible character that is easily associated with the term “collective”. Collectivities are understood as distinct formal or informal human groupings with their own social structures, hence, constituting social subsystems. Their members are either linked through a common identity, like cultural or ethnic groups, social movements, or – less compact – in *ad-hoc* undertakings connected through clandestine, strategic alliances composed of any

combination of businessmen, bureaucrats, individual police or military servicemen, judges, NGO functionaries and indigenous leaders.

Key is, which collectivities are willing – or unwilling – to protect, i.e. “stand behind”, the other one’s claim to a benefit stream⁹ – particularly when “the rule of law” is mostly absent, as Wienold (2006) emphasizes in his analysis of land-grabs in the Brazilian Amazon. Rights correlate with the duties of others (“to stand behind”) with respect to that object. Note that environmental disputes generally are about the interest of one actor (or group of actors) against the interests of others. As long as many are excluded from property, it will be the collectivity of property rights holders, who will approve one another’s property rights claims and will be willing to enforce them – either through force by the state or by private force. Luhmann (1994) gives an interesting view on these circumstances when taking property rights as encoded “access”, which for other property rights (like withdrawal etc.) is *de facto* a precondition (Luhmann 1994: 178 according to Wienold 2006).¹⁰ The term “access” is particularly to the point when analyzing the use and conservation of natural resources from an institutional perspective, because access might happen legally or illegally. Once a resource has been accessed and someone claims property rights regarding this resource, and has a collectivity which stands behind him/her with the willingness to enforce them, its potential origin from illegal access may/might be clouded and even totally concealed. The new *bona fide* property rights constitute a new distribution of assets and it is possible to return to normal within the monetary economy (Wienold 2006: 47ff).

9 A benefit stream should here be understood as including the stock from which the those benefits flow.

10 In German the wording seems more precise: „(Privat-)Eigentum ist für Luhmann die gesellschaftliche Codierung von ‘Zugriffen’, die diesem *de facto* vorausgesetzt sind. (Geld gilt als Zweit-Codierung des Eigentums).“ (Wienold 2006: 49).

2.7.2. The tripod model of allocation means and mechanisms

The question is not only who stands behind one's claim, but also in which way do collectivities stand behind it. An interesting approach to analyze the allocation of natural resources to use, pillage and/or protection, is presented by the German economist Stadermann (1995). He identifies three, and only three, allocation mechanism that have reigned society in history (in a wide sense): taboo, force and money. In fact, all three means have always been relevant, but taboo was predominant in ancient societies, force was the main mechanism in the feudal and also in the real-socialist, soviet era, and money rules the capitalist, contemporary world. All three of them are, of course, relevant in today's world, since money dominates resource allocation via markets, but without taboos and force money would not be in a position to prevail, since they flank money as complementary allocation mechanisms. There is a widespread taboo structure not to steal. Additionally – because, in fact, some people do steal – there is a widely accepted force mechanism in place to enforce contracts (executed by courts and police) trying to catch and penalize snatching.¹¹ Most analyses of economic phenomena take force and taboo flanking money as the prevailing allocation mechanism, as given. That is quite legitimate for most cases in modern monetary economies. When analyzing phenomena at the periphery of the monetary economy – such as resource use and protection in the Colombian Amazon – the other two means of allocation, and their gamut of manifestations, gain considerable relevance. In some situations, taboo or force may even be the dominating resource allocation mechanism (see also Nitsch 2008: 15).

¹¹ A good and simple example for Stadermann's tripod model is the purchase of apples, where money (as the dominating allocation mechanism), force (against snatchers, robbers and thieves) and taboo (not to snatch, from the side of the public) have to concur as the indispensable basis for a functioning market.

Stadermann's tripod model of three simultaneously present allocation means opens up the view on the enforcement of rights and the sanctioning of their breach. Integrating the tripod model into Bromley's definition of property rights given above, in particular for *de facto* property rights without *de jure* legitimation, what "stand(s) behind one's benefit stream" may be an informal, but rather powerful collectivity reigning resource allocation with taboos, force and money. Bromley states, "rights only have effect when there is some authority system that agrees to defend the holder's interest in a particular outcome" (Bromley 1991: 15). He continues, "I can turn to the state to see that my claim is protected" (ibid.). As a consequence, where state authorities for enforcement are absent, the diagnosis is one of *de facto* open access, where the claims are protected by private enforcement so there is only access for firstcomers as long as he has the private power to defend himself against latecomers. Hence, force as an allocation means assumes a more prominent role, when one comes to understand the dynamics of use and conservation in these circumstances. Groups of actors launch means to enforce *de jure* illegal though *de facto* existing property rights through modes which can be as simple as paid gunmen. Pure violence can *de facto* secure access to property rights, i.e. the corresponding benefit stream, even though this would not been seen as legitimate in any legal system. Without a state monopoly on the legitimate use of force, the danger always arises that local conflicts about access rights are solved through violence or thread of violence. This constellation is well known in the Amazon, where traditional communities and peasant squatters are often driven from their territory by force. As already pointed out, traditional *de facto* property rights have often been misinterpreted as open access so that the introduction of *de jure* property rights substituted or overruled community based regimes without proper enforcement by the state. But also when traditional property regimes are officially recognized by the national constitution or some other law or decree from the far-away capital of the country, those local regimes

may have to defend themselves against locally much more powerful constellations, which are often overlooked: Alliances of actors “on the prowl” establish illegal property rights regimes and enforce them through the launch of an informal or even illegal authority system. Modes of resource allocation combining taboo, force, and money can take many faces and a whole gamut of collectivities can stand behind one’s and/or the others’ benefit streams.

2.7.3. Taboos as subsets of individual preferences

The wording in the tripod of allocation mechanisms is somewhat unusual so that a certain digression with regard to “taboo” should be in order. “Taboo” is understood here without any mystical connotation but rather as a concept for internalized individual values and as such, in economese, taboos are a subset of individual preferences. Taboos include norms, as they imply the accepted rules of social systems and institutions, formal and informal ones, which would or even could sanction or reward behavior – just as one’s conscience or consciousness does. Hence taboos constitute specific types of preferences. Interestingly, the slight linguistic difference between conscience and consciousness points to an important aspect: The word taboo suggests that corresponding values are not necessarily questioned. One may have a guilty conscience related to breaking a taboo without having a consciousness about the origin of this feelings, since it is subconsciously self-evident. After all, taboos do have a somewhat mystical aspect and are not easily challenged and changed, except through long-enduring, often conflict-ridden learning processes, and under the influence of mighty shamans or other powerful leaders.

In structural heterogeneous societies, taboo structures may differ significantly among individuals. Ostrom (2005) stresses the point that individuals attempt to create complex mental maps to be able to make reasonable decisions in many diverse settings and that these models

may diverge largely between individuals. Using Denzau and North (2000), Ostrom emphasizes communication as a means for allowing individuals to develop and become aware of mental maps. If individuals possess a shared cultural heritage, communicate often and without restriction, mental maps are likely to be similar (Ostrom 2005: 161f). In many situations of resource appropriation and management however, individuals may not interact in free and open discourse and may not share specific cultural views and, hence, may have widely differing taboo structures.

2.7.4. Multiple collectivities and the individuals' construction of reality

Mental maps are affected by the feedback individuals get after the action they chose in different situations (Ostrom 2005: 159). Thus, the social environment conveys and shapes one's taboo structure through the feedback one receives in the various action arenas. In this regard, collectivities are connected to certain perceptions of reality, i.e. what has meaning, and convey taboos, i.e. what is the right thing to do. This may limit the communication between different collectivities. Apart from "cultural belief systems" (Ostrom 2005: 160), which Ostrom explicitly recognizes, many more social subsystems and institutions as collectivities influence the utility values of decision options. Different perceptions of reality have their result in distinct individual preferences. Obviously, individuals in the same situation frequently make different decisions because they value the options differently.

Each collectivity reflects a "mode of thinking" and influences how the individual makes rational decisions. Each collectivity also tends to form a distinct identity of itself, which is reproduced through operating only with limited, selected information in the internal communication process and with regard to outsiders. Following the rationality approach outlined above, collectivities transmit values for utility of the different options in decision-making.

Hence, decisions of an individual in a specific situation are linked to alternative value systems of multiple collectivities. Apart from their position in the action situation, the participants process the available information differently and this information processing is (to a certain degree) a product from belonging to one's own set of multiple collectivities.

Consequently it is useful to recognize that individuals have different sets of taboos influencing their decisions. Since multiple collectivities mold the individual's construction of reality and how he or she processes the information through the transmission of perceptions of reality, taboos should not be interpreted as totally coherent and inflexible, but as often contradictory. Those mental maps and taboos structure the decision-making process and consequently the behavior of the individual which may vary largely from one situation to the other. Staying with the tripod model, one can say that it is quite realistic to assume that everybody can be bribed by money to outflank his or her taboos and/or forced to do so by violent means.

In a dynamic perspective, collectivities become variables and individual preferences are no longer stable, challenging methodological individualism and fostering a switch to more comprehensive Institutional Economics in order to explain the development of institutions in an historical perspective. Integrating collectivities as players allows a broadening from the micro perspective of action arenas to the structure of regimes and their change patterns.

2.7.5. Competing property rights regimes linked to different collectivities

Ostrom emphasizes that “the capacity of humans to use complex cognitive systems to order their own behavior at a relatively subconscious level makes it difficult at times for empirical researchers to ascertain what working rules for an ongoing action arena may actually be in practice” (Ostrom 2005: 24). Working rules, she indicates, are the set of rules to which participants would refer when asked to explain and justify their actions to fellow participants in an action arena (ibid.). Following this definition, property rights can be seen as part of the working rules. Since the working rules structure the game itself (Ostrom 2005: 21), we have to ask whether the individuals in question are in fact playing the same game; if making decisions, are individuals referring to the same rules backed by the same collectivities? In fact, they never do. The individual is part of multiple collectivities (for example, family, ethnic group, community, citizen of the Nation, the Province, the *Municipio*). Thus, competing property rights regimes will result, because different individuals may belong to different and confrontational collectivities and even the same individual refers to different collectivities when calling on others to stand behind him/her when one or the other of his/her supposed rights is challenged. So different collectivities do not neatly fit one into the other like the Russian matryoshka doll, but form a complex social structure around the individual.¹²

Most importantly, some of the individuals may be outsiders or linked to outsiders calling upon much more powerful collectivities than the local ones, putting pressure on the resources and inhibiting the resolution of conflicts through collective action by the community members alone. In particular poor local communities that depend on resource use and sales for survival

¹² That is also the reason why the term “multi-level”, which is often used in similar circumstances, is avoided here. It suggests a clear hierarchy, where in the Colombian field, transversality, archipelago networking and bridging tend to prevail.

and for a small amount of monetary income may not be able to raise those resources which are necessary for monitoring and protecting the natural resource from exploitation by outsider alliances. They are rather likely to be prone to being bribed into those alliances.

2.8. An appropriate approach for analysis

Starting point for the following analysis is the observed situation (diagnosis) of degradatory timber extraction in the Southwestern Amazon Trapeze of Colombia, which constitutes the *explanandum*. Following the approach of abduction, the constellation of causal and functional chains leading to this effect will be examined. The analysis will be context specific, taking into account the unique character of the social objects and their constellations studied in space, time and history. Obviously there are several causally efficacious mechanisms operating simultaneously - hence the outcomes rely on multiple determination (Elder-Vass 2007, Weigelt 2009). In the following illustration of resource use and protection dynamics in this part of the Colombian rainforest, an effort will be made to break down what commonly is classified as a *de facto* open access scenario into a set of arenas in which many different and often conflicting *de jure* and *de facto* property rights are imposed by various actors and their respective collectivities through various means, forming a complex regime.

On the basis of Bromley's definition of property rights, the focus will be on the actors who claim the benefit streams and/or the stocks in the various action arenas, and whose collectivities can be called upon by those actors, when it comes to defend these claims. The analysis will take into account that there are various alliances of actors and collectivities claiming and defending *de facto* or *de jure* property rights – always including what one could metaphorically call the “rights of nature” which are typically defended by advocates such as NGOs, academics, and indigenous groups and individuals.

In the analysis, collectivities will to a certain extent be connected to sets of taboos. It will be examined, if those sets have explanatory consequences for the decisions individuals take with respect to resource use and conservation. Furthermore it will be studied if and how certain (groups of) actors can be linked to specific collectivities through the institutional set-up of organizational entities they are working for (or against) and/or identify with. It is of critical importance that individuals are part of multiple collectivities simultaneously, like family, community, hunters and guerillas – with widely differing constellations across individuals and situations.

The outlined tripod model of three simultaneously present allocation means, namely taboo, force and money, with differing comparative relevance, will be applied to discover, how alliances are tied together through those means and how each of the three means affects the allocation of natural resources. In this context, it will be investigated to what extent alliances are based on overlapping sets of taboos of the involved individuals, and to what extent common monetary interests and common resistance against or use of force and violence also make good allies.

3. SOCIO-GEOGRAPHICAL BACKGROUND, LEGAL FRAMEWORK AND ENTITIES IN THE AMAZON TRAPEZE OF COLOMBIA

"In April 1989, at the small Amazonian town of La Correra, without international pressures, we declared emphatically and decisively that Colombian policy with regard to the Amazon jungle is to conserve its ecosystem and respect the rights of the indigenous peoples that inhabit them. [...]

For Colombia it is clear that this policy is the most indicated for ecosystem conservation and to achieve a higher level of welfare not only for the indigenous communities but for the country as whole.

The Amazon jungle has maintained through millennia the greatest biological diversification in the world, and has contributed fundamentally to the climatic control of the planet. Given greater scientific knowledge, this great diversity will in the future become a source of immeasurable wealth for the country and for humankind in general. Given the need to conserve the Amazon jungle, we believe that the indigenous model is a valid alternative to coexist with the ecosystems.

The Amazonian territories are not particularly suited to the development of agriculture or cattle raising. The poor soils and fragility of the ecosystem will not sustain renewable natural resource exploitation based on our current experiences and technologies. Colonizing the jungle and exploiting its natural resources with immediate objectives, or destroying it under the illusion of resolving economic and social problems, will in no way provide the anticipated results."¹

*(Virgilio Barco, President of the Republic of Colombia,
1990)*

¹ Speech held at the meeting of the Presidents of the member nations of the Treaty of Amazonic Cooperation. It continues very interestingly for a presidential statement: "[...] In less than two centuries, the model in the industrialized nations of natural resource exploitation not only destroyed the fauna and woods of Europe and North America, but almost involved the extinction of indigenous populations and native races. [...] It is true that they created a higher standard of living for their societies, but at the cost of a deteriorating environment for the rest of the people of the world. [...] We must unite our efforts in order to produce a new and fair formula for the global treatment of the environmental challenges which threaten all mankind." (PRC 1990: 2f)

3.1. Introducing the Region

Colombia, situated on the North of the South American Continent with a surface area of 1,141,748 square kilometer, has been defined as an Andean and Caribbean country in spite of having a long coast on the Pacific Ocean and almost half of its territory to the east of the country is made up of plains and tropical forests. 55.6 million hectares or 49 percent of Colombias territory are covered by natural forests that are habitat of approximately 10 percent of the world's biodiversity, making Colombia one of the most biodiverse nations worldwide (Ministerio del Medio Ambiente 1996). In order to start the analysis, this chapter will introduce the region and give the necessary social and cultural background of the actors as well as present the status quo of the *de jure* property rights structure and the entities with relevance in the action arenas.

3.1.1. Socio-geographic and geological basics of the Colombian Amazon

Of the enormous Amazon Basin, which covers more than 5 million square kilometers, 403,348 square kilometers belong to Colombia, representing eight percent of the overall basin and 35 percent of the country. The Colombian Amazon is characterized by geological, ecological and cultural heterogeneity. The climate is typified by abundant rainfall, a median temperature of 25 degrees centigrade and an average air humidity of more than 80 percent. The forest fulfills various functions in the ecosystem. It protects the soil from eroding rains (25 percent of the daily rainfall is retained by foliage) and the intense solar radiation; it captures and stores nutrients; and it guarantees the survival of thousands of animals like mammals, reptiles, insects, birds, and fish.

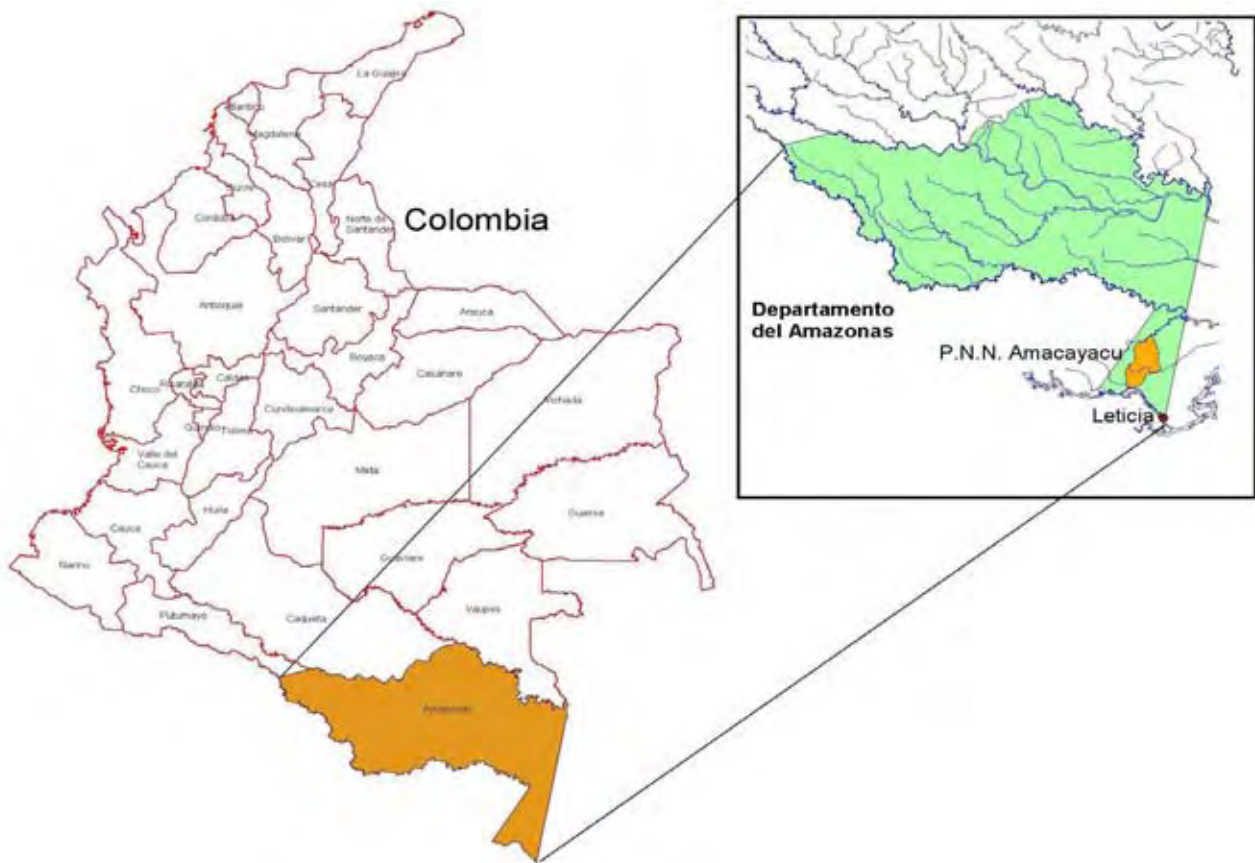


Figure 1: Geographical Position of the Amazon Trapeze of Colombia (Source: MAVDT)

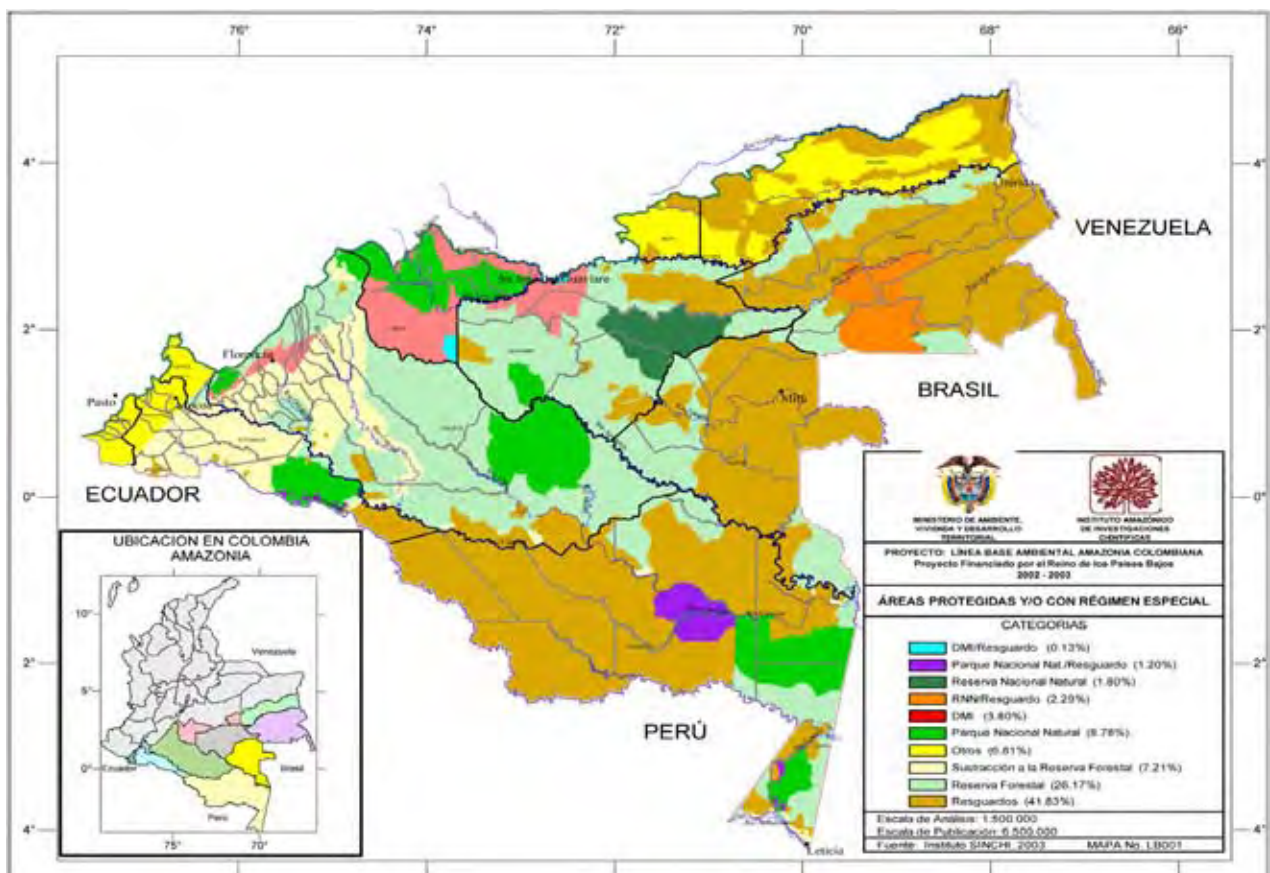


Figure 2: Administrative Division of the Colombian Amazon. Note that 27% of Colombian national territory is legally recognized as indigenous territory – still growing, particularly in the Amazon (30,5 million hectares) (Source: SINCHI)

Also noteworthy is the hydrological cycle of the Amazon River with significantly changing water volumes. It starts to rise in November, and increases in volume until June, then falls until the end of October. This has essential implications for resource use for a number of reasons. First of all, some of the tributary streams almost dry out or convert to a little creek making some of the communities inaccessible by boat. At the same time, extraction of timber from the areas deep in the forest can only be realized during the season of high river levels - usually between February and August. Moreover, in recent years the phenomena becomes more intensive and there is the feeling of a connection to climate change. The consequence are more intense dry seasons, leaving more tributary streams at extremely low levels with serious problems for the aquatic animals. When drying out, little lakes are left in the riverbed and for a short time there is an oversupply of fish in the communities and villages, before many fish die in the isolated and shrinking lakes intensifying the observed symptoms of overfished rivers in the rest of the year.

The population of approximately 450,000 inhabitants in the Colombian Amazon is basically made up of colonist settlers and indigenous peoples. The colonists are seven times more numerous than the indigenous peoples, and live mainly on the Andean slopes and in the towns. Migrant farmers arrived principally in two periods (PRC 1990: 4f). Between the 50s and the 70s most of the migration was due to socio-political violence, generated in some other rural areas, like the Departments of Boyacá, Tolima and Valle. From the 70s on, the movement was due to a crisis in farm output and by an increase in poor landless rural populations. In both cases colonization was spontaneous. For the colonists the situation was relatively difficult. They came from different natural environments and applied techniques developed for other ecosystems. Besides, the new areas lacked infrastructure and roads and in many cases they came in the hope of finding fertile lands. But in fact, forest soils are mostly poorly usable for agriculture (PRC 1990: 5,51f).

In the very South of Colombia one finds the so-called Amazon Trapeze of Colombia. It gives the country its only access to the Amazon River, which makes it geo-strategically an important region – for the military as well as for the guerillas, the paramilitaries and the drug mafia. However, currently none of the illegal groups is significantly active in the region with own operations, but used as an area used as “safe haven” as well as for trespassing.



Figure 3: Location of the *Resguardo* TiCoYa in the South West of the Trapeze. Note that the territory North of the *Resguardo*, here marked as forest reserve (dark green), became part of the *Resguardo* in 2002. (Source: SINCHI)

3.1.2. Administrative basics of the Trapeze: Overlaps of *Resguardo*, National Park and Municipio

From an administrative point of view several territorial concepts overlap in the Southwestern Trapeze without clear hierarchies. The territory which corresponds to the Colombian Amazon is divided, from an administrative point of view, into the *Departamentos* of Caquetá, Putumayo and Amazonas. The Amazon Trapeze is part of the latter. In its South, the *Departamento* Amazonas is subdivided into the *Municipio* Puerto Nariño in the West and Leticia in the East. Also in the Southwest, the indigenous territory called “*Resguardo Indígena* Tikuna, Yagua y Cocama (TiCoYa) de Puerto Nariño” is located. Most of the *Resguardo* land overlaps with the *Municipio* of Puerto Nariño. However, two communities at the East end inside the *Resguardo* – San Martín de Amacayacu and Palmeras – are part of the *Municipio* Leticia, while the urban center of the *Municipio* – the village Puerto Nariño – is not part of the *Resguardo*. A bit more towards the center of the Trapeze, the protected area *Parque Nacional Natural* (PNN) Amacayacu is situated. The Park has one community – San Martín de Amacayacu – inside its boundaries and a visitors’ and research center, called Yewae, placed at the Park entrance on the Amazon River. Both – *Resguardo* and *Municipio* – reach into the PNN Amacayacu from the Western side, though to unequal extents. Moving more to the West from the Park, a cluster of small *Resguardos* follows, all of them being part of the *Municipio* Leticia.

The region of the *Resguardo* TiCoYa and its overlap with the PNN Amacayacu will serve as the focal area for the following illustration of use and protection dynamics in light of an institutional perspective. The overlap situation of several legal and administrative regimes will be picked up again.

3.1.3. Cultural background and basic economic activities of the inhabitants of the

Resguardo Ticuna, Cocama and Yagua of Puerto Nariño

The “*Resguardo Indígena* Ticuna, Cocama and Yagua (TiCoYa) de Puerto Nariño” is a relatively large *Resguardo* inhabited by members of Ticuna, Cocama and Yagua ethnic groups. Constituted in 1990, it is a relatively newly formed *Resguardo*. The *Resguardo* TiCoYa covers over 85,000 ha of dense tropical rainforest, where an estimated 6,000 people live in 23 settlements spread-out along the Northern bank of the Amazon River. Although nearly all of these communities have a multi-ethnic composition, in most locations the Ticuna constitute the majority, in total representing about 85 percent of the *Resguardo*’s population (Sandt: 137). The Ticuna represent one of the largest ethnic groups in the Pan-Amazon Forest – their current number is estimated at 40,000. Traditionally, they have inhabited a large area populating territories inside the borders of Brazil, Colombia, and Peru. Traditionally, all three ethnic groups, like many other native Amazon cultures, practice a form of slash and burn agriculture in so called *chagras*: *Chagras* are small horticultural fields (1-5 hectares) cultivated and harvested for periods of time ranging from three to five years, and then left to recover. Agricultural production is complemented by fishing and hunting (Sandt 2003: 137). In the past two decades, cultural influences, such as increasing contact with the national government, missionaries, as well as tourists and elements from the drug mafia have stimulated the desire for merchandise and products outside their traditional sphere of production and reproduction, hence the need for money and the preoccupation with production for external markets. However, this is not a new phenomenon in the Amazon. Since more than a century ago, extractive activities – particularly the bonanzas around rubber and coca – have inspired the need for money. However, note that neither gold nor other minerals or oil and gas have been found in the Southwestern Trapeze of Colombia so far and don’t play a role in this region.

The economic activities consist mainly in the use of natural resources. The typical workday is to a great extent determined through subsistence economy in terms of a self-sufficient agriculture, hunting and fishing for self supply. The little surplus frequently is utilized as (little) income opportunity through small quantity sales to other families of the communities. The activity of production verses extraction is to a large extent steered by the hydrological cycle of the river levels (water volumes of the river), which determine the ability to cultivate the *varzea*. This is due to the fact that *chagras* are located in two different ecosystems, the *tierra firme* (mainland) and the *várzea* (flooding plains), which can only be cultivated at certain times of the year.² The expansion or startup of *chagras* is coordinated by the communities themselves and is subject to authorization by the community authorities. However, *de facto* this currently seems to be a matter of nodding through the requests. Activities to gain a monetary income mostly are also based on the extraction of natural resources, either timber, fish (including ornamental fish) or fauna. Also the selling of traditional craftwork is a common activity, though in some communities more than in others. Tourism affects more the activities in the urban area of Puerto Nariño as well as the PNN Amacayacu and has its own dynamics, as most tourists stay in Leticia and only do day trips to Puerto Nariño, the visitors' center Yewae of PNN Amacayacu and, to a lesser extent, into the communities which allow tourist visits. However, most tourists buy prepaid tours and, thus, spend only little money during the short stay in the communities.

² For more details on the cultivation of *chagras* and indigenous modes of production see Acosta 1999, Ochoa 2001, 2006 or Pinilla 2003

3.1.4. How local is “local”

Analyzing the regimes at the local level puts light on a crucial question: how local is “local”. First of all, the term “local” government refers to various governance structures, among them: ‘community’, ‘*Resguardo*’, ‘municipal’, ‘departamental’, and ‘national’ government. In Colombia, the municipal government is not necessarily the citizen’s most important local governance system, because the national and the departmental institutions often have their administrative “*delegacías*” with programs and projects of their own in the towns and villages plus the several military posts. The construction of *Resguardos* as indigenous territorial entities inside *Municipios* represents a parallel territorial layer, mostly without major concern with the geographical borders of the *Municipios*, and both are generally overlapping and exercising State power and providing - or not - public services. Both are considered local government, and hence at times their jurisprudence comes into clash. As a result, due to their logic as political entities, competition to secure and expand their political power in various arenas is part of the overall dynamics. This characteristic is essential to keep in mind when analyzing local institutions and collective action problems involving disperse-living rural populations. In some cases both, the *Municipio* government and the *Resguardo* authorities are located at great distances from the dispersed, small communities, making the indigenous “*comunidad*” with its leaders and informal institutions the most important *de facto* local authority for many issues.

3.2. The *Resguardos Indígenas* in Colombia: Historical perspective and status quo

The genealogy of the *Resguardo* as indigenous land category in Colombia rises from Spanish colonial period and was first introduced in the Andean region in the mid-16th century (González: 32f). It was validated in the Constitution of 1890 recognizing the indigenous communities rights over occupied lands. The 1991 Constitution explicitly recognizes the territoriality and autonomy of *Resguardos*, which received the status of special administrative-territorial entities. It confirms that “the public use properties, national parks, common lands of ethnic groups, *Resguardo* lands, archaeological patrimony, and other properties determined by law are unalienable, imprescriptible and un-embargable” (Chap. 2, Art. 63). A *Resguardo* is conformed by four basic elements: delimited territory, collective property title registered, one or more communities self-identified as indigenous, and an internal organization with its own rules. The law defines the *Resguardo* as a “legal and sociopolitical institution with special character, conformed by one or more indigenous community, with a title of common property enjoy warranties of private property, owning a territory and autonomous organization sheltered by an own indigenous normative system” (Artículo 21 del Decreto 2164 de 1995). *Resguardos* have also been recognized as jurisdictional entities. Their authorities have been granted the power to judge and impose sanctions within their territories according to their own norms and procedures, as long as they are in compliance with the law of the land (Sandt 2003: 129 FN6, Semper 2003: 130f). Hence, Colombian *Resguardos Indígenas* are, regarding the tenure regime, collective property embracing the bundle of rights associated with proprietors, except alienation, giving the inhabitants of the *Resguardo* autonomy and the right of self-governance within Colombia’s legal framework.

In the Amazon Rainforest, *Resguardos* are of rather recent origin. Local indigenous populations, supported by missionaries and anthropologists, first began to articulate demands for recognition of their ancestral lands in the early 1960s, as a response to the advancing agricultural colonization in the region, which began in the late 1950s (Sandt 2003: 128). At first, the Colombian Institute of Agrarian Reform, INCORA³, established these territories under the legal construct of a *Reserva indígena* (indigenous reserve) instead of a *Resguardo*. As a consequence, its inhabitants were not granted full ownership rights but instead a lesser right of simple usufruct (leasehold), and thus were less comprehensive than the *Resguardo*. In 1980, State politics merged those categories of lands traditionally occupied by indigenous peoples under the *Resguardo* category.

Since the Constitution of 1991 recognized *Resguardos* as autonomous territorial entities, a complex overlap of different legal regimes resulted as they were just added to the existing structure of *Departamentos* and *Municipios* as well as National Parks. Additionally, indigenous land rights became increasingly linked with ecological conservation policy and biodiversity protection (Sandt 2003: 129, Semper 2003: 158f). The exploitation of natural resources is subject to all the legal provisions concerning the sustainable management and preservation of natural resources and the environment. In this context, Colombian government has highlighted the affinity and compatibility of the co-existence of National Parks and *Resguardos* in the sense that both legal regimes contribute to protection and conservation of natural patrimony (Arango/Sánchez 2004: 138). The corresponding institutions and the resulting conflicts will play a role later.

³ INCORA was the entity in charge of recognition or amplification of geographic boundaries of the *Resguardos* at the time. Today this is the duty of INCODER.

The *Resguardo* are administered by elected *Cabildos*, which had step by step replaced the so-called *Caciques* in the early 19th century (Sandt 2002: 128). Cabildos are attributed a series of – old and new – public functions. They are responsible for watching over the application of national legal norms and are entrusted with the design of policies and programs for social and economic development in their territories, in conformity with national policies. In line with programs of administrative and political decentralization, *Resguardos* increasingly participate in tax revenues through intergovernmental resource transfers (through law 715), which have been fundamental in enabling indigenous authorities to negotiate development projects with municipal governments (Sandt 2003: 128ff). The internal governance structures of Colombian *Resguardos* differ widely, the specific institutions and governance structure of the *Resguardo* TiCoYa will be outlined in the next chapter.

3.3. *De jure* institutional arrangements governing the natural resources in Colombia and its indigenous territories

Colombia's President Virgilio Barco already appreciated the immense forest and biodiversity endowment of Colombia as a "source of immeasurable wealth" at a meeting of the Presidents of the member nations of the Treaty of Amazonic Cooperation in 1990 (PRC 1990: 2). This presidential position can be seen as one of the key reasons for the recognition of environmental value in Colombia in the Constitution of 1991 and the legal adaptations before and after the Rio Conference of 1992. The natural environment and its resources are alluded in the Constitution of 1991 in more than 60 articles aiming at sustainable development (Bonilla 2004: 154). In order to analyze the use and conservation dynamics from an institutional point

of view, it is necessary to give an overview of the different state entities that play a role in natural resource use and conservation, and what their *de jure* missions are.

3.3.1. Public entities for natural resource management

The Constitution of 1991 was the basis for the Law 99 of 1993 through which the Ministry of the Environment (*Ministerio del Medio Ambiente*, MMA) was created, replacing the former service for forests and renewable resources (*Instituto de Desarrollo de los Recursos Naturales Renovables* - INDERENA). In 2001, the Ministry of Environment became part of the Ministry for the Environment, Housing and Territorial Development (*Ministerio de Ambiente, Vivienda y Desarrollo Territorial*, MAVDT). At the national level, the Department of National Planning, the Ministry of Agriculture and Rural Development and the Ministry of Commerce, Industry and Tourism also have duties regarding forest development and conservation, which can be seen as rather minor compared to the MAVDT. The forestry and agricultural faculties of the various universities in the country, of course, are important actors for forest research and development, too. Generally, technical assistance and research in natural resource management are confined to a public corporation, the National Corporation for Forestry Research and Development (Corporación Nacional de Investigación y Fomento Forestal – CONIF), and to universities. Five research institutes have been founded in 1993 through the above mentioned law, whereof two have relevance for the Amazon Basin⁴: The Alexander von Humboldt Institute was created to promote, coordinate and perform research on the conservation and sustainable use of biodiversity in Colombia in general. The *Instituto Amazónico de Investigaciones Científicas* – SINCHI – has the mission to conduct research in and about the Colombian Amazon Region. The SINCHI has its research center in Leticia, the capital city of the *Departamento Amazonas*.

⁴ The other three are: Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM), Instituto de Investigaciones Marinas y Costeras José Benito Vives de Andreis (INVEMAR), and Instituto de Investigaciones Ambientales del Pacífico

Another category of actors in the context of natural resource allocation are the armed forces of the national State. As mentioned, the Trapeze is a geo-strategically important region, which is why many military and police troops are positioned along the border, specifically along the Amazon River with three control points. Their mission is not directly linked to environmental protection, but obviously, as they are responsible for peace and security, they formally are in duty of ensuring the enforcement of the provisions of the law of the land. The respective roles of the listed entities and actors will be further outlined below where relevant in the context of use and protection dynamics.

Following the calls from the Rio Summit and scientific evidence, many countries have, during the 90s, decentralized their management of natural resources. Obviously, decentralization can be designed in a variety of ways. Colombia has done so through the above mentioned Law 99/1993, placing natural resource management under the authority of 34 regional autonomous public agencies – the so called *Corporaciones Autónomas Regionales y de Desarrollo Sostenible* (CAR). The CARs are public corporate bodies created by article 37 and are responsible for the management and administration of all natural resources in the area of their jurisdiction, including the granting of concessions, permissions and authorizations for forest harvesting (CORPOAMAZONIA 2003: 16). They are also supposed to promote sustainable development in accordance with policies and regulations of the MAVDT and international instruments to which Colombia is a party. However, they cannot provide technical support for applicants regarding management plans. In the *Departamento del Amazonas* together with the neighboring *Departamentos* Putumayo and Caquetá, the CAR in charge is called ‘Corporación para el Desarrollo Sostenible del Sur de la Amazonía’ (CORPOAMAZONIA). The area of jurisdiction of the CARs includes *Resguardos*, thereby severely limiting the authority of the indigenous authorities of the *Resguardo* in environmental matters. It is CORPOAMAZONIA

that is to ensure the conformity of resource use with the rules and regulations of the national State. Thus, this organizations is of extraordinary importance for resource use and conservation in the Colombian Amazon and will play a key role in the analysis of the following chapters. Any matters of concession for commercial exploitation as well as monitoring resource use are a responsibility of CORPOAMAZONIA, so that only the domestic local use of resources within the *Resguardo* can be managed by the authorities of the *Resguardo*, namely the *Cabildo Mayor*.

To understand the character of CORPOAMAZONIA, a closer look at this entity is necessary. As mentioned, the CARs are regionally organized and each one is autonomous. CORPOAMAZONIA has two representatives of the indigenous population on its board of directors along with three governors (of the three *Departamentos* of its jurisdiction), two representatives of the *Alcaldes* of the *Municipios* under its jurisdiction, one representative of the environmental ministry MAVDT, one representative of the President of the Republic, two representatives of the private sector, and four representatives of non-profit organisations which focus on environmental issues (research institutes, universities, or NGOs).⁵ The board of CORPOAMAZONIA meets in Mocoa, the administrative center of the *Departamento* Putomayo, which is quite far from Leticia. The representatives of the indigenous population are not necessarily from the Trapecio Amazónico. Currently the two representatives come from the other two *Departamentos*. There are rumors that the levels of corruption in Putomayo and in Caquetá are very high. The Director General (*Director General*) of CORPOAMAZONIA, who is the legal representantive of CORPOAMAZONIA and its first executive authority, lives in Mocoa and comes to Leticia only very rarely. There are three regional directors (*direcciones territoriales*), one for each *Departamento*. There are also rumors that the current regional director of CORPOAMAZONIA in Leticia is part of a corruptive clique within government and other public entities that are said to informally

⁵ For more details on the organigram see http://www.corpoamazonia.gov.co/Quienes_somos/Cdirectivo.htm

“lead” the *Departamento Amazonas*. In this “landscape” the indigenous population of the *Departamento Amazonas* has almost no power of negotiation within CORPOAMAZONIA.

CORPOAMAZONIA manages not all natural resources of the region, so that institutional issues become more complicated. Aquatic resources are under the jurisdiction of the *Instituto Colombiano de Desarrollo Rural*, INCODER. This entity is, different from the CARs, subordinated to the Ministry of Agriculture and Rural Development (Ministerio de Agricultura y Desarrollo Rural) and has already been mentioned in the context of recognition and amplification of *Resguardos* as it is the successor of INCORA.⁶ When INCORA became INCODER, it was also merged with the Instituto Nacional de Pesca y Agricultura, INPA. INCODER is centrally organized, having its headquarters in Bogotá and maintains regional offices. So far about the entities with a mission to manage sustainable use of natural resources.

How about resources in conservation units? An important institution with a conservation mission is the *Sistema de Parques Nacionales Naturales* (SPNN, National Nature Park System). It embraces all National Parks and is headed by the central entity *Unidad Administrativa Especial del Sistema de Parques Nacionales* (Special Administrative Unit for National Parks, UAESPNN). UAESPNN has its residency in Bogotá and is a department of the Ministry of Environment, Housing and Territorial Development (MAVDT) with a certain administrative and financial autonomy. It is charged with the management and administration of the National Natural Park System and the coordination of the *Sistema Nacional de Áreas Protegidas* (National System of Protected Areas, SINAP), which includes not only public protected areas (national, regional and local), but also private (individual and community) conservation initiatives. Among its functions, UAESPNN is responsible for proposing and implementing the policies, plans, projects, norms

⁶ The land reform institute INCORA was merged with the Instituto Nacional de Pesca y Agricultura, INPA, to constitute INCODER in 2003.

and procedures related to areas in the National Natural Park System and to contribute to the development, consolidation and coordination of the National System of Protected Areas.⁷ Each National Nature Park (PNN) has its own local authorities, which are supervised by the head unit UAESPNN.

Additionally to the mentioned entities, Colombia has installed several environmental bodies with coordinating functions such as the *Sistema Nacional Ambiental*, SINA (which integrates the *Ministerio de Ambiente, Vivienda y Desarrollo Territorial* (MAVDT), the Autonomous Regional Agencies (CARs), the territorial entities and the five Institutes of Investigation assigned and linked to the MAVDT) and the *Consejo Nacional Ambiental*, which has the mission to assure the interministerial coordination in the public sphere of the policies, plans and programs regarding natural resources on the national level.

3.3.2. Environmental legal framework in indigenous territories

Resguardo communities are granted *full and exclusive* ownership rights to the renewable natural resources within their territory through the Constitution and Constitutional Court Rulings (Sandt 2003: 139).⁸ But *de facto* their self-governance regarding natural resource use is limited and remains mainly under state tutelage. In fact, *Resguardo* communities collectively hold only *de jure* access, withdrawal and exclusion rights while they share management rights with CORPOAMAZONIA, the *Municipios* and the National Park administrations. Obviously, this is a source of potential conflict in light of the indigenous peoples' struggle for sovereignty within their territories. As a rule, resources which are extracted from *Resguardos* may be sold when complying with the set of rules given by the managing authorities of the *Resguardo* and CORPOAMAZONIA – as long as they don't originate from overlaps with National Parks.

⁷ The functions of UAESPNN are assigned and listed in Article 19 of Decree 216 of 2003

⁸ Constitution of 1991, Article 329, and reiterated in the Constitutional Court ruling T380 of 1993.

To introduce the existing *de jure* property rights regime in more detail, the distinction between resource units and resource systems becomes essential, since both are linked to different social institutions. It is the CARs which have to decide how many flow resources may be extracted without harming the stock and its regeneration. However, the rights to use the resource system *in situ* (f.e. through tourism) are to be allocated by the *Resguardo*. The rights to use components of the resource system *ex situ*, i.e. by extraction (e.g. the biodiversity through bio-prospecting), are subject to approval (license or permits) by the *Resguardo* authorities as well as CORPOAMAZONIA or, for aquatic resources, INCODER.

The *de jure* duties to monitor behavior regarding the use and protection of the resource system are allocated to CORPOAMAZONIA and the police. But *de facto* there is a severe lack of forest law enforcement and transparency in the application of laws that deal with forest management as will be further discussed in the next chapter. The armed conflicts of the country are only one reason that there is little long-term management of or control over resources. Generally, State entities appear to be under-equipped and unable to maintain an effective presence in the field. *De facto*, local populations and their local institutions as well as local and international NGOs play an important part in monitoring resource use and forest development. This became very obvious in 2002, when local people observed the illegal extraction of timber (worth about 100.000 EUR) and where it was extremely difficult to convince State authorities to investigate, with the exception of the authorities of the PNN Amacayacu. The case is known as “Caso Cabimás” and will be outlined in the context of illegal resource extraction alliances below.

For now it is noteworthy, that the monitoring of behavior involves major costs which are *de facto* left to the communities without compensation. The Cabimás case reveals, that the

local indigenous communities seem to be the only ones to have an intrinsic interest to protect the resources. They fulfill *de facto* the function of monitoring even though they would never be allowed to extract such immense amounts of timber.

Coming to legal resource use, there are two categories in the laws and decrees: “uso doméstico” (domestic use) and “uso comercial” (commercial use). The *Resguardo* authorities are sovereign within their territory to establish its own regulations for *uso doméstico* of the flows as long as they maintain the resource system. But an array of heterogeneous communities lives inside the *Resguardo*. They often have their own institutions to administer natural resource unit appropriation. Cooperation between both levels is not necessarily easy. This is particularly relevant for the *Resguardo* TiCoYa de Puerto Nariño consisting of 23 communities from three different tribes. The communities are often not consulted, if the *Resguardo* authorities issue permits for resource extraction on their community territory, even though they bear the short term opportunity costs (use by community members), neither does the community receive any compensation.

In principle, commercial use of resource units from the *Resguardo* territory outside its limits remains subject to permission through CORPOAMAZONIA. Actors wishing to use natural resources for commercial purposes have to formally demonstrate (requiring complex management plans) that the extraction activities would not harm the stock. At the end it is up to CORPOAMAZONIA to decide, if it allows the extraction or not. The only exceptions are aquatic resources as they are managed by INCODER. For commercial fishing INCODER does not require management plans related to concessions, but has established general rules. Fish extraction will not be in the center of the analysis in the following chapter but will be picked up in an excursus.

3.4. Land tenure regimes in the Southwestern Amazon Trapeze of Colombia: Overlaps in historical perspective up to the status quo

The overlapping territorial entities *Municipio*, *Resguardo* and National Park already have been mentioned. But it already goes back to 1959 that Colombia's Amazon territory became divided into three zones designated for different uses. The entire region of the Colombian Amazon Trapeze – before classified as *baldías* zone (without owner) – received the status of a so-called *reserva forestal*, a forest reserve for limited resource use under State rule (legal frame was the law 2ª/1959 together with the decree 111). On the basis of the same law, in 1975 the National Nature Park System (UAESPNN) authorities demarcated an area of 293.500 hectares to create the Parque Nacional Natural (PNN) Amacayacu in the center of the Trapeze (legal frame was again law 2ª/1959, artículo 13, together with the decrees 2811/1974, art. 328 and 622/1977). To maintain the park, a park administration was created. The park administration up to today maintains two offices, one at the Park entrance at the Amazon River and another one in the town Leticia. The rest of the territory remained a *reserva forestal*, where resource use was limited though allowed via licensing.

The village Puerto Nariño, is much older and appears on maps originating back until 1936 in the context of rubber extraction, nonetheless in most documents it is assumed that it has been founded in 1961 when *colonos* settled for extracting timber, animal skins and ornamental fish. In 1984, the *Municipio* Puerto Nariño was created (decree 106 of January 18th of 1984) with an extension of 1704 square kilometers, located 87 kilometers of the municipality of Leticia at the mouth of the Loretoyacu River.

In the year 1990, as mentioned above, the entity in charge for recognizing and demarcating traditional land of indigenous, INCORA (Instituto Colombiano de Reforma Agraria), recognized a territory of 868 square kilometers as traditional territory of the indigenous communities of the tribes Tikuna, Cocama y Yagua of the area, and constituted the *Resguardo* Tikuna, Cocama y Yagua (TiCoYa) de Puerto Nariño. This area embraced about one half of the *Municipio*, excepting the urban center Puerto Nariño and the large and resource rich area in the North of the *Municipio*, which – as *reserva forestal* – was designated for commercial resource use, particularly timber extraction.⁹

In 2002, the commercial logging zone in the northern part of the *Municipio* Puerto Nariño was reaffirmed.¹⁰ Only one year later, the *Resguardo* was amplified and the complete commercial logging zone became part of the *Resguardo* through recognition by the Ministry for Domestic Affairs.¹¹ The amplification had to mayor effects: First of all the local government of the *Municipio*, the Alcaldía, – which had been in the hands of settlers – lost its benefit from complete jurisdiction over a valuable territory and henceforth had only the urban center of Puerto Nariño left under its complete jurisdiction.¹² Second of all, five long term permissions for commercial logging, which had been issued shortly before the amplification to large scale logging companies from Leticia and Bogotá (valid until 2006, one even until 2010) were up for dispute. Both aspects are a source of conflict up to today as illustrated below.

9 The legal details were established through *Resolución No 021 del 13 de marzo de 1990, República de Colombia, Ministerio del Interior*. The fact that the *Resguardo* exceeds the *Municipio* Puerto Nariño and includes two communities, San Martín de Amacayacu and Palmeras, which lie in the *Municipio* Leticia, has already been mentioned above.

10 Through the document *2100 2 0211 de abril 4 de 2002 del Ministerio del Medio Ambiente en respuesta a la solicitud de la Defensoría del Pueblo*

11 The legal details were established through *Resolución No. 024 del 22 de Julio 2003, Ministerio del Interior, República de Colombia*

12 For a complete picture: A very small area of national strategic importance at the Southwest corner of the Trapeze, the so called *Inspección de Policía in Atacuari*, also remains to be outside the *Resguardo* and inside the *Municipio*.

The historical path of change of the *de jure* land tenure regimes, hence, has established a situation in which, firstly, the *Resguardo* TiCoYa overlaps with the *Municipios* of Puerto Nariño and Leticia, secondly, the former commercial logging zone with its valid logging permissions conflicts with the *Resguardo* regime, and, thirdly, the *Resguardo* overlaps with the PNN Amacayacu. For those areas of overlap, the institutions of either one applies, depending on the action in question. Moreover, the borders of each territorial construct are unclear, as they were generated on the drawing board. This is particularly problematic as in some cases opposing concepts, like former commercial logging zone and National Nature Park, clash. The tributary stream Cabimás, which merges into the Amacayacu River to go down to the Amazon River, forms the border between commercial logging zone and PNN Amacayacu, but at its origin it is very fragmented leaving the border line up for dispute. All those overlaps of land tenure regimes – each with its own institutions and authorities with specific interests leave behind a territorial chaos about which *all* interview partners complained.

Summing up the presented property rights structure, the construct of many competing and conflicting *de jure* property rights regimes which are rather weakly enforced, together with an observed overuse of natural resources would, in much of the literature, lead to the conclusion of a *de facto* open access regime. However, a closer look reveals that access is not at all “open” to everybody but there are many usurped *de facto* and often brutally enforced property “rights” – or “wrongs” –, which will be in the focus of the next chapter.

4. HOW MULTIPLE SOCIAL SYSTEMS INFLUENCE NATURAL RESOURCE APPROPRIATION: ANALYSIS OF THE STATUS QUO IN THE SOUTHWESTERN COLOMBIAN AMAZON TRAPEZE

4.1. Introducing the action arenas

The massive and illegal extraction of natural resources from the Colombian Amazon attracted national publicity through the case of Cabimás (“caso Cabimás”) of 2002. The discovery of 167 containers full with timber cut without concession – and an overall estimated value of 300 million pesos (about 100.000 euro) – was a small success in the sense of finally putting nation-wide attention to the illegal and clandestine timber extraction in the Colombian Amazon.¹ Members of the community San Martín de Amacayacu found the timber in the northern part of the PNN Amacayacu, where the park overlaps with the *Resguardo* TiCoYa, at the side of the Cabimás River, a tributary of the Amacayacu River, itself a tributary of the Amazon River. After the discovery it took the indigenous authorities five months to convince CORPOMAZONIA to order a formal inquiry. At first, police and DAS (*Departamento Administrativo de Seguridad*) functionaries, then resisted the order and argued that it would be impossible to remove the illegal logs due to the supposed presence of armed guerilla forces in the region. After extensive public pressure initiated by media reports, finally an investigation team consisting of *Resguardo* representatives, park representatives, CORPOAMAZONIA, police and army entered the site and confiscated the logs.

The case of Cabimás and the reaction of the state authorities deliver a rough insight into the problem and its dimension. The question is not simply why the participants took so long to take action against the illegal activities, but rather what are the underlying structures

¹ Note again that the focus of this chapter is on forest use and deforestation. Since commercial timber use is the main cause of deforestation in the region (and not so much cattle ranching or agriculture), the use and protection dynamics will be illustrated mainly referring to timber. However, when relevant, reference is also made to fish catching, tourism and other forms of resource use in forests is provided.

of this problem. The case will be analyzed more extensively later on, but currently provides a basic glimpse into the overall situation, which is characterized through informal and illegal resource use.

The branching of the Amazon River into the *Resguardo* TiCoYa plays are an important factor for the dynamics and drivers of exploitation as well as for the existing barriers to access (see figures 4 and 5). No roads exist, neither between villages nor towards urban centers. For the extraction of forest products from the resource-rich area in the North of the *Resguardo*, boats are the only means of transport.

There are mainly two ways of access to the territory entering from the Amazon River: either through the Loretoyacu (also Loreto-Yacu) River or through the Amacayacu (Amacayacu) River. There is no direct river access to the *Resguardo* coming from the North. The village in the very North of the *Resguardo*, Buenes Aires, can not be accessed by boat from the other villages.² Going up the Loretoyacu River, one enters only the lower Western part of the *Resguardo* and on the way, after passing nine villages³ at the river bank, crosses borders with Peru before the river breaks into small tributary streams in Colombian territory.

Going up the Amacayacu River, one passes a cabin of control of the PNN Amacayacu (currently staffed with basically one Park employee, who originates from one the indigenous villages inside the Park), which is located near the river mouth to the Amazon River, and afterwards only one community – San Martín de Amacayacu. The Amacayacu River runs deep into the center and northern part of the *Resguardo* and gives access to the PNN Amacayacu.

² For that reason, some of the log is extracted northwards via the Cotue River to Tarapaca at the Putumayo River, the town in the North of the Trapeze (see map on p.48). However, the situation in and around Buenes Aires cannot be discussed here, as the researcher had no opportunity to visit that area and information was too scarce for reliable conclusions..

³ San Francisco, Neuvo Paradiso, Santa Teresita, San José, San Juan del Soco, Doze de Octubre, Puerto Rico, Santarén, San Pedro de Tipisco (in order of the course of the river coming from the Amazon River)

Traveling up the Amacayacu River, one also passes the designated zone for logging for “domestic use” use within the *Resguardo*. Via tributary streams, one then enters either the PNN Amacayacu territory or the former *reserva forestal* (the former commercial logging zone), which since 2003 is part of the *Resguardo* and for which the disputed long term concessions had been issued by CORPOAMAZONIA in 2002. However, the tributary streams only carry enough water during the high water season to ship timber from some of the area, which is why sometimes the logs are stored where cut and shipped out when the river carries enough water.⁴ Given that the Amacayacu River allows to enter much deeper into the *Resguardo*’s Northern forest and only passes one more village, it is more attractive for illegal transports than the Loretoyacu River. Additionally, it gives access to the *reserva forestal* and the PNN Amacayacu – and once the extracted timber is loaded on a boat, it is hard to identify its origin. As mentioned, the Amacayacu River also was the route for the logging activities in the case of Cabimás.

Another important aspect for the action arenas are the mutual prejudices between settlers and indigenous people in the region. Since the recognition of indigenous territories took place only in 1991, many *colonos* (Spanish for settlers) have resisted their establishment. Living in the region for several generations, they also claim the right to use the natural resources of the region for their own livelihood. The legal status of a *Resguardo de jure* excludes any non-indigenous people from the use of the forest and its products and, hence, invalidates all related property rights in the territory of the *Resguardo*. Almost the entire area of the *Municipio* overlaps – as pointed out in the last chapter – with the *de jure* regime of the *Resguardo*. Furthermore the indigenous communities claim the town of Puerto Nariño and the

⁴ This explains why such a large amount of timber was found in the case of Cabimás – it was about logs waiting to be shipped out later.

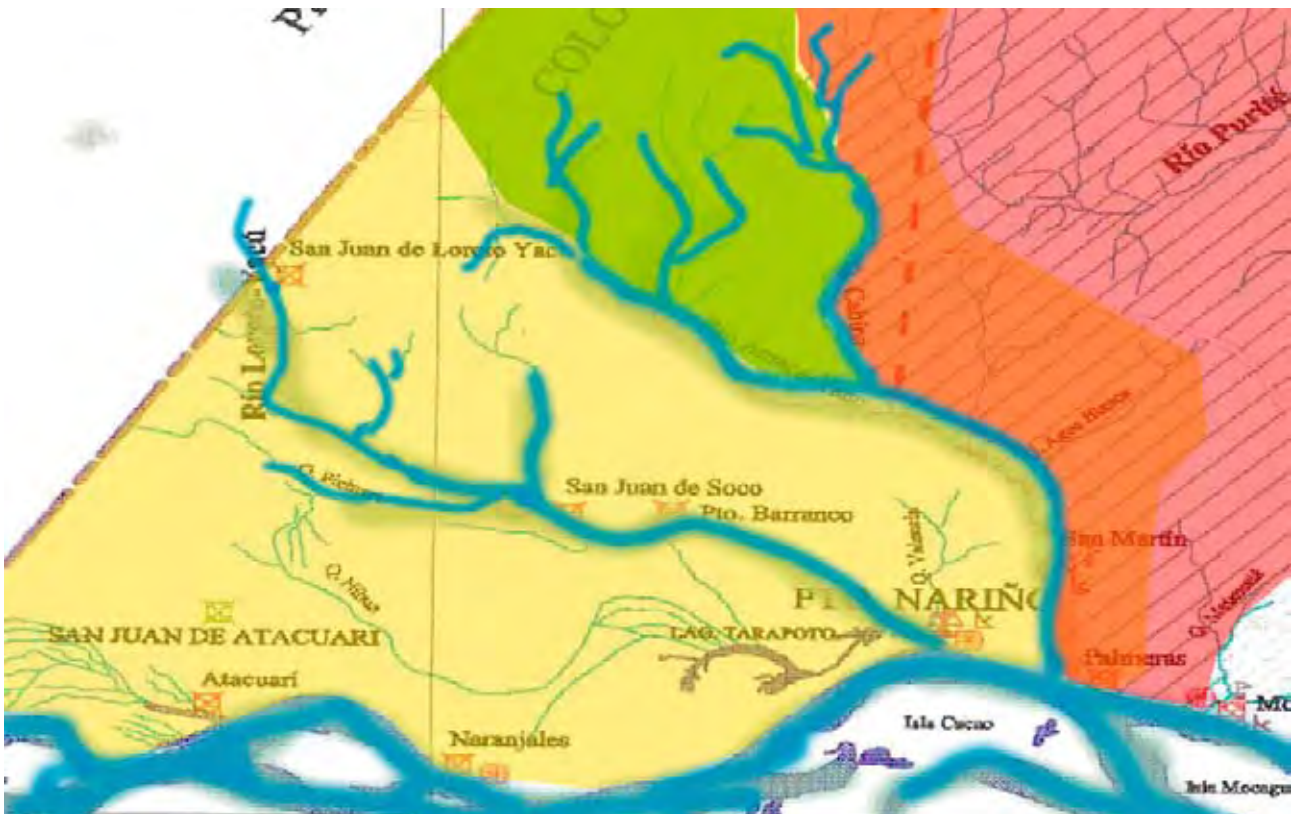


Figure 4: Administrative borders marked by Amacayacu River. (Yellow: *Resguardo*; green: *Resguardo* but former forest reserve; red: PNN Amacayacu; orange: overlap of Resguardado and PNN)

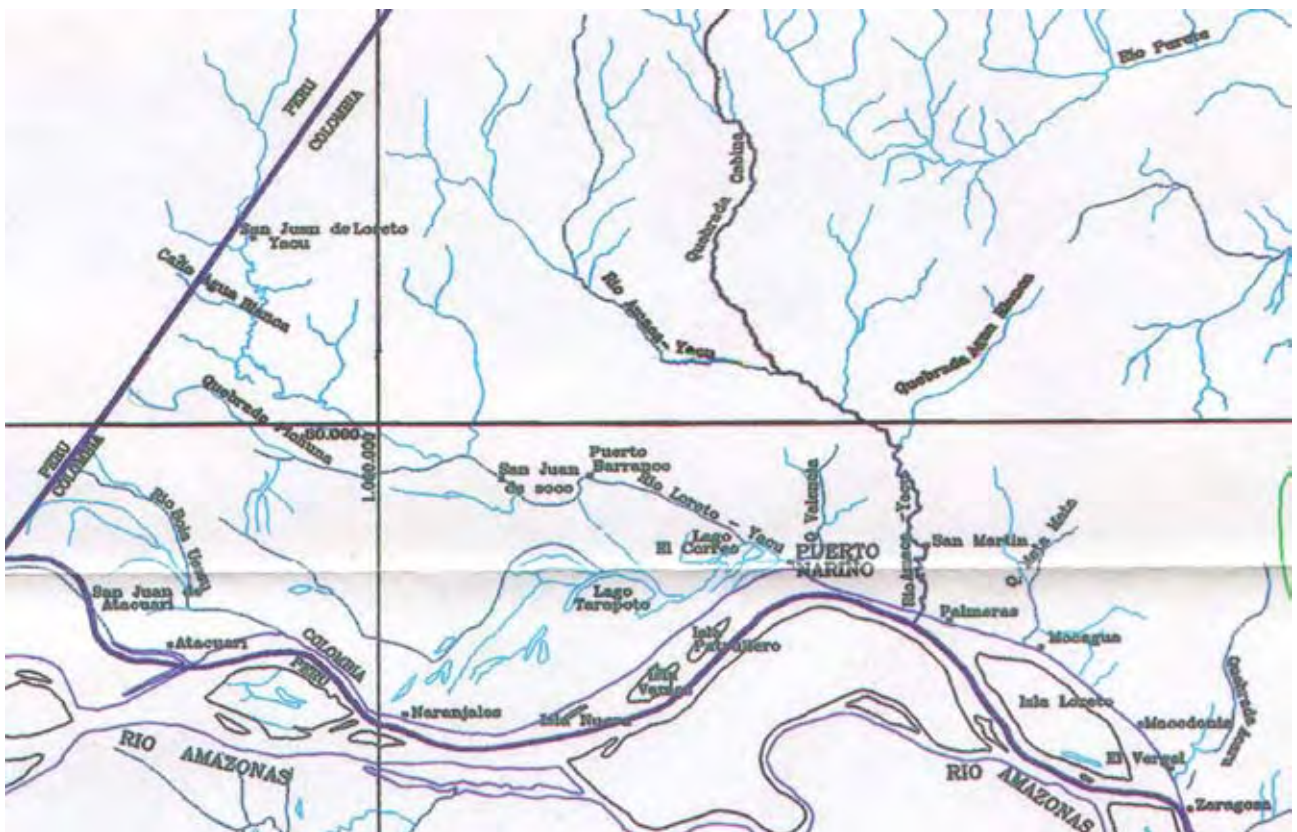


Figure 5: The Rivers Loretoyacu and Amacayacu as way to access the resource rich interior of the *Resguardo* (Source: SINCHI)

entire PNN Amacayacu area as their traditional territory.⁵ At the same time, the inhabitants of the *Municipio* represent a mix of indigenous people and settlers, with the latter now living in Puerto Nariño save for a few settlers who joined their partners in indigenous villages.

One must take into account that *colonos* (settlers) with their families live in small, poor but “modern” family farms, have urban shops or labor as salaried workers, so that they have a preference for monetary income-generating activities and modernization. Private individual property rights are therefore of high importance to them. As a consequence, settlers in the region have the perception of being crowded out and menaced in their income opportunities by the indigenous people in the *Resguardo* upon whom they used to look down. This situation is fostering a widespread felling/conviction/belief/view as part of what has been called “taboo” structure above that it is all right to reclaim part of the natural resources through clandestine activities. The indigenous inhabitants of the region reject this perception, of course, and they view the claims of the settlers as illegitimate. They emphasize that their rights are inherently anterior to the arrival of the settlers and even to Colombian State and, accordingly, are not a gift from the Government but a heritage from their ancestors (Derechos de los Pueblos Indígenas de Colombia, Tomo II: 679f according to Semper 2003: 135). Consequently, they view themselves as local sovereigns also in political matters and do not really accept the Alcaldía as an overarching political entity of the Municipio nor CORPOAMAZONIA for environmental matters, even though by law this organization has management and exclusion rights also in the *Resguardo* territory. These conflicting property rights claims stimulate mutual skepticism and distrust regarding each other. We shall come to this again later.

⁵ That is why they demand indigenous authorities for the park administration (expressed in the Plan de Vida – the indigenous medium-term policy plan – of the *Resguardo Indígena* Tikuna, Cocama y Yagua de Puerto Nariño 2001).

The overarching political role of the *Municipio* government – the *Alcaldía* – is established through Law No. 715. This law regulates that the *Alcaldía* administers the financial resources of the *Resguardo*, which are transferred from the national government to guarantee basic supplies in indigenous territories. Thus, any expense of the *Cabildo Mayor* (the political authority of the *Resguardo*) needs approval by the *Alcaldía*, creating a situation of dependency. This situation allows for abuse by the *Alcaldía* and allows it to interfere with the budget allocation of the *Cabildo Mayor*. The *Cabildo Mayor* has to request the financial resources from the *Alcaldía* by outlining expenses, accompanied by a detailed cost projections. Only then can the *Alcaldía* approve the plan and release the resources or reject the plan because of inaccuracies and hold back the resources. The *Cabildo Mayor* complains that financial resources, as a consequence of that setup, are very often not available when needed. One example is the project “Organización de un oficina propia del *Cabildo*” of 2004, intended to construct an office building for the *Cabildo Mayor*. The *Cabildo Mayor* had to wait until 2006, working on a little boat without computers or copy machines, thus making it difficult to prepare accurate project schedules and cost plans. The project was delayed for such a long time since the financial resources were not released.⁶ This status quo of a fragile infrastructure benefits the supremacy of the *Alcaldía* compared to the *Cabildo Mayor*. Taking into account that the *Alcaldía* staff consists almost entirely of settlers who fear losing their influence in the region through the *Resguardo* and its further extension, this fact gains political importance.⁷

The weak position of the *Cabildo Mayor* has significant consequences for the use and protection dynamics of natural resources in the *Resguardo* territory. *De facto* resource use is rarely coordinated on the part of the *Cabildo Mayor*, and the same applies to the enforcement

6 This situation was criticized in the meeting of the *Cabildo Mayor* on the 14th of July 2004

7 This is due to the fact that the majority of the voters are settlers from the urban center, because the indigenous people largely boycott the elections for the *Municipio* government. They currently perceive the *Alcaldía* as an entity in the hands of settlers and the territorial concept of a *Municipio* as in conflict with the *Resguardo* figure. Hence, to a large extent they do not participate in the elections for the *Alcaldía*.

of rules of the *Resguardo*. Frequent patrols were even impossible in 2004, since the *Cabildo* neither had a boat for controls nor possessed walkie-talkies or GPS equipment to, for example, guard the Amacayacu or Loretoyacu River, which are the rivers to access the forests of the *Resguardo* TiCoYa from the Amazon River. The reason was that the *Cabildo* could not get its project plan approved by the Alcaldía.⁸ Law 715 allows and facilitates such misuse.

Concluding the relation between *Cabildo Mayor* and Alcaldía, there clearly is a struggle for competence and authority between the two. Generally, the *Cabildo Mayor* demands to be recognized as a territorial entity with the status equivalent to a *Municipio*, giving it full sovereignty regarding financial resources, and exclusive rights over resource administration. The Alcaldía staff has the law on its side and believes that the *Resguardo* authorities do not have full capacity to manage funds and thus view themselves as necessary to assure an adequate use of the funds and to help the *Resguardo* in this regard. Acting as guardian on financial matters, stimulates the taboo on the side of Alcaldía staff to perceive the indigenous population as backward, underdeveloped and rightfully under a certain tutelage. Moreover, this legal setup is fostering the taboo of needed modernization in a markedly non-indigenous way. Consequently the *Cabildo Mayor* depends on the goodwill of the Alcaldía and this dependency gains relevance in light of the property rights structure in the next sections of this chapter, as political influence secures access to property rights, the corresponding benefit streams and the enforcement mechanisms. The Alcaldía is a key entity advocating and acting in favor of the settlers and keeping the *Resguardo* institutions fragile. Thus, as long as the *Municipio* as institution is overarching the *Resguardo*, the settlers can to some extent count

⁸ The Alcaldía required modifications over and over again as they rated the plan as too imprecise according to the Coordinador Ordenamiento Territorial, the member of the *Cabildo Mayor* responsible for regional planning, of the *Resguardo Indígena* Tikuna, Cocama y Yagua de Puerto Nariño (interview on July, 15th 2004)

on a more easy backing of their – *de facto* or *de jure* – property rights regarding the use of natural resources.

CORPOAMAZONIA is another organization overarching the *Resguardo* institutions. Normally, its employees stay in the region only for a limited time. Their relation with the indigenous communities is branded through difficulties with mental maps and taboos similar to the ones of the Alcaldia staff and even more remote systems of reference and identification – as will be picked up extensively in the next section. To complete the introduction into the action arenas and their actors, it is noteworthy that the Colombian National Ministries do not have own delegations in the region, but are present through their somewhat autonomous agencies, like CORPOAMAZONIA for the Environmental Ministry MAVDT and INCODER for the Ministry of Agriculture and Rural Development (Ministerio de Agricultura y Desarrollo Rural).

In a country with deep, violent conflicts like Colombia, the roles of the military, the police, the *narcos*, and the guerilla complexes cannot be ignored. For the Southwestern Amazon Trapeze of Colombia no active guerilla fights currently exist. However, the region has importance for the guerilla as it finds itself on the long slopes of the Andes and thus is used as “sanctuary” (safe haven) and for passing to enter or leave the conflict areas more to the North. This also applies to the narcotics complex, which, too, has no massive activity at the moment but also trespasses and is in need for “sanctuary” locations. Both the guerilla and the narcotics collectivities have clandestine structures, with high parameter values in the preference function for protecting income generation, power, political influence and logistical matters. Additionally, the narcotics complex is backed by their international connections linked to the global marketplace. Both guerillas and narcos are of course, clandestine so that outside

observers also Colombian academics have little or no insight into their operations and even less so into their power and money.

The military and the police have fixed posts along the Amazon River where every boat must pass when going down river towards Leticia or up to Iquitos in Peru. There are military bases and police stations in Leticia and Puerto *Nariño*, at Atacuari (a town at the South-Eastern corner of the Trapeze of Colombia) and at half way between Leticia and Puerto *Nariño*. The number of police and military troops, in the region has a very high level due to the strategic importance of the region. In Leticia, one can observe a military vehicle passing almost minute-by-minute through the village. However, as there are no active guerilla activities, their role is rather narrowed to assuring the actual state of security and peace in the region due to their presence and watching for trespassers. "Plan Colombia" and other national policies to fight *narcos* and *guerilla* did not have a visible profile in the Southern Trapeze during the field research. However, there are several police and military posts in the region, so that their troops most likely have a good overview about illegal resource extraction activities. But as they see their duty in such outstanding, lofty issues like assuring national security and peace and fighting drug trade, they can easily ignore illegal resource extractions without acting against orders. Hence, they do not take initiatives to use force against those activities and do not generally develop mental maps and taboos among their staff against covert participation in clandestine extraction activities by covering those actions and eventually benefiting from the related side-payments.

Excursus: Fish – resource without borders

Fish is one of the resources that strongly exhibits overuse symptoms in the Amazon River and its tributaries. A good indicator for this overuse is the ever shrinking size of the

fish sold at the markets. According to the research institute SINCHI, more than 40 percent of the sold fish do not comply with the legal minimum size set by INCODER, endangering in particular the species Dorado, Lechero and Pirarucú (SINCHI 2000: 209).

Because of the decreasing resources it becomes more difficult to catch fish. Small nets with rather wide meshes have traditionally been in use for individual fishing for the domestic market, but nowadays large nets with finer meshes have increasingly come into use for commercial fishing, even though in that region, commercial fishing with large nets is restricted by INCODER and forbidden by the *Resguardos* in their respective territories.

Colombia has jurisdiction over a relatively small span of the river (about 100km). It cannot be emphasized strongly enough, that any management in one country will be useless without harmonization and collective legal action amongst the three countries. At each border, the jurisprudence of the respective state institutions ends, unless bilateral or multilateral agreements exist. For example, fish is only allowed to be caught in Colombia when exceeding a certain size, which is set in accordance to the so-called "Maximum Sustainable Yield" principle. Those minimum sizes in many cases differ in the three countries, so fishermen can always pretend to have appropriated the resource units in the country with the lowest standard. Consequently, perpetrators quickly enter a different country just by navigating the boat to the other side of the Amazon River. Fish is transported on the river, and since there is no tag of origin, minutes after being on the river, only the appropriators themselves know their origin. Appropriators from the three countries can enter and leave fishing spots mostly without border control. It is worth reiterating that harmonized standards could help to lower this effect. However, for the time being fish is imported and exported between the three nations largely without effective control and registration as the true origin currently cannot be

identified. This entire constellation of little border control, quick border jumps and different laws in the three countries makes enforcement of Colombian law difficult.

Another important aspect is the underlying taboo structure of the Colombian fishermen's collectivities. Peru and Brazil have very weak regulations on fishing and at the same time subsidize the sector. In Peru, fishermen received support under Fujimori for infrastructure investments (boats and nets), as gifts around elections. In Brazil, registered fishermen receive an income subsidy from the government during the low-catch months. Consequently, Colombian fishermen see themselves as not having enough government support so that they feel entitled not to respect INCODER's regulations.

Furthermore, at the triple borders, each entrepreneur has quick access to three different markets with different demand structures. Colombia for example has a high demand on certain types of Amazon fish, namely those without scales. In contrast, Brazil and Peru don't share that preference. Since Colombia controls only a relative short span of the river, it is quite attractive for Colombian firms to invest their capital in Brazilian fishing companies. These fish in the Brazilian side of the Amazon River, a jurisdiction that is by far larger and has lower standards. The investors then commercialize the fish on Colombian territory, both at the fish market of Leticia and for export nationwide.

Putting together the puzzle with the perspective of the tripod model, the illegal fishing is the expected outcome: the taboo structure among Colombian fishermen gives ground to covert activities, police control as the only mechanism for rule enforcement is hard to realize and Colombian as well as neighboring markets have a high demand and are easy to access. Taboo, force and money as allocation means play in favor of illegal fishing as well as fish-selling activities in the Colombian region, making overuse symptoms plausible.

4.2. **“Covert alliances”, pseudo-environmental state agencies and the “frontier myth”**

Illegal logging is a pervasive problem in the Colombian Amazon, causing enormous damage to forests and to the indigenous peoples. The World Bank estimates that 42% of logging operations are illegal in Colombia.⁹ The situation in and around the *Resguardo Indígena* TiCoYa de Puerto Nariño is one of selective logging rather than clear cuts. However, even selective logging can be rather large scale and, thus, is highly destructive, with serious implications for the ecosystem and the local communities.

The problem of large scale illegal logging occurs mainly in the North of the *Resguardo* and the *Municipio* respectively, where the former *reserva forestal* with its logging concessions was later recognized as *Resguardo* territory. Part of that activity is linked to the timber firms who acted more or less legally in the *reserva forestal* before 2003 and since the amplification of the *Resguardo* have continued their work with the help of clientelist networks - since there logging permits are put on hold until they have negotiated a compromise with the *Resguardo* authorities (which they refused to do up to date). Additionally, there are those timber businessmen who have always acted illegally operating at the local level, constituting institutionalized sets of relationships that operate outside legal norms. What then are the drivers of illegal logging activities and how is it possible that they can always build on enough helpers to realize the extraction? This section examines which actors participate in these alliances and explores the institutional arrangements and taboo structures as well as the associated collectivities.

9 For more details visit “World Bank/ Forests and Forestry”: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTARD/EXTFORESTS/0,,contentMDK:21055716~menuPK:985797~pagePK:64020865~piPK:149114~theSitePK:985785,00.html> (accessed: 19th April 2008)

4.2.1. “Covert extraction” driven by clandestine outsiders as *ex-situ* user collectivities

The origins of logging in the Amazon Trapeze can be found in the interest of certain parties in the large benefit streams connected to extraction activities from the rainforest. It is a truism that a region covered by primary tropical forest with all its valuable natural capital and immense environmental wealth attracts outside actors. “*Ex-situ*” users are understood as outside exploiters of natural resources offering money to inside individuals. They deliver to non-local markets, especially demand on the national and global markets. Those *ex-situ* users are often well organized and mostly launch rather large-scale operations.

The most important aspect of *ex-situ* user collectivities is the economic interest as driver. They view natural resources as assets that can be transformed into monetary income. Some timber species like cedar wood are very valuable assets as they yield high-income streams relying on high demand on national and international markets. Therefore they are attractive for extraction. At the same time, those valuable natural resources are almost always protected by *de jure* property rights regimes which restrict extraction to a limited user group and a limited use, which is why *ex-situ* users very often act as looters and consequently rely on clandestine networks for their covert operations. Even though they do not hold *de jure* property rights, in many cases these actors dispose of *de facto* property rights as the “collectivities” standing behind them are able to utilize very effective mechanisms -- money (through corruption mechanisms) and the use of force -- to secure resource appropriation by alliances of actors on the prowl. These alliances may include judges, public employees and gunmen tied together by corruption (money), force and often also by common taboo elements.

The *ex-situ* users' internal logic is geared to two main variables: existence of demand and barriers to access to the benefit stream. The barriers encompass mainly access to *de jure* property rights and barriers of enforcement of the *de jure* property rights including formal protection and conservation rules. The key question is: What barriers to access to the benefit stream exist and how are they bypassed using or constructing alliances of actors or other mechanisms? In this context, two types of bypassing legal rules can be recognized: First, extracting without concessions or any other permit and second, abusing existing concessions for either extraction from other areas than the designated one or for extraction of higher quantities than permitted.

4.2.2. Extraction of timber through the “endeude” mechanism

The timber firms' preferences are to a large extent characterized by the *ex-situ* collectivity attributes. Mostly, the timber firms do not recognize local property rights over forest territory, as they do not allow the local communities to gain a share of the stream of benefits derived from logging. Usually, the businessman from outside the locality employs an intermediary in the region to act as majordomo. The majordomo hires local people to carry out the logging, organizing teams of three to fifty loggers – depending on the scale of logging, including loggers skilled in operating a chainsaw. Large teams usually embrace additional bearers and even a cook; some are from outside the area or surrounding villages.

The large-scale exploitation of timber takes place under different modes of “endeude” relations (in-debt relations), a mechanism that is the typical socio-economic relationship for the Amazon and has been adopted from rubber extraction. This mechanism is still very common, although it has undergone some changes. The “endeude” (known as “aviamento” in Brasil) is an economic relationship consisting of a chain of intermediaries among the big and local

traders, characterized by the delivery of consumption and work tools as advance payment for the extracted products. This chain implies a mutual dependence between majordomo and client and is marked by rather low levels of money circulation. In most cases, the client is in debt – often permanent debt or debt peonage – to the majordomo because of high monopolistic prices for merchandise and low monopsonistic prices for extracted products. By joining a logging team, villagers became clients of the majordomo who provides and advances the resources for logging operations. Before the logging team goes to the forest, they take money from the majordomo to pay for their expenses in the forest and for their family needs. This money forms a debt that must be repaid according to the amount of timber to be cut. The income of the loggers, bearers, raftsmen and others depend on this quantity. After felling the trees, loggers cut them into planks on the spot. Through this method one third of the wood is lost. Then, the bearers carry the timber down to the river, where they either gather the wood until the water level of the river rises or load it directly on boats to bring the wood down the river. Frequently they knock down any tree that is in their way down to the boats, not considering its rarity, quality or cultural value. “Often they knock down a tree of higher quality when it would be easily avoidable”, iterated a member of the researchers’ working group in San Martín. The researcher himself participated as observer in two missions into the forest for timber extraction and personally watched the immense damage made to surrounding trees due to this rather arbitrary lumbering and the large amount of wood lost from each log. Since the endeude mechanism, characterized by a debt position of the client at start, allows the majordomo to keep payments to the clients at a very low level so that there is an inbuilt incentive for rather desperate logging activities

In informal talks the researcher was told that in many larger, covert missions, also indigenous individuals participate as carriers or helpers. But why do indigenous individuals

participate, even though their thinking can be expected to be in conflict with the preference structure connected to the *ex-situ* user collectivity? Recalling Stadermann's tripod model of allocation means and mechanisms, it can be said that the two actors have different taboos in their preference function, thus, have different preferences, but force and money can overcome the taboo barrier luring indigenous people into the illicit trade. After all, "development" is on their mind, too, of course. Also the family is the dominant collectivity nearly everywhere in the world and all family members need money. So the participation in that alliance by the indigenous individual is quite plausible considering that force and money as allocation means in this constellation gain priority over conflicting taboos in the mind of individuals.

Natural resource extraction operations indirectly employ a wide range of other persons, from the boat operators taking logging teams up-river, to mechanics and motorcycle vendors. In this way, indigenous as well as other individuals can make a living from those activities. Since alternative income opportunities are scarce in the *Resguardo*, a majordomo can always count on finding a handful of indigenous helpers at the locality. At the same time, there are rarely any effective means in place to sanction such behavior, neither formally from the side of the indigenous or the municipal authorities, nor informally from side of the indigenous fellow tribesmen. Thus, a crosslink between the *ex-situ* user and indigenous individuals occurs because of economic incentives, missing alternative income opportunities and missing sanctioning mechanisms for transgressing indigenous inhabitants of the area. Such crosslinks constitute alliances between actors who extract natural resources with the help of clandestine networks and through illegal operations.

4.2.3. “Covert alliances” for large-scale extraction

The “covert alliances” driven by businessmen usually embrace what is necessary to extract the timber and then bypass all barriers to enter national or international markets. Hence, forestry staff, policemen, military staff and other local functionaries participate as well as guerilla and narco individuals. After 1990, when the indigenous communities started to get organized and began to set up *Resguardo* institutions, it grew to include indigenous leaders and village heads.

Since legal and open ways to extract timber are so complex, complicated and costly, illegal operations for extraction are much more attractive – if a covert alliance can be arranged to support and cover the activity. What are the barriers to extract timber? For extraction from the resource-rich area in the Noth of the Resguardo or PNN Amacayacu respectively (including the overlap territory), businessmen need to employ workers who enter and leave the site by boat, passing the PNN Amacayacu cabin of control on the Aamacayacu River and a military post on the Amazon River. Boats carrying illegal timber often have some documents pretending the legality of the load, which need to be obtained in advance. Also, local leaders usually have wide networks of informants, which is why they are a potential danger to uncover illegal operation, so they should be convinced to cover the action. This already gives an idea of the potential participants of alliances of large-scale timber extraction: Not only businessmen and their net of local workers (settlers or indigenous individuals), but persons in strategic positions need to be drawn into the alliance.

Hence, illegal logging operations are realized with the protection of “backers” within the state apparatus, i.e. individuals occupying strategic positions to cover the illegal action. The *ad hoc* collectivities embrace also politicians with their internal logic centering around

votes, power and influence, and the bureaucrats, focusing on budgets, power and influence, and using command and control mechanisms to supposedly ensure “development”, i.e. that budgets are spent and programs and projects take place. Both want to ensure that “something happens”.

The police and the military also use command and control mechanisms, but their mission is to secure the borders with Peru and Brazil and the state of peace in a region with many violent conflicts, hence, trying to ensure that “nothing happens”. That is why they are often more susceptible to support conservation dynamics than politicians and bureaucrats. Other actors, like small-scale looters and their enablers as well as scattered academics or NGO employees, may also join those alliances, if their individual sets of taboos gives ground for such participation. The strategies of small-scale looting will be picked up later.

Particularly important are the bureaucrats, who are employees of CORPOAMAZONIA.¹⁰ They often use their position to follow their own agenda: officials of the CORPOAMAZONIA are key actors regarding the implementation and enforcement of state regulations. This gives them a privileged position: they can choose how to use their powers over licensing, permits and law enforcement. This power can be employed to implement their official mission, namely conservation and sustainability, or to secure local priorities, gain the support of clients, reciprocate the support of a majordomo, and for self-enrichment. The danger of being sanctioned for wrong doings is very limited, as there are few outside controls on CORPOAMAZONIA officials and a lack of effective supervision. They face almost no mechanism which would sanction misbehavior, thus they are tempted to use their strategic position for clientelism and self-enrichment. Even though CAR reports and programs express concern for

¹⁰ Recalling that they are the Environment Ministry's agency responsible for sustainable development in the region.

environmental issues, in practice officials get little backing when following this line, as an informant of CORPOAMAZONIA complained, who newly arrived from Bogotá.

Taking a closer look at the organization it becomes obvious that employees have no institutional incentive from part of the agency to fulfill their *de jure* designated environmental protection functions. The long arm of the nation state (by means of the Ministry of the Environment MAVDT) does not reach them effectively, because they act autonomously as predetermined by their governance structure with representatives of provincial departmental groups and regional politicians having the lead on the board.¹¹ The assignment of licenses for resource extraction conforms to their inherent budget maximization objective, as they collect the fees for issuing such licenses or permits. Furthermore, the existence of the CARs is not bound to the maintenance or even existence of the forest. Consequently, their efforts for effective controlling and enforcing conservation rules are limited, even though it is part of their *de jure* obligations. At the same time, they can put the blame for the persistent illegal use and overuse as well as for their inadequate control activities on the lack of personnel and financial resources. After all, CORPOAMAZONIA as an external regulator, with limited manpower, transport facilities and financial resources claims to face severe obstacles to monitor activities in far away and difficult to reach forest locations. Additionally, their status of being an autonomous entity implies serious vertical, principle-agent problems between the national ministries and their agents in the field, or forest, respectively, such as the tensions between the environmental ministry MAVDT and CORPOAMAZONIA.

Essentially the only mechanism left to counter excessive resource extraction activities of CORPOAMAZONIA officials is their personal taboo structure disapproving of environmental degradation and side-payments. In this context it is rather problematic that they mostly relate

¹¹ Please recall that the board of CORPOAMAZONIA has already been discussed in the previous Chapter in more detail.

to other *desarrollista* collectivities. The term is introduced here referring to the protagonists of so-called modern development. These actors usually are urban, are socialized by the monetary economy and consequently have a strong preference for monetized forms of economic development. They view the traditional system of indigenous economies or family economies as antiquated and backward. The aim is to bring modernity into the region, by developing the region and integrating it into the monetary economy prevailing in Colombian cities. The idea of a "frontier" operates here, the idea that beyond the frontier of civilization there is nothing but wilderness, which is to be conquered and where no property rights exist. This concept is so powerful in the Amazon forest that it deserves some extra thoughts.

4.2.4. The "frontier myth" as wide-spread *desarrollista* driver

The Worldbank authors Alston, Libecap and Schneider refer to the frontier in their prominent article "Property Rights and the Preconditions for Markets: The Case of the Amazon Frontier" as follows: "Frontiers are defined with respect to distance from market centers, with rents declining with remoteness. The economic frontier is the point where the net present value of claiming the land just covers the opportunity cost of the claimant" (Alston/Libecap/Schneider 1995: 90). They explore the development of property rights in the case of the Brazilian Amazon. Here they follow the leading works of Alchian, Furubotn, Demsetz and others in this field by providing systematic empirical research. Their analytical framework is simple: moving away from market centers, transportation costs rise and consequently the net profit achieved by any economic activity declines (ibid.: 92). Accordingly, economic rent from isolated areas does not pay for the opportunity costs of marginal labor, which is why the land is not occupied and remains forest. Since obtaining formal tenure is not costless even when rents are low, for individuals or society at large, informal tenure arrangements emerge

as they are of minimal cost, serve to demarcate claims, and settle local disputes. When moving closer to the market, rents rise and greater competition for land can be expected, increasing private enforcement costs and making formal tenure systems more attractive (ibid.: 91). This argumentation is correct as long as previously uninhabited and unclaimed land is at stake. In this case, beyond the frontier there would “exist no rights nor markets” (ibid.: 90). However, even in the Amazon there is hardly any piece of land not used or claimed by indigenous peoples, traditional *ribeirinhos*, long-dormant absentee or pretending owners.

The main shortcoming of the work of Alston, Libecap and Schneider, as World Bank employees, can be seen in the incomplete list of actors considered: they take into account settlers but ignore indigenous groups and other traditional populations as well as National Parks with their predominant objective of conservation. At a closer look, most of the areas beyond the so-called “frontier” have been connected to society at large for some centuries due to multiple relations, characterized to a very large extent by domination mechanisms, like *endeude*, repression, exploitation and slavery. This situation seriously challenges the thesis of a frontier beyond which no rights, no markets and no human beings exist.

It is interesting to note, how an interpretation of social scientists about how they perceive social phenomena, reenters the arena, they described – a circumstance which Giddens (1987) calls *double hermeneutics*: “The ‘findings’ of the social sciences very often enter constitutively into the world they describe” (Giddens 1987: 20). The term frontier suggests a line between civilization and chaos, which makes the concept so appealing not only to policy makers and bureaucrats trying to bring national territory “under control” and integrate the Amazon into the rest of the Nation (Nitsch 1999). As Nitsch states, “the Amazon has been considered the last frontier to be conquered and converted to agriculture and cattle ranching,

plantations and forestry, in short to be turned into a civilized area of human settlements” (Nitsch 2000: 730). Hence, the frontier myth was easily absorbed in the mental maps of many individuals, in particular when they have been socialized in urban areas, where the simple idea prevails that wilderness reigns beyond formal settlements. The land at the assumed “frontier” acts as a magnet for all kinds of imaginations and adventurous individuals in search of new opportunities.

For the purpose of this analysis, individuals associated with the *desarrollista* mental map do not necessarily assume that the land beyond the frontier is totally uninhabited, but rather view the traditional inhabitants and the indigenous population in particular, as uncivilized and chaotic, making it necessary to introduce modernity with its property rights regimes and capitalist production modes as a substitute for the antiquated systems of resource use. Following this view, several public entities are filled with *desarrollistas*, in particular CORPOAMAZONIA and the governmental agencies of the *Departamento* and of the *Municipios* Puerto Nariño and Leticia.

The members of those government agencies in most cases are settlers themselves, whose parents or grandparents came to the region as businessmen, soldiers, fortune seekers or for related reasons. Even though in the *Municipio* de Puerto Nariño the majority of inhabitants has indigenous roots, only few indigenous people participate in the elections. In many cases they either do not consider legitimate the governmental rule of the Colombian state at all of its levels, deny or ignore the ruling and influential role of those governments regarding their daily life or they just don’t care and sell their vote. The result is a *Municipio* government – *Alcaldía* –, which remains in the hands of a small group of colonos (settlers) of the urban center of Puerto Nariño.

In this context, it is important to reiterate that each individual belongs to multiple collectivities. The social systems of settlers can be viewed as separate collectivities overlapping with the ones of the *desarrollistas* and others. Among the state entities whose members often are linked to the collectivities of *desarrollistas*, CORPOAMAZONIA stands out with its internal logic. Additionally one must take into account that the employees of the CORPOAMAZONIA in the field in Leticia and Puerto Nariño have often been relocated from the urban centers of the country, like Bogotá. Often they are not very sensitized to indigenous issues and come to modernize the region and bring economic growth. In many seminars and presentations of this entity the author himself has learned about the corporate identity and spirit of CORPOAMAZONIA, where employees claim that those chaotic indigenous people are just not yet capable of using their resources themselves for income generation and are in need of an organization like the CAR which introduces them to modernity. This way of thinking – interpreted as a taboo mechanism – easily gives way to exploitation driven by ‘*ex-situ* users’ collectivities.

It is difficult to change the mental map with its taboo structure of human beings so that it may take time before the conviction spreads that indigenous peoples and cultures are to be respected and protected. However, there is an important quantum jump to be expected, when it comes to counter the frontier myth with the National Park concept. Quite of a sudden, the “wilderness” is turned into a “Park” – and that imagine appeals even to more urbanized individuals than to the local inhabitants of the surrounding areas, let alone the landowners within the highly protected area. We shall come to the PNN Amacayacu later.

4.2.5. Small-scale looters and their strategies

Strategies to organize illegal extractions of timber do not necessarily have to count on large covert alliances, but can also rely on small-scale looting. In those small-scale patterns, alliances are less complex and not necessarily covert, they may even just build a joint venture on successful violations of legal rules.

It is widely known that CORPOAMAZONIA, the *Municipio* of Puerto Nariño and the National Police take advantage of the natural resources (wood, sand and gravel) of the *Resguardo*. The veracity of the destination use stated in the permits, for example, is a questionable matter. It is well known that CORPOAMAZONIA has issued permits specified for “domestic use” to construct a jail facility and a government building outside the *Resguardo*. Equally known is that traders at Puerto Nariño employ local people to remove and sell natural resources under the disguise of “domestic use” concessions. The communities in the *Resguardo* report the great amount of extraction from the territory without the consultation or approval of the affected community. Ongoing all year is the timber extraction, in particular the species cedar, caimitillo, quinilla, caracoli as well as fish and other animals. During the summer period, sand and gravel are extracted for construction work to mix cement. The constellation in this alliance reflects that the involved actors – driven by *Municipio* representatives in cooperation with CORPOAMAZONIA employees and policemen – have overlapping mental maps, trying to ensure that “something happens” and bringing modernity to the region.

Where logging teams carry concessions of extraction signed by a member of the *Cabildo Mayor*, until today, those are often issued without any previous consultation with the indigenous communities affected and without any management plan. There exists no adequate information regarding the present state of the natural resources and the suitable

amounts to be extracted, specific sites to remove the resources, or on possible damages caused by previous extractions. Teams entering the Amacayacu River with the purpose of extracting resources very rarely contact the authorities of the community San Martín when passing, in order to inform them about the reason of their presence, their planned activities, and their permissions. Frequently they pass the community at night time or early in the morning, when the inhabitant of the community are sleeping, therefore the community is weakly informed about most of the extraction activities in its own territory.

Concessions for extraction issued by the *Resguardo (Cabildo Mayor)* and the *Municipio* of Puerto Nariño mostly do not specify where exactly the extraction should take place. It simply declares, for instances: “along the left side of the Amacayacu going upriver”. As a consequence, there are several lots where extraction had taken place and often there is very little space in between, and many are very close to the community of San Martín de Amacayacu. Therefore it is difficult to control, whether concessions have already been used or not. Above all, there is no clarity about the appearance and format of legal concessions. Thus, the issued concessions are easily falsified as a wide variety of formats are shown, when a control takes place.

Most surprisingly, there is no control of the activities of extraction in the field and after having extracted the resources: Has really been extracted what is stipulated in the concession? The concessions for logging issued by the *Resguardo* always entitles for the species ‘madera blanca’, which excludes precious timber. But in fact various high-value species are extracted like ‘acapu’, ‘quinilla’, ‘itauba’, ‘cedro’ and others. In the cases of license holders with commercial concessions of CORPOAMAZONIA where a timeframe is specified, it is known that they continue to extract after concessions have expired. There are strong suggestions that in

some cases, licenses of CORPOAMAZONIA are not employed at the stated lots. Even though there are generally no specific locations indicated where to remove the resources, it is surely not allowed along the right side of the Amacayacu River going upriver, as this area is part of the PNN Amacayacu and at the same time ancestral territory of San Martín de Amacayacu. Nevertheless, extraction takes place from this area, too.

The list of examples for violations of legal rules is long. In some cases, loggers felt trees for the same purpose twice, because they have to leave the log too long before removing it from the site, and in the meantime it becomes unusable. On several occasions, there was evidence that concessions were used several times. That is, after the resources with a certain concession were extracted, soon loggers returned and removed resources again with the same concession. It also has been documented that two boats carried two power saws with only one concession. This makes it difficult to find out, whether this is the extraction activity of one license holder or if the license holder takes along a second person to extract timber without any concession.¹²

Most of the described extraction activities are based on simple violations of rules. However, they do build on covert alliances in which indigenous individuals and/or scattered Park employees participate. This becomes evident, when considering the fact that the mentioned cabin of control of the PNN Amacayacu at the river mouth of the Amacayacu River must be passed by every boat, when going down to the Amazon River. It also has been reported that fishing with large meshes and by that activities of timber extraction continuously take place without permission in front of the cabin – frequently by Peruvians –, even though those activities are strictly prohibited in every sense. Extraction worker stated that a concession

¹² For a detailed overview on the illegal extraction activities see report „MONITOREO DE ACTIVIDADES DE EXTRACCION DE RECURSOS NATURALES“ by the community of San Martín de Amacayacu, Colombia (financed by the Dutch NGO „Bossen nood Fonds“).

very rarely is demanded to be shown at the cabin unless boats stop voluntarily. According to them, they do not have to stop at the cabin for inspection and, frequently, there is nobody watching at certain times in the cabin on purpose. The control cabin of Amacayacu plays a central role, as passing cannot be avoided when leaving the Amacayacu River. This points to the very likely involvement of individuals from the park staff in covert alliances for small-scale and large-scale extraction.

Referring to the cases of illegal use of resources, members of the community of San Martín and other communities feel the necessity of a structured dialogue including the affected communities, the *Resguardo* authorities, the national police, CORPOAMAZONIA and the PNN Amacayacu with the purpose of establishing sanctions against the violators. However, those dialogues so far have been to a large extent thwarted by CORPOAMAZONIA and *Municipio* authorities for the already mentioned reasons, suggesting an impact of the tentacles of covert alliances.

4.2.6. CORPOAMAZONIA projects as counterproductive protection efforts

In 2006, CORPOAMAZONIA had scheduled three activities in the *Resguardo* territory: an inventory forest study of the region, a small-scale development project and the operation of rangers, so called “guardabosques”. One could take this support as a step towards cooperation with the local communities, but it turned out to be a prime example to show the essentially different mental maps of most CORPOAMAZONIA employees on the one side and indigenous people on the other. The communities had not been consulted before the launch of the forest study and no formal meeting with the indigenous communities or authorities had realized at all regarding its objectives. Therefore, the communities were badly informed on the activities that were being carried out in their own territories on which they depend for their

daily life as well as for their permanent livelihood and the study was not synchronized with their needs.

The development project also was a tremendous *faux pas*. The project was developed by a junior employee of CORPOAMAZONIA coming from Bogotá. It intended to create a new product by using a special fruit of the region, the huito. Through selling the product on national markets, the project was meant to generate income for the local population. A market analysis had already been done and the employee had already organized a tour through all communities of the *Resguardo*. Arriving at the first community, he learned that the fruit was holy for the Ticuna Tribe. Nonetheless, as CORPOAMAZONIA staff was convinced of the income generating potential of the commercial use of the huito, the employee continued to travel to several communities trying to carry through the project. Obviously, this action led to severe lack of understanding on the part of the indigenous population and the organized meetings with the inhabitants of the different communities always turned into very confrontational discussions. The unofficial conclusion by CORPOAMAZONIA staff in Leticia was that the indigenous people didn't understand the project, were unorganized and too much behind for its approach. Again, the approach and CORPOAMAZONIA employees' interpretation of the problems goes hand-in-hand with the outlined mental map of the *desarrollista* collectivities and reaffirms the link of the employees to it. This makes obvious that the absence of some overlap in the mental maps of the involved actor groups can be an important barrier for cooperation and for the failure of effective alliances, even when they are well intended and try to generate monetary benefits for the local communities. We shall come to the relationship of the *Resguardo* inhabitants to CORPOAMAZONIA later again.

Referring to the “guardabosques”, again, there were no consultations of the affected communities like San Martín de Amacayacu (the direct one affected by the extraction activities), nor of the group of monitors from San Martín de Amacayacu who organizes boat patrols to control resource extractions. Once more, the communities were worried because they had not been consulted or at least informed about the policy behind the concept of installing “guardabosques”, neither regarding their functions nor their responsibilities as already stated. Also, their already existed indigenous rangers appointed by the PNN Amacayacu, even though they do neither have a boat nor receive much other support to fulfil their duty, so that their duty is reduced to watch and report on passing boats from the riverside.

Here a “second degree” collective action problem arises: The problem of provision of the service of monitoring. In the case of San Martín de Amacayacu, this problem is even more complex, since this community is part of the PNN Amacayacu. Hence, monitoring could and should be carried out by CORPOAMAZONIA, the park authorities, the *Resguardo* and the community. But with the concept of “guardabosques”, CORPOAMAZONIA is trying to launch a monitoring project which is pressing on the indigenous institutions another external project where they hire-out labor, instead of building competence and strengthening existing institutions at *Resguardo* and community levels, which is why the activity was seen as rather unwelcome. So in this case a top-down organized project is pushed forward by external entities, rather than building collaboration among different stakeholders.¹³

The approach of CORPOAMAZONIA in the cases illustrates well, how their staff acts according to a *desarrollista* perspective which connects to frontier thinking, trying to bring so-called modernity based on all kinds of resource use with little sense for traditional

¹³ The entire process described in this paragraph had been uttered by the author himself during his stay in the region. At all meetings cited, the author was present. Points of view were observed during those meetings and in informal talks of the author with the individuals in question.

institutions. Hence their environmental protection function lacks behind and is nothing more than a paragraph in their bylaws leaving them *de facto* as a pseudo-environmental agency. This lacking behind, which could open the views for the indigenous perspective, shows once more how counterproductive the pushing forward of projects can be if the planning institution has no understanding of the mental maps of the target group which is intended to implement the project. When the involved collectivities have no overlap in their taboo structures, this is obviously a high barrier for cooperation and alliance building.

This structural aspect transmitted by the set-up of the agency is combined with an additional individual aspect: Most officials take their transposition to the Amazon rather as disagreeable duty. Consequently their set of taboos (as part of their preferences) is rather open to corruption – perceived as deserved compensation for being sidetracked. Taking into account the “Tripod model”, ties of CORPOAMAZONIA bureaucrats to the *ex-situ* user collectivities consist of two dimensions: on the one hand, money attracts bureaucrats to join such alliances – allocation is dominated by corruption as part of the market or money economy. On the other hand, they all share a set of taboos combined of frontier thinking and an understanding of indigenous people as backward. Mechanisms to sanction misbehavior by force are rarely, if any, installed and even more rarely implemented. The win for the *ex-situ* users is obvious: they encounter fertile soil to make allies to bypass existing barriers to resource extraction. So the key problems seem to be not only corruption (money mechanism), but also individuals in key positions who are open to participation because of sympathies with the activities (taboo mechanism) as well as lack of effective supervision and sanctions (force mechanism). The fatal effects become very obvious by understanding how all three means of resource allocation collude. As a result, these networks create significant rents both for the income of the officials concerned and, through the license fees, even for the formal CORPOAMAZONIA

budget revenue. This revenue increases the popularity of the key local officials and the career chances, who can thus use expanded budgets to support projects and programs that offer opportunities to clients and followers. Over time, these exchanges generate *de facto* institutional arrangements that govern access to the forests. Here direct personal ties based on reciprocity go hand in hand with the *de jure* institutions of the state rather than with the informal indigenous rules of the *Resguardo*.

4.2.7. Disincentives for changing the *de facto* working rules of “covert alliances”

Additionally, observations verify another phenomenon: Employees of state agencies attempting to implement the officially declared state policies face considerable disincentives. An efficient implementation of Colombian national policy programs (which give high attention to indigenous and environmental concerns) would involve changing the *de facto* working rules – the rules of the game – at the local level. However, such efforts endanger interests of the covert alliances, which receive significant benefits from the existing order. For instance, a local official attempting to enforce regulations – such as those forbidding illegal logging in protected areas – faces strong opposition from key local figures, as they perceive the implementation of a policy or enforcement of a law as an attack on their interests.¹⁴ So they use force mechanisms like psychological or physical pressure, if not outright violence, to ensure ways to retaliate against officials doing their job accurately.¹⁵ Therefore, those responsible for policy implementation would require considerable backing from state agencies, superiors and groups in civil society, if they are expected to implement formal state regulations. However, as all too often such officials have limited support, implementing policy or enforcing the law can entail significant risks to the career. Hence, officials trying to challenge the *de facto* rules of the game

¹⁴ This phenomenon has also been discussed by the political scientist Migdal (1988) in the context of state-society relations and state capabilities

¹⁵ Interview with CORPOAMAZONIA employee (anonymous).

confront a serious obstacle – the pressure from covert alliances of power and interest. In this way, the locus of control over access and use of forest resources remains within the network of functionaries formally responsible for issuing licenses and implementing regulations, but the conservation aspects of the rules are simply not taken care of. In this context, any impulse to change the local rules of the game faces substantial obstacles and would need serious backing from the national level, to which currently there is no visible access.

4.2.8. The polygon of accommodations and the tripod to tie “covert alliances”

How is the set of accommodations assembled in covert alliances? To begin with the politicians, they can use their discretion over budgetary allocations, contacts at the centre and other social assets at their disposal for their own purposes. Accordingly, politicians have an interest to enter into exchanges with bureaucrats (particularly forestry staff from CORPOAMAZONIA as has been extensively examined above) and businessmen (local businessmen and their external partners) on whom they depend in order to mobilize resources or groups of clients. This “polygon pattern” of exchange clearly gives basis to the formation of far-reaching clientelist networks here labeled as covert alliances – which are mainly tied together through to corruption and overlapping taboo structures.

Beside money and taboo, the third pillar of the tripod, namely force, is officially the domain of the police and the military. Both do not really feel responsibility for natural resource overuse as it plays no important role in their activity. At the same time, individuals, assuring such outstanding issues of national importance like security and peace, are more or less amenable for side-payments to overlook other illegal activities like natural resources extraction and use of force. Boats are required to stop at their fixed posts along the river and show a legal permit or make bribes. If not, boaters are threatened with sanctions until payments

are made. Thus payments are made up and down the chain of command. All levels take the opportunity.

These clientelist networks extend down into the indigenous *Resguardos*. Indigenous *Resguardo* leaders also participate in the extracting rents from the forests and become absorbed into the alliances.¹⁶ Those alliances at the local or regional level wishing to maintain or improve their position by extending their control over sources of revenue and the patronage offer their clients strategies of survival or to enrich themselves. To this end, they enter into

¹⁶ In particular at the early stages of *Resguardo* formation, the *Cabildo Mayor* of the *Resguardo* TiCoYa de Puerto Nariño took advantage of the non-existence of control mechanisms. As the newly formed *Resguardo* combined several indigenous villages without a formal organizational structure, it was easy to join an alliance with *Municipio* leaders and local businessmen from Puerto Nariño, to convert state transfers to private profits. In the first three years after 1991, almost the entire budget was spent on food – supposedly for conference meeting, but *de facto* those bills were largely faked in order to extract the money from the accounts (MÜLLER 2004b).

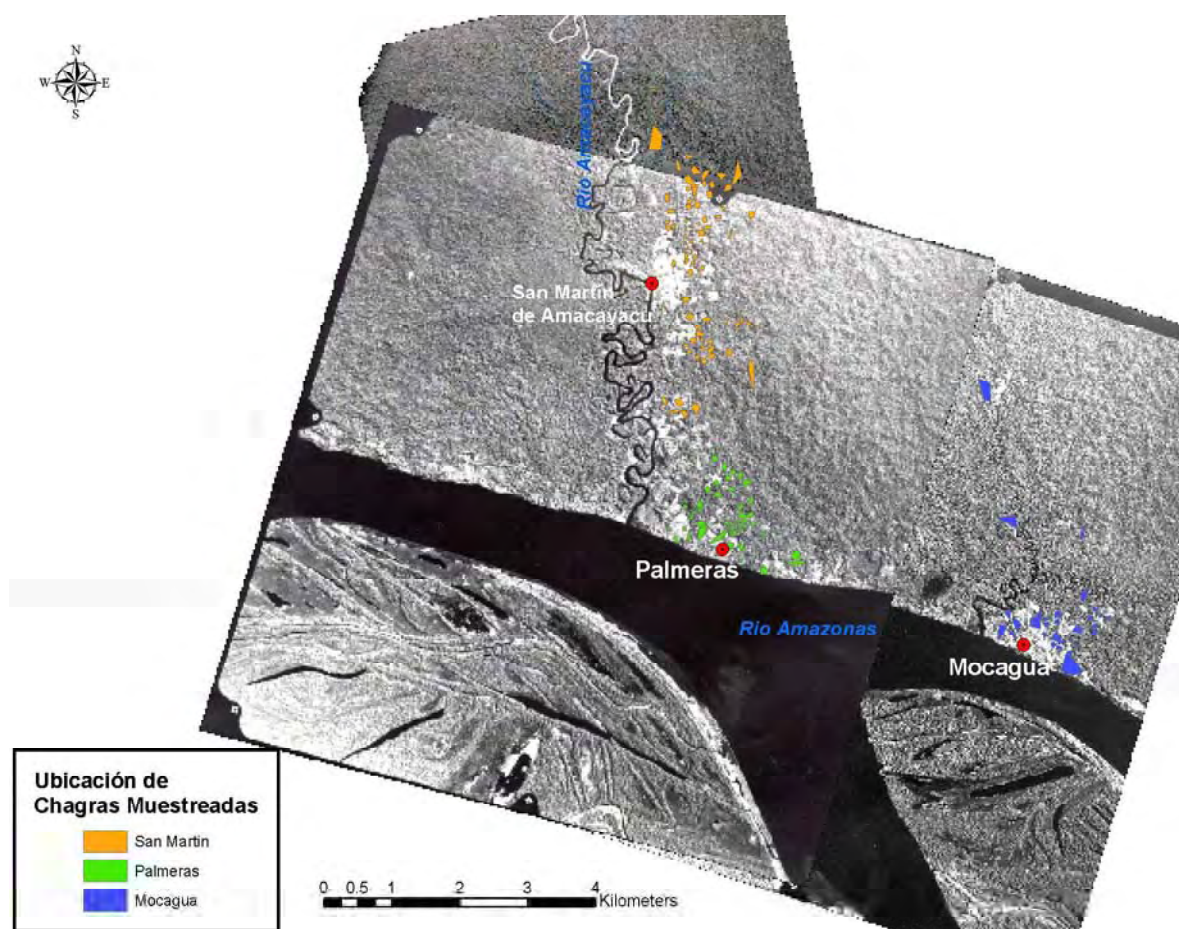


Figure 6: Location of Chagras of three communities. Their locations show that indigenous families enter rather deep into the forest for traditional agriculture and, hence, have a good overview about movements in the forest.

exchanges with local officials from CORPOAMAZONIA who are responsible for allocating concessions for natural resources as well as implementing and enforcing State regulations - and, thus, join the covert alliances.

That drivers of extraction – namely the businessmen – in some cases also work with legal documents obtained by fraud through more or less covert alliances became obvious in a case reported in the first months of 1999 (not to be confused with the Cabimás case of 2002): Several community members reported having seen large amounts of tree-trunks floating down the Amacayacu River. In a subsequent community meeting, they raised questions as to where these trees were coming from and who had authorized their exploitation. Acting up to its responsibility, the *Cabildo Mayor*, assisted by a legal adviser from ONIC (*Organización Nacional Indígena de Colombia*, National Indigenous Organization of Colombia), which is an indigenous umbrella organization with office in Bogotá, and a customs officer, set up a thorough inquiry into the matter. It soon turned out that most of the timber originated from three concessions with designated logging areas near the Amacayacu and Atacuari Rivers in the Northwestern parts of the *Resguardo*. The three concessions were being logged by small teams of woodcutters, apparently to the order of non-indigenous timber businessmen coming from outside the *Resguardo*. Most strikingly, the logging permits, which were issued by CORPOAMAZONIA in 1997, appeared to have also been signed by the Curacas Menores (the political authorities of the communities) of three *Resguardo* communities in covert consultations. They had been persuaded to do so by an entourage of high government officials, amongst whom was the director-general of CORPOAMAZONIA, in exchange for money and without informing their communities. Although the *Cabildo Mayor* and the wider community strongly disapproved the affair, they were unable to stop the exploitation since the permits dated from before the formation of the *Cabildo*. By ‘consulting’ the curacas in the

absence of higher authorities, the agency had seemingly complied with all *de jure* regulations, making the documents legal. Hence, the entire tripod of allocation means becomes visible in this case of timber extraction activity: businessmen, local government officials (from the *Departamento Amazonas*) and bureaucrats (CORPOAMAZONIA employees) set up an “triangle of accommodation”, an alliance tied by similar mental maps and economic interests, and then forced indigenous leaders into it with a mix of side-payments and thread of force to obtain legal documents to extract the timber.

Summing up, extraction on the so-called forest frontier has generated a set of accommodations between local businessmen, functionaries, local politicians, police and military as well as indigenous community leaders. Covert alliances largely rest on this “polygon of accommodation”¹⁷. But it is all three pillars, on which *ex-situ* user groups as drivers of timber extraction can count on to build up effective, covert alliances to back their illegal or paralegal activities: It is an important allocation factor that actors find plenty of individuals who share similar preferences and values, in Stadermann’s language “taboos”, and thus these businessmen encounter fertile soil for their not-small-scale, plundering extraction of natural resources driven by national and international markets, i.e. money. The particular dilemma is that one of the key organizations responsible for control and sanctions, the CORPOAMAZONIA, is linked to the frontier taboo by its pervading official as well as informal logic even though this pattern of supposed development at the margin of the civilized world results in severe conflicts and wasteful environmental damage. The timber companies and their intermediaries, hence, can build upon the taboo, which regards the clearance of forest as “progress” and can draw upon the money. So only force by administrative powers and police is left as a barrier, which itself is applied very hesitantly as it contravenes the taboo to not handicap progressive

17 The phrase leans on what Migdal (1988) calls a “triangle of accommodation”. However, as the discussed cases here involve more actors, the “polygon” seems a more adequate label.

companies only because of protecting some Indians who – from their point of view – lack behind the times, protecting seemingly hostile but “wild” abundantly rich nature. At the end, the tripod of allocation means plays in favor of timber businessmen to build up and run covert alliances, hence, making the observed outcome of destructive timber extraction plausible.

Are there actors that countervail this dynamic? What is the role of the PNN Amacayacu and its employees in this? The Park has only been briefly touched so far. This is because an involvement of its employees in illegal extraction activities has not been reported or observed. However, it can be assumed that some individuals may also be involved in covert alliances. The pattern of involvement of PNN Amacayacu in natural resource allocation shall be examined in the following section.

4.3. “Green alliances”, structural heterogeneity and local regimes for conservation

Turning away from the “covert alliances” of actors on the prowl, “green alliances” of actors backing protection of natural resources will be looked into. The last section explored – among other aspects – how the employees of the key organization responsible for control and sanctions outside of National Parks, the CORPOAMAZONIA, predominantly carry a set of taboos in their preferences which can be associated with the *desarrollista* perspective. One reason was found in the internal logic of the entity. This brings attention to two other institutions *de jure* responsible for natural resource management in the region, which already have been mentioned: The authorities of the National Nature Park and the Indigenous *Resguardo*.

It is interesting to recognize that the construct of intersecting *de jure* institutions of indigenous *Resguardo* and National Nature Park seems to create a promising hybrid subregime¹⁸ with a potential to connect traditional aspects of indigenous populations with

¹⁸ The term „hybrid regime“ refers to the combination of different institutional structures.

modern conservation thinking, which takes into account that forests are inhabited. In this section, the interplay will be explored mainly between the interests and preferences of the indigenous inhabitants of the *Resguardo* and their leaders on the one side and the park administration, their employees and individual researchers stationed in the park center on the other. To counter the covert looting alliance driven by timber entrepreneurs, a strong coalition of mutually supportive partners would be needed. What institutional framework could encourage green alliances embracing conservationists and indigenous peoples and what could be the linking elements for an alliance from an institutional point of view?

Many empirical studies and anecdotal journalistic reports have come to the conclusion that such alliances are not necessarily to expect or that they would be even unlikely. The causes for this are manifold. Some advocates of park-based conservation argue that most types of significant human activity have been shown to have a negative impact on the components and attributes of biodiversity and, hence, parks without people are seen as crucial in conserving the full range of wildlife. Others recognize that traditional inhabitants of protected areas can not only be persuaded to leave alone certain particularly endangered species but even converted into guardians of the forest and wildlife. After all, indigenous peoples have experienced a destruction of their habitats for 500 years so that “green alliances” between them, park authorities and individual researchers are seen as win-win constellations. Hence, such cooperation experiences have taken place and opportunities exist for strong alliances between conservationists and indigenous peoples.

In order to explore the action arenas in which such cooperation is likely to take place, the indigenous and conservationist collectivities in the area of field research – according to the model outlined in Chapter 2 – need to be explored a bit further.

4.3.1. Indigenous institutions in the *Resguardo* TiCoYa and competing logics

Obviously, traditional indigenous collectivities have been very much present in the indigenous *Resguardo* TiCoYa, even though up to the date of its official foundation and recognition, they have had very little formal relevance. In the Amazon, native populations are living under conditions whose forms of cultural, social and political organization differ from the forms of western organizations (referring to the institutions of so-called modern societies). One of the typical characteristics that distinguish Amazon native populations cosmology is the definition of humanity as being integrally part of nature, as opposed to being separate from it. Other traits include giving preponderance to reciprocity and redistribution over spot-market exchange and accumulation; and placing strong spiritual and ethical values on the relationship between nature and the community.

Ticuna, Cocama and Yagua and many other rainforest Indians, are a highly segmented ethnic group, until very recently without any form of authority transcending the local communities. Isolated settlements, mostly situated in the forest along small streams, were usually made up of one or more endogamous social units comprised of lineage segments tied by a system of bilateral cross-cousin marriages. These were governed by a local chief, the curaca. Very broadly, a main characteristic of all three tribes – Tikuna, Cocama and Yagua – may be summarized by interpreting culture as a rather collectivist concept. Predominately they view themselves protected by their membership in larger groups including the ancestors.¹⁹ The mostly isolated and highly segmented indigenous peoples from the Amazonian region have no tradition of centralized authority and have only recently started to adapt their economic and political organizations to the new legal situations (e.g. Jackson 1995, 1996).

¹⁹ Such collectivist cultures are well documented in anthropological literature and can be seen in contrast to individualistic cultures where people, to a large extent, view themselves as responsible only for themselves and their immediate families (Norton 2004: 91).

It took until 1998 before the Ticuna, Cocama and Yagua finally installed a *Cabildo Mayor* to centrally govern their new *Resguardo* TiCoYa de Puerto Nariño. A *Curaca Mayor* (head of the *Cabildo Mayor*) and his elected *Cabildo Mayor* were then to take control of all *Resguardo* affairs and coordinate activities with the *Curacas Menores* of the various communities within the *Resguardo*. The establishment of the *Cabildo Mayor* was encouraged by the need to appropriately manage the tax revenues that had become available to the *Resguardo* after 1994, which up to this point had been managed – or mismanaged – by the *Alcaldía* of the *Municipio* Puerto Nariño (Sandt 2002: 139f). The position of the *Curaca* is a rather new phenomenon among the Ticuna, Cocama and Yagua tribes and was introduced by non-indigenous rubber merchants in the early twentieth century, created to mediate between the community and outsiders. By the 1960s the *Curaca* had replaced the former *dueño de la maloca*, the chief of the communal long house that has almost completely disappeared among the Ticuna (Sandt 2002: 138f).

Indigenous economies constitute a singular and specific way of organizing economic activities to be distinguished from capitalist monetary economies, which are capital-market driven, in which the gained profit is distributed to the property holders and where the labor force is employed and viewed as a means to make profit, “human resources” being comparable to natural resources. In order to grips with the complex interrelationships in concrete situations, it is necessary to recognize the structural heterogeneity of social formations and the different logic of the various modes of production, which make up a society in its concrete time and space (Nitsch 1999b).²⁰

20 Every mode of production is overarched by a cultural-legal-institutional superstructure, which may develop its own dynamics. Taking this structure into account allows one to feature collectivities beyond methodological individualism (Nitsch 2002: 4). This scheme enables one to picture the subsystems of society not only with their own logic and but with distinct modes, means and mechanisms of production and reproduction, while allowing to analyze their coexistence in specific formations of society (where they almost always articulate and interconnect) (ibid: 4f). However, there is no consensus, whether “modes of production” should be a term applied only for long-enduring, era-alike formations of society or – the point of view taken here – whether it is also and even more useful to also relate it to the logic of behavior, the institutional and ideologic-cultural

A close look at the local conditions in the Amazonian Trapeze reveals that not only the indigenous and the capitalist modes of production are to be found here but also the *economía familiar*, the “family economy” which is dominant not only in Colombia’s rural areas and in which the consumption needs of the family members prevail over capital returns. Family economies constitute, according to this approach, a unique mode of production, as their budget restriction depends on the assets of the family members, without access to tribal reciprocities nor capital markets. They function according to the demand of the family members as consumers, so that the business is brought into their service or has often been founded because of unemployment – and not the other way round like in the monetary economy, where a business employs only as many workers as is profitable. Family economies operate mostly with their own assets, and only sporadically credit complements the capital stock or fills gaps but is not essential to their logic. .

In general it is that mode of production as some kind of intermediate step between indigenous and monetary capitalist structures, into which indigenous people slide, when traditional traits erode. There are, therefore, grey zones between the indigenous, the family and capitalist modes of production as well as various forms of articulation between them. Going into even greater detail, some more social structures can be detected which would also allow the term mode of production and reproduction, e.g. the narco complex, which are, however, not being treated here.

At the local level, indigenous communities and individuals of Puerto *Nariño* and within the *Resguardo* are thus exposed to essentially three competing logics: the indigenous versus the family and the monetary economy. In the case of the *Resguardo* TiCoYa, the indigenous economy operates in many cases with common property regimes as a mixture of superstructure of specific phenomena like for example the clearly distinguishable peasant family economy (Nitsch 2002: 7).

individual and collective rights to land, water, trees and other important natural resources allocated by community committees for longer periods of time (Müller 2004b), the collective work in the form of "*mingas*", a common labor activity for an individual, a family or the community. *Mingas* are periodical labor exchanges or collective work festivities grounded on long-term relationships of reciprocity. They fulfill an important social role, as they contribute to a sense of community and the strengthening of ethnic identity. Everybody can make an invitation to a *minga* and can usually count on having a sufficient number of participants. *Mingas* are carried out to construct *malocas* (traditional huts), houses, ceilings, to slash and burn land in preparation for planting, or to harvest the *chagra*, the traditional agricultural field, as well as to provide community services, such as building ports or cleaning community areas. Consequently, they are a very frequent occurrence. If one stayed within a community, little money was needed in the past because the internal exchange and the division of labor were governed by the *minga* based on reciprocity. In order to gain a quick monetary income for buying rice or school supply for the children, community members have already for a long time sold some goods from their *chagra*, the individual plot of agricultural land, or they have sold some of the fish they had caught or the animals they had hunted. Mostly, it had been the surplus not needed at the family or *minga* level, that was sold. In fact, this logic is dominant up to today, though varying in degree from community to community and between individuals and seasons.

However, demand for money in these communities is growing, in particular among young people, and even more so in the urban areas. At the same time, the increasing importance of income generation is by no means matched by job opportunities. Thus the easier and most convenient way to generate income is through the appropriation and sale of resource stocks, often organized in what has been described above as the family mode of

production, but also in the ways described with regard to the small-scale looting strategies as well as the “covert alliances”. In a workshop being held during the course of this research in San Martín de Amacayacu, an indigenous community of approximately 400 inhabitants located at the East bank of the river Amacayacu (a two-hour boat ride from urbanized areas), unemployment was a major concern of the forest residents in spite of having rather adequate food supply. Comparing the various problems cited by the group studied, unemployment scored higher as a concern than forest degradation or the diminution of fish and fauna. Hence it is not surprising, when the indigenous mode of production erodes that individuals often slide into family economies and entering the monetary economy in a way that degrades the environment more than the traditional mode of production.

Romanticism about contemporary indigenous peoples’ harmonious relationship with nature can be quite inadequate, and it would be probably also be misleading when analyzing the port. However, with an erosion of today’s indigenous identities and the almost irresistible attraction of so-called modernity outlined above, this harmony has been at an accelerated degree. Indigenous transmigrants, who migrated to urban areas, including those who returned to the region, also have introduced modern structures. As a result of this transmigration, often a family consists of a network as a “social archipelago”, i.e., a net of connected family members between rural and urban areas over rather large distances. Evidently, social capital is of outstanding significance for this collectivity complemented by income generating activities, which build on the network to connect local producers and gatherers to markets in the urban centers. Nevertheless, it is important to recognize the logic of the indigenous economies, since it not only still serves as an important source of identity and non-monetary income and utility, but above all as a shield against informal and formal invasions of the *Resguardo* which would lose its very justification of existence, when the indigenous culture disappears.

The indigenous economy with its different mode of production and its relation to forest-dominated nature up to this date gives meaning to the daily life of many, if not all, indigenous families in the *Resguardo* TiCoYa, and thus is reflected in their preference function, flanked by other attributes of high importance including traditional knowledge, cultural habits, and spiritual myths. The latter are generally seen to serve as a means of ecological self-regulation but currently this part of their taboo structure is seriously challenged, as so-called modernity has an increasing influence on the way of thinking of the youth, but also of the adults who do no longer want to be socially stigmatized by their “superstitious” beliefs. Nonetheless, the related taboos connected to ecological concerns provides the ground for matching interests and, hence, opens channels of understanding with the employees of the environmental governmental or non-governmental organizations.

4.3.2. “Parks with people”: Building upon local involvement in National Park

Amacayacu

Employees of the *Parque Nacional Natural* (PNN; National Nature Park) Amacayacu employees recognize the ecological merits and environmental services of the indigenous mode of production and respect the indigenous culture. As reported and observed, they have often entered into what here will be referred to as “green alliances” with the indigenous communities inside and outside the Park. But why do the Park employees, who also tend to come from the cities, tend to recognize these environmental services whereas the CORPOAMAZONIA employees usually don’t? And what are the binding elements in this alliance?

As PNN employees are responsible for managing the natural resources of the park and assure their protection, they have an incentive to put in place effective means of monitoring and sanctioning. Most of the employees of the PNN Amacayacu are linked to green collectivities,

which is partly due to the institutional setup of that territorial entity. The existence of the PNN Amacayacu depends on the existence of the primary forest on its territory. Neither the top management nor the employees of the PNN have *de jure* institutional incentives (no gain, neither pecuniary nor non-pecuniary effects) to work against the protection of the natural environment. They are formally linked to the centralized National Park System UAESPNN, which is their direct supervising organ and which itself is directly linked to the supervision of the environmental ministry MAVDT.

But this institutional incentive itself is weak, as the fault for resource degradation could always be placed on others. An additional, important part plays the conveyed taboo structure in modern conservationist thinking, which is reflected in the preferences of the PNN employees, advocating nowadays “parks with people”. Conservationist collectivities in and around PNN Amacayacu favor protectionist strategies that advocate the potential for alliances with indigenous inhabitants of the Park.

Reason for this is twofold: One aspect is the encouraging international trend towards recognizing the coinciding interests and benefits for effective monitoring, which is documented through WWF-International’s Statement of Principles concerning Indigenous Peoples and Conservation (WWF 1996) and explicitly recognized in the United Nations Convention on Biological Diversity (CBD). The Colombian environmental ministry MAVDT and the National Park System UAESPNN have committed themselves to this approach, documented in the publication “Parques con la gente. Política de participación social en la conservación” (UAESPNN – GTZ 2001). The Colombian environmental ministry MAVDT at the time received much support from the *Deutsche Gesellschaft für technische Zusammenarbeit* (GTZ; German Agency for Technical Cooperation), which – due to a bilateral agreement – cooperated until

recently with the MAVDT in an environmental program (programa ambiental) of the GTZ as singular organizational unit under the roof of the Colombia GTZ office.

The process of opening the conservation policy towards local participation in Colombia already became visible in the IUCN Latin American Protected Areas Conference in Santa Marta in 1997, where it was one of the dominant issues. This trend was significantly pushed and integrated into USAESPNN policy by Carlos Castaño, Head of the National Park System at the time with support from Juan Mayr, who became Minister of the Environment of Colombia in 1998 backing this process. Juan Mayr had international experience and good insight into the international debate towards integrating indigenous and conservation issues.²¹

Another aspect for securing local participation in the case of PNN Amacayacu is the particular commitment of Antonio Villa, General Director of the Park already in the early 90s to a participatory approach. He systematically started to involve the local communities inside the Park (recalling that they are all indigenous, as mentioned in Chapter 3) and to build up trust for cooperation with the Park employees by using a very simple instrument: he organized soccer games between the community members and the Park employees. The constant series of meetings between the communities inside the Park and the Park authorities started in the early 1990. The occasion of soccer matches is a mechanism not to be underestimated, as regular and informal meetings of the individuals involved on both sides gave ground to mutual trust. The experience of carrying out activities together and overcoming disagreements also contributed to develop an understanding of what is shared and what is not. Explicit recognition of where their respective interests do and do not coincide has contributed to a relationship of trust upon which the two groups of actors have been able to build an effective partnership.

Based on distinct, but convergent, sets of interests regarding the future of the territory,
²¹ According to informal interviews with Peter Saile, Director of the Environmental Program of the GTZ in Colombia until 2007.

the communities inside the Park and the Park authorities began to work together. The key accomplishment of the initial cooperation was the establishment of a Park Center inside the Park territory. The rather long process indicates once more the need for such cooperation to develop continuously.

Hence, over the last decade the PNN Amacayacu Administration has been experimenting with using local customary institutions as a basis for conserving natural resources. Their interventions broadly reflected what is internationally known as community-based conservation (CBC) or community-based forest management. As distinct from strict protectionist strategies that advocate the segregation of people from nature, the CBC philosophy advocates the coexistence of people and nature. As such, CBC has represented a convergence of two agendas: the advocacy for property rights for indigenous and other traditional populations, and the advocacy for nature conservation.

Actors or groups of actors advocating for this agenda, i.e. the collectivities of environmentalists or conservationists, are part of or backed by the national and international environmental protection and watchdog institutions as well as by several lone fighters for environmental protection. As Colombia aims to be viewed at the international level as a rather environmentally conscious and active country, an effective exertion of MAVDT's supervising role also lies in the interest of the government. This may not always stay the same but matches the last years, in particular while Colombia took a prominent role in the fifth United Nations Forum on Forests (UNFF5) providing a bureau member for UNFF5. However, a slight shift started under the administration of President Alvaro Uribe, with its focus on counter-insurgency and counter-narcotics strategy.

Regarding the taboo structure, the most outstanding characteristic of the conservationist collectivities is their advocacy for nature. What has relevance and thus a high parameter value in their preference function is *in-situ*, i.e., on-site, conservation of nature and biodiversity as opposed to plundering and *ex-situ* use as well as vague promises of ex-situ conservation in botanical and zoological gardens, germbanks, etc. In this context, it is noteworthy that the conservationist and the *desarrollista* identities and collectivities can not always be accurately separated. Of course, not all individuals who might be associated with the *desarrollista* collectivities blindly follow the frontier myth, and in fact particularly those functionaries who don't, currently take a lead on the discourse level. Many CORPOAMAZONIA professionals would sympathize with the attributes connected to the *desarrollistas* perspective except perhaps for the frontier myth, but also with the conservationist perspective. Hence, no simplification or generalization regarding the link between organizations with certain collectivities and individuals and their identities is justified, but a rather close look at the behavior of individuals and at the configuration of alliances in specific contexts is called for.

4.3.3. The alliances between National Park Amacayacu administration and local indigenous authorities

From an institutional point of view, property rights regarding access and withdrawal of the natural resources can hardly be managed and monitored, let alone sanctioned, by the park employees themselves alone, as staff and financial resources are rather limited. With regard to information, they depend on the indigenous inhabitants whose knowledge about movements in the forest is much more detailed. At the same time, indigenous groups have an interest to cooperate with governmental conservation agencies to achieve their ambition regarding a backing of their *de jure* property rights. The indigenous inhabitants have knowledge about

use or misuse of natural resources, whereas they do not have access to legal enforcement mechanisms, like police activity. The Park administration does have access to those agencies which are in a position to sanction and enforce *de jure* property rights. At least to some extent, they can put pressure on the police and even the military to investigate illegal activities and bring them before the judiciary. An important advantage of close cooperation with National Park administration for indigenous communities lies in this access to police force to counter illegal timber extraction. The viability of cooperation with the Park authorities is also based on the long-term commitment of the employees to conservation issues due to their environmentalist taboo structure.

However, the user rules for protected areas allowing or prohibiting, respectively, certain activities by Colombian law (conservation, research, education, recreation, and restoration) do not encompass all of the indigenous peoples' resource use priorities, which may include the provision of livelihoods or small-scale development projects that violate legally prohibited uses. As legal entities, both national parks and indigenous reserves hold a similar status, so that the implications for the co-management of overlapping zones are not so easily resolved. For example, indigenous peoples' rights would be infringed upon, if park authorities were to impose restrictions on traditional resource uses in order to fulfill their mandate of protecting a particular species or ecosystem. In many cases, common property regimes have been adversely affected by the superimposition of state policies pertaining to access rights to natural resources for indigenous as well as for external users, and the confusion and corruption that resulted. On the whole, the conservation policies around protected areas in the case of the PNN Amacayacu have managed to counter this tendency towards conflict through constructing channels of constructive bottom-up integration of objectives and respect for the existing property regimes and institutions due to the policy of local participation. This

willingness has become particularly obvious through the recent beginning of negotiations, ongoing since 2006, towards an agreement (“régimen especial”) for the rather small though particularly resource-rich zone of overlap, where the Park authorities recognize and accept that commercialization of natural resources *de facto* takes place to some extent, even though it is *de jure* prohibited. Through negotiating specific regulations for limited use in certain areas by indigenous inhabitants of the park for commercial use on a sustainable basis, it seems to be possible that the stock of natural resources is not harmed because only the flows are harvested.

The ongoing negotiations for an agreement have to be seen in a broader context in order to understand what aspects have paved the path for them. To understand the hybrid regime of PNN administration and indigenous authorities and institutions, it is noteworthy to underline the importance of autonomy for indigenous populations in the Amazonian *Resguardos*. It is generally acknowledged that, beside a secure land and natural resource base, certain continuity in the ongoing relationship of indigenous peoples with their non-indigenous counterparts and partners on the political and administrative side are of central importance for the survival of their cultures and, by implication, for their self-determination and their right to a *Resguardo*. Accordingly, the recognition and protection of typical indigenous institutions of land and resource holding – especially communal resource tenure and management – constitute areas of special concern for them (Anaya 1996: 104-106).

The typical community-based property regime includes a mixture of individual and collective rights to land, water, trees, hunting and gathering grounds and other important natural resources. Whereas the rights to economically use and exploit resources, often on a long-term basis, are usually allocated to families, the control, monitoring and sanctioning

rights for these resources remain vested in the community as a whole. A complex set of individual and collective property to use and/or to monitor resource uses regulates community members' relative interests in the natural resources throughout their territory, while at the same time implicating obligations towards one another, the State and others. It goes without saying that conflicts arise which again have to be channelled through institutions. In rural indigenous communities, institutions of collective property rights on land and other customs such as the common harvest of the community *chagra* and the individual *minga* fulfill, very important functions, as they form the cornerstone of their economic and cultural organization, contributing significantly to these groups' social cohesion and ethnic identity (Benda-Beckmann 1999).

Although the *de jure* recognition of indigenous territories is important in itself, these property rights alone are generally not a sufficient condition for indigenous peoples to be able to ensure the economic viability and self-development of their communities. Observations show, that in the case of the green alliance between park authorities and indigenous communities the *de facto* respect for those institutions is precarious. Key is keeping the *Resguardo* and its indigenous institutions free from inept outside interference to function properly. When PNN employees organize series of joint meetings with the community over long periods of time before expecting decisions, they adjust their management strategy to indigenous institutions, which reflect their recognition of structural heterogeneity. The ability to be responsive to the indigenous institutions has several aspects: Firstly, the long term commitment of the employees themselves for those processes. This is due to the fact that the PNN System attracts individuals who are ecologically minded and are related to conservationist collectivities. Secondly, they do not experience counter-running institutional incentives at the local level legitimating a drift, as in their preference structure (as in the case of CORPOAMAZONIA officials, who, from an

institutional point of view, are pushed towards a *negocio de permisos* ("business of licenses") rather than to environmental protection. The overlaps in the taboo structures of the indigenous and the PNN conservationist collectivities are a very important tie in this alliance, accompanied by and based upon the awareness that cooperation is an effective way to monitor resource use as well as enforce the compliance with legal norms. It is the "green alliances" which detracts covert alliances from easy access to extract timber via the Amacayacu River.

However, up to today, covert alliances do find ways to extract timber from the resource-rich area in the North of the *Resguardo*, which to some extent originates from Park territory, for example in the case of Cabimás. For such alliances, the participation of individual Park employees has to be reckoned with, even though it has neither been reported nor observed, so that no reliable information exists to draw conclusions on this. Anyway, money, force and threat with force can probably always overcome conservationist taboo structures drawing indigenous authorities and/or Park employees into covert alliances. As such participation is covert, the same person may also be part of green alliances in other contexts and periods.

4.3.4. The role of a "femina heroica" for alliance building: Sara Bennett and the Lake Mocagua

A good example for the catalytic emergence of an alliances between Park authorities and indigenous communities gives the case of Lake Mocagua. In 2002, the obvious fact of overuse of fish resources on the island of Mocagua in front of Park Amacayacu initiated collective interest in changing the existing management of resources and enforcement of rules. Convergent interests were visible on three sides: by indigenous inhabitants and Park employees as well as academic researchers. Park employees and researcher got involved in the issue, even though the lake lies outside Park territory, because of the threatened existence of

the bird „curassow“ (*Crax globulosa*) – a bird that has only few natural habitats left worldwide – on the island Mocagua, due to massive fishing activities on Lake Mocagua. Lake Mocagua is a small lake on the island Mocagua with special conditions for fish reproduction cycles. Result of the extensive fishing was a diminishing food basis for the bird, who's hatchery is limited to that island because of its ecological and biological conditions. To engage the indigenous communities into the process, employees from the Park administration and independent researchers connected the Park's agenda of protecting the “curassow” to the fish management activities by the indigenous population - sustainable fish management would save the hatchery of the bird and would stabilize the fish supply for the communities. Hence, both perspectives were merged and the approach allowed to synchronize the distinct priorities and preferences. Consequently and building on the trust towards the PNN Amacayacu administration, the initiative for this project of natural resource management in the indigenous territory – named “Managing the Commons” (in Spanish “Manejando Bienes Comunes”, MBC) – was welcomed and approved by the indigenous communities affected – namely the communities of Mocagua, Macedonia, El Vergel and Zaragoza, which each form very small Resguardos neighboring the large Resguardo TiCoYa –, since they had also observed the diminishing fish resources so that they were in favor to set up rules which would allow to sustain a stable fish stock.

The project was initiated by the biologist Sara Bennett, who worked in the Park as a American researcher having a strong interest in saving this bird's natural hatchery. Once more, the personal commitment of a single person “at the right spot at the right time” as a *persona heroica* – played an outstanding role. Under the model of *homo heroicus/ feminina heroica*, as defined in section 2.6, individuals pursue an activity out of entire personal devotion to the cause beyond the pattern of a “normal” *homo oeconomicus*. Recalling the outlined role of the Head of UAESPNN, Carlos Castaño, and the director of PNN Amacayacu, Antonio Villa in

the 90s, pushing policies towards participatory approaches, Sara Bennett is depicted here as the third of that kind of person “at the right spot at the right time” in the outlined setting.

Sara Bennett is not only linked to the conservationists but also to the academic collectivities. If heterogeneity refers to the distinct logics of behavior, then academic units like universities or research institutes must be examined separately, because of their specific logic, particularly as they often are represented by researchers who act out of personal devotion to a cause and they are internationally connected. Those institutes follow a logic that is linked to the advancement of specific (academic) goals or targets and legitimizes themselves through the real or assumed gap of understanding. The research projects put in place through project proposals and academic programs serve priorities set by specific decision-makers or by an independent researcher him- or herself to produce knowledge, financed through public subsidies or donations. In some cases the additional knowledge and even the quest for it produce a direct added value. In this case, the researcher had a strong preference for conservation of nature and hence got involved to protect the bird “curassow”. Many of the researchers involved from the University of Colombia in Leticia (Universidad Nacional de Colombia, Sede Leticia) and the research institute SINCHI (which was introduced in the third Chapter) have a strong preference for advancing indigenous concerns, as their academic background is partly or fully related to the academic field of anthropology. Here, a biologist takes the lead, and the somewhat blurred intersection of natural and social science academics becomes apparent.

In principle researcher from university or research institutes may also participate in covert alliances, though this is not very likely, and has not been observed in the *Resguardo*, since the community members of each involved community of the *Resguardo* TiCoYa must

allow the presence of researchers or NGO activists in their territory, and they hold meetings with them to check their motivations. This rule is a safeguard for the indigenous communities to identify whether sets of taboos overlap in favor of the indigenous people. Nonetheless, there is always space to cheat on the intentions or change them by time, get forced into or get attracted through bribe by covert alliances for illegal resource extraction, which is why the possibility that those actors participate in clandestine activities must be taken into account. This reiterates the need to examine the specific set of multiple collectivities each individual is part of in order to understand the dynamics in specific action arenas.

The important conclusion at this point is the recognition of the fact that after all, three *peronae heroicae*, played outstanding roles to open channels for participatory approaches, build trust as well as become aware of overlapping sets of taboos and advance the cooperation between the PNN Amacayacu personnel and the indigenous communities.

The role of a *persona heroica* also needs to be seen in the context that such a commitment endangers interests of the covert alliances, which draw significant benefits from the existing order. Therefore, such a person needs considerable backing from State agencies, superiors and groups in civil society in order to continue to act without endangering her life. In the discussed case of Lake Mocagua, Sara Bennett could count on the backing by most of the Park staff and personally by its director, but she did face significant pressure from clandestine actors negatively affected by her activities. Even though there exists no “hard” information on this, rumors can be believed that those actors tried various times to use the threat of force and corruption mechanisms to overrule her taboo structure. After all, Sara Bennett is up to this date actively promoting conservation of nature and cooperation with indigenous communities in the region.

4.3.5. The role of access to international organizations for the financing of monitoring institutions

In the initial phase of this cooperation of indigenous communities with park employees in the project MBC, a self-governed natural resource management unit was set up and control devices were agreed upon. Obviously this action was not costless: Fixed costs of buying boats and walkie-talkies plus the variable costs of gasoline, holding meetings, providing technical assistance and labor had to be covered. Securing a lake on an island where fish is stolen at night time through outsiders means a 24 hour security service of armed volunteers. Those costs exceeded by far the benefits of any participant in the short run. Thus, the initial phase of the project had to be funded by an external actor, in this case the non-governmental organization ECOFONDO, an umbrella group of Colombian environmental non-governmental organizations (NGOs). The contact to the NGO was set up and coordinated by Sara Bennett, the foreign researcher mentioned above, since ECOFONFO did not have staff members in the Trapeze.

How were the indigenous collectivities able to gain support through the NGO? This brings attention to the different logic of governmental and non-governmental organizations, when they are linked for the advancement of indigenous target groups. In this case, the MBC project set the priorities on sustainable resource management and on empowerment of regional indigenous people and their authorities by including them into monitoring and enforcement activities, supporting institution-building, particularly rules for resource use, from the beginning in a collaborative way. Those goals conformed with the agenda of ECOFONDO and most importantly with the “taboos” of the involved actors (in the wide sense of “taboo” as defined in chapter 2). The NGO agreed to cooperate not only with the indigenous communities but also with the PNN by financing the MBC project.

The resulting constellation was a quadrangle with Sara Bennett as an exponent of engaged research with special emphasis on the conservation of the curassow bird, with the indigenous community leaders and members with their interest in sustainable fishing, who contributed their information and their time to the common cause. The third partner was the PNN administration contributing official State authority and the NGO, as the fourth partner, money and a certain national legitimacy from Bogotá. Thanks to the high commitment of all participants of the projects, which embraced curacas (leaders) and other members from six indigenous communities²² along the river bank next to the island, the project could even be expanded from fish management towards a more general management of natural resources in the region, including setting up rules for fishing, logging and hunting in the territory of the participating communities and the corresponding Park territory (see Appendix 1 for details of the MBC Management Plan).

After a two year period the people of the region were convinced that the situation had improved considerably. Nonetheless, the funding of the project by ECOFONDO elapsed, since it had been limited to two years and neither of the other three partner was willing or able to bear the costs. Subsequently, nobody was able to afford the gasoline for the motorboats, so that the situation nearly returned to the former situation of *de facto* open access leaving the lake and its fish to looting alliances – in spite of a beautiful MBC plan. Only one community, San Martín de Amacayacu, managed to get funds to realize a subsequent monitoring project due to personal contacts of another foreign researcher who lived with a community member. She built a bridge to the Dutch NGO “Bossen Nood Fonds” to finance, for the limited time

²² The communities of San Martín de Amacayacu, Palmeras, Mocagua, Macedonia, El Vergel and Zaragoza

of one year, a follow-up project so that a monitoring group could be set up, all members of which were from the community San Martín de Amacayacu.²³

The role of social capital like access to networks becomes apparent again. For the construction of green alliances, indigenous communities depend on access to individuals and organizations beyond their borders that sympathize with their preferences and taboo structures for whatever individual or institutional reason and who are interested in joining such an alliance. There is a formal resemblance with what covert alliances do, but there is a remarkable difference: Green alliances typically are not driven by money but by “taboo” in that wide sense. Both types of alliances rely for success on their ability to mobilize effective legal or illegal enforcement mechanisms. However, green alliances need money, too, and looting covert alliances cannot rely on money and force alone but need some kind of justification of their deeds in taboos, such as the “frontier” myth. Green alliances do not open major doors to monetary benefits for the participants but, in the first place, they offer moral rewards, which makes them highly dependent on individuals and their personal preferences. However, sustainable fishing is, of course, a highly important source of income for the indigenous people involved, and payment for the job as an NGO activist or researcher should also not be ignored so that money as a driver mean can also not be totally dismissed from the incentive structure of green alliances.

While covert alliances can mostly be interpreted as geared by money and flanked by taboo and force, green alliances are rather geared by matching taboo structures and flanked by force and only up to a certain degree also money – as income generated for the people in the communities as well as salaries for public and NGO employees, and as cost coverage, at least for covering the necessary monitoring costs in the beginning. To be sustainable on

²³ See Appendix 2 for the report of the monitoring group. It gives further insights into the practices of illegal resource extraction, such as already outlined in the section on small-scale looting.

the long run, any institutional structure needs to be compatible with the *homo oeconomicus* and cannot depend permanently on a *persona heroica* and his or her social networks in order to access organizations for the financing of monitoring institutions. Hopefully, international carbon trade will contribute money to those alliances promoting the conservation of primary forests on a permanent basis.

4.3.6. Institutions to support the formation of green alliances

One important aspect of the process around setting up the participatory natural resource management plan and, hence, institution building has been the side-effect that communities started to communicate more intensively and frequently among one another in a more formal way regarding their perception of resource use and abuse. This should not be underestimated. As mentioned, the highly segmented indigenous peoples from the Amazonian region have no tradition of centralized authority and even have only recently begun to appropriate the externally imposed models of communal resource tenure and authority – *Resguardo* and *Cabildo* – as their own starting to adapt their organizations and their social life to the new *de jure* regulations. However, many of the communities within the *Resguardo* TiCoYa de Puerto Nariño remain highly isolated and segmented and few communication channels exist between them. In addition, sometimes the leaders, who are sent over rather large – Amazonian – distances to voice their claims and rights, are only very weakly rooted in their communities. This opens the door for clandestine participation in those “covert alliances” by indigenous leaders of several communities in the *Resguardo*, without the other community members or the *Curaca Mayor* of the *Resguardo* knowing about their activities. Participatory institution-building with its face-to-face communication, meanwhile, helps to build social capital – in this context referred to as connections within and between social networks as well

as connections among individuals – and hence counters the clandestine structure of covert looting alliances by improving communication and information channels as well as the level of trust within the networks of “green” ones.

A promising result from the project MBC was the formation of a new institution, the working-group on investigation (*Grupo de Trabajo en Investigación, GTI*), which is composed of representatives of the six communities who participated in MBC, park representatives and external individual researchers working in the park. This working group holds regular meetings although it has a rather informal character without a chairperson or a defined composition of members. The group is also without direct external financing, apart from the equipment which was left over from the MBC project, but with some side-support from the already mentioned monitoring group from San Martín de Amacayacu which had received external financing. This face-to-face communication over a certain period of time has given ground to understand the people and the logic of the ‘other’ collectivities – paving the way for detecting and experiencing similarities in their preferences and taboo structures. The process also improved acceptance of the “green” institutions themselves in the communities, as the rules agreed upon in this group have generally been accepted as a joint construct of the involved community representatives. The project also improved infrastructure in the communities for monitoring through boats, radio units in each community and walkie-talkies for control teams, thus strengthening the ability of exercising their management and exclusion rights.

Building upon the tradition of local involvement as initiated by Antonio Villa in the early ninties, the GTI has been an effective mechanism towards the formation of ongoing “green alliances” between the indigenous communities inside the Park, the researchers and the Park employees, where sympathizing taboo structures had been discovered and

served as a lever to mobilize money and enforcement against threats from outside actors. Those threats had been anticipated in a similar way by the different actors in this alliance. This shows that similar preferences – identifiable to a certain extent by taking into account the sets of collectivities involved via the actors – are a functioning basis for communication and cooperation. Exactly this basis has failed in the mentioned cases of contacts for project formation between indigenous *Resguardo* inhabitants and CORPOAMAZONIA officials due to a low level of overlapping preferences, i.e. taboo structures.

The GTI experience points at another important aspect: Allowing local communities to solve their problems on their own through face-to-face communication can be more effective, even without external financing, formal monitoring or sanction, than badly enforced government regulations. That also corresponds to the results of Cárdenas (2002 and 2003a,b) in villages at the Pacific coast of Colombia.²⁴ Those results also reiterate that social capital components such as trust, equity, and reciprocity have an important impact on individuals' decisions regarding their economic behavior. In the Amazon, the tradition of social structures without hierarchy beyond small communities and clans, which anthropologists call "acephalous" (without head) and the large spatial differences make it very difficult for the indigenous peoples to develop governance structures for their rather large territories in order to defend them against invaders. MBC and GTI show the decisive influence of outside assistance,

²⁴ Cárdenas (2002 and 2003a,b) constructed a similar setting (though without the involvement of outsiders) to observe human behavior in a controlled environment of incentives and institutions. In the experiment, the groups of players – Colombian rural villagers – played a fictive resource use game where resource users fished in a closed area in a lake with a limited number of people. The experiment was framed as a resource extraction problem which was well-known to the participants as it matched their fishing habits. They were given distinct incentives (payoffs) and ecological as well as institutional settings. In the settings, the players faced a set of feasible levels of extraction, incentives (payoffs per round), a set of rules regarding the control or monitoring of individual use, and sometimes ways of imposing material or non-material costs or rewards to those breaking or following the rules. Additionally they conducted a 600 household survey in the same village to gather information about people's willingness to pay and cooperate in different regimes for managing their commons. The main lesson from the experiments and the survey had two main aspects relevant in the context here: When allowed to have face-to-face communication, the actors craft endogenous ways of enforcing rules and norms that align individual and collective interest and sustain cooperation over the game. When confronted with external regulations, they in fact deviated from a group oriented strategy and concentrated in individually oriented behavior, which negatively affected the social outcomes.

be it from national or foreign NGOs and funding agencies. The emerging alliance between the Park authorities and indigenous communities with researchers and NGO support initiated through the practical results in the defence of Lake Mocagu a and frequent meetings led to reciprocal trust between the actors. At the same time, CORPOAMAZONIA still meets mistrust in the indigenous communities because of different set of taboos of the involved actors. The externally set rules by CORPOAMAZONIA are most of the time badly enforced, and externally planned projects to generate income frequently raise opposition by indigenous people, since they often do not take into account their needs, beliefs and/or internal rules. While the Park employees could activate all three means – taboo, force and money – to establish cooperation for a series of projects paving the way for further alliances, CORPOAMAZONIA mostly failed in all three regards.

In the cases discussed here, “green alliances” have faced the pressure of the extraction activities of outsiders as *ex-situ* user collectivities have been driving “covert alliances”. In this light, one must conclude that face-to-face communication, trust and collective action for control as well as sanctions are not enough, legitimate force and money are indispensable for success. The set of mechanisms for resource allocation which gear the covert looting alliances – which is a complex mix of sympathizing taboo structures in line with the “frontier myth”, institutional set-up, corruption, violence, and, above all, high amounts of money as outlined in section 4.2 – are difficult to come by without an opposing set of all three allocation means.

In the daily life of towns, villages and forests, the individuals participating in groups of actors categorized here as “covert alliances” and “green alliances” interact continuously both using and/or protecting the same resources in the same region. In some cases alliances even may involve the same individuals taking part on both sides so that the social realities cannot

be depicted in black and white pictures. And no regulating authority has a costless way of monitoring and enforcing the rules to counter the mostly clandestine strategies of “covert alliances”, as pointed out above. Of course, complementing taboo structures among local and external actors – like the quadrangle between the indigenous people, researchers, the PNN personnel and NGO – positively correlate with successful cooperation. However, those efforts need external financing through mechanisms like carbon trade for effective monitoring and enforcement of environmental protection and for the maintenance of institutions. And they need the ability to mobilize enforcement through state authorities such as the police, when necessary.

5. CONCLUSIONS: THEORETICAL AND PRACTICAL IMPLICATIONS

5.1. Reinterpreting *de facto* open access as status of many informal or illegal and, most notably, enforced *de facto* property rights

Institutions and especially property rights, have been highlighted to be of critical importance in understanding individuals' behavior in resource conservation and/or use, as they constitute the 'rules of the game'. The *de jure* and *de facto* property regimes in the Amazon and Latin America vary considerably. However, the diagnosis of *de facto* open access as the main cause of environmental damage in general leads to false conclusions, when it focuses only on insufficient or unclear *de jure* property rights. It overlooks the traditional and informal *de facto* property rights and often leads to the failure not to notice the clandestine *de facto* regimes of powerful covert alliances.¹

Modes of resource allocation and enforcement of *de facto* property rights can take many faces. The introduction of private or public *de jure* property rights in those cases might not only substitute or overrule more or less well working community based regimes, but also ignore the clientelist robber networks that external appropriators (outsiders) can often count on. But even when traditional communal property regimes are officially recognized by the national constitution or some other law or decree from the far-away capital of the country, those local regimes have to defend themselves often against locally much more powerful constellations: Alliances of actors – here categorized as “covert alliances” – establish illegal regimes and *de facto* enforce them through establishing informal or even illegal authority systems, which more often than not can count on official *de jure* impunity or even outright legal recognition. In the

Southwestern Amazon Trapeze of Colombia it is not helpful to assume a *de facto* open access

¹ Note again that land conflicts do not play a significant role in the research area, although they are overwhelmingly important in Brasil so that they are often taken as the core of the deforestation problem in the Amazon.

regime but to recognize an arena in which many different and often conflicting *de jure* and *de facto* property rights are imposed by various actors and their respective collectivities. *De facto* protection varies widely, and informal natural resource use regimes dominate the picture. A closely related issue is the lack of adequate management arrangements for indigenous territories that overlap with municipalities as well as national parks or other protected areas, a problem that occurs in many countries, challenging green alliances between indigenous peoples, Park personnel, researchers and NGO which tend to defend nature and traditional populations against robbery and invasion.

5.2. Recognizing multiple social systems as a perspective to explain the linking elements of actor alliances

Management arrangements for indigenous territories which overlap with protected areas are a topic of increasing interest in Latin America, Asia and Africa, with many legal, political, institutional, and methodological implications. Taking into account the various protecting versus looting networks, and understanding their ties as linkages between overlapping sets of taboos, as subsets of their preferences, gives hints for a well-functioning institutional set-up for environmental state agencies and indigenous territories.

Currently, the Colombian case described here, is probably not unique: A weakly enforced state monopoly on the legitimate use of force prevails because of sympathy with the illegal actions due to corresponding or overlapping sets of taboos of the involved actors within the various state agencies and because of monetary incentives, including bribes. As outlined, the ex-situ user collectivities can count on the "frontier myth" in many *desarrollista* collectivities as well as on communication channels towards police, bureaucrats and politicians due to specific constellations, which are accompanied by corruption or threat with violence where

necessary. This constellation is well known for the Amazon, where traditional communities as well as peasant squatters are often driven from their territories by force. Thus it is useful to recognize that individuals are part of multiple social systems with the consequence of having different sets of taboos, power and money mechanisms influencing their decisions. This analytical aspect provides one with a tool to understand the alliances and the institutional structures and the alliances at hand, as agencies or organizations through their institutional setups are linked to distinct collectivities, as presented for the cases of conflict between the Alcaldia of the Municipio, the Cabildo of the overlapping *Resguardo*, CORPOAMAZONIA and the PNN Amacayacu administration. Generally, competing property rights regimes will result because different individuals may belong to different and confrontational collectivities and even the same individual refers to different collectivities when calling on others to stand behind him/her when one or the other of his/her supposed rights is challenged. So different collectivities do not neatly fit one into another like the Russian matryoshka doll, but form a complex social structure around the individual.

The analysis shows that there are various alliances of actors and collectivities claiming and defending *de facto* and/or *de jure* property rights. Taboos, as subsets of individual preferences, have been found to be similar for individuals being part of the same collectivities. Alliances are often based on overlapping sets of taboos of the involved individuals, but common monetary interests and common resistance against or use of force and violence can also make good allies. Hence it is very useful to recognize ideological/mental superstructures of collectivities and other social subsystems, whose members may be linked through a common identity, like cultural or ethnic groups and movements, or can be connected through clandestine, strategic alliances as well as short term, ad hoc alliances, driven by monetary interests, composed of

any combination of businessmen, bureaucrats, police and servicemen, judges, NGO functionaries and even indigenous leaders.

To protect the indigenous territories from illegal external resource extraction which, given the legal status of the *Resguardos*, is a joint task for indigenous peoples and the State – constructing, recognizing, supporting and empowering “green alliances”. Actors working for environmental state entities such as National Park administrations tend to have a set of taboos which is in favor of indigenous peoples’ organizations in conducting their own participatory processes of diagnostic studies, decision-making, planning, sustainable use and management of these areas and their natural resources, and to develop the capacities of indigenous professionals and organizations to implement these types of activities. An institutional structure attracting individuals linked to environmental collectivities has proven to be highly supportive, especially when a person with environmental and social concerns beyond the normal range, i.e. a *persona heroica* turns out to become engaged in pro-conservation institution-building. Although forest conservation is not guaranteed by neither tenure security nor indigenous knowledge, indigenous peoples’ common-property regimes for resource management along with adequate incentives and long-term partnerships with outside conservation entities or organizations can achieve this result.

National Parks alone with indigenous peoples inside would probably be rather safe havens when it comes to the conservation of nature and the protection and sustainable use of natural resources, however, the modern nation state does not allow white or green spots on its map. The principles of democracy recognize indigenous persons as citizens with a right to vote so that their traditional cultural ways of governance are necessarily overarched with municipal, departamental and national political structures, putting them side by side with the

non-indigenous citizens on an equal footing. Furthermore, modern administrative structures such as watershed management schemes, in Colombia the conceptual and historical basis of the *Corporaciones Regionales* such as CORPOAMAZONIA, but also the military and the police, are equally constructs with a comprehensive mandate so that the institutional set-up and the respective conflicts found in the Amazon Trapeze of Colombia are not at all unique, but should be taken as rather typical examples for modern life in a rainforest region.

The whole picture is quite complicated, because individuals are engaged in different and multiple, sometimes conflicting relationships and collectivities, and their taboo structures, including subconscious collective memories and myths, such as the “frontier”, are even less obvious and more difficult to identify and gauge than organizational loyalties. However, any set of international evaluation criteria and recommendations for forest use and conservation/ protection should take seriously the local social conditions and dynamics in hotspots such as the Colombian Amazonian Trapeze.

5.3. Recognizing different means of resource allocation for use and conservation: simultaneous working of taboo, force and money

Focusing on Bromley’s definition of property rights, namely “the capacity to call upon the collective to stand behind one’s claim to a benefit stream” (Bromley 1991: 15), brings light to another important aspect: Important for analysis is not only ‘who’ stands behind one’s claim, but also ‘in which way’ do collectivities stand behind it. Groups of actors, who intend to extract resources illegally for monetary reasons, tend to form alliances with like-minded individuals and launch diverse mechanisms to enforce their claims through money and/or violence or threat of violence using key persons with political decision power. Hence, integrating the tripod model into the analysis makes visible the collectivities that are “standing behind one’s benefit stream”

allocating resources with taboos, force and money. Generally all three means of resource allocation work simultaneously with differing degrees of comparative dominance. Taking force and taboo as given flanks to money may be adequate when analyzing most of the normal market cases in monetary economies. When analyzing phenomena at the periphery of the monetary economy – like in tropical rainforests –, taboo and force as means of allocation become equally or more important and their institutional workings need to be taken into account in order to gain a full picture.

5.4. Political implications for the Southwestern Amazon Trapeze of Colombia

Since nature has no voice, it needs advocates. On the national level, there are indigenous organizations, NGOs and others to defend *Resguardos*, national parks and other protective measures. The more one steps down to the local level, the less vociferous are the defenders of the forest so that nearly only the indigenous communities are left, because they know that the clearing of the forest means their disappearance as cultural entities and as owners and possessors of special, highly valuable constitutional rights and, last but not least, economic goods and assets.

In locations like the Colombian Amazonian Trapeze, large tracts of forested land are under national protective legislation. Through the political decision of the Colombian Government and the Colombian Parliaments, not to allow land acquisition in the Southwestern Trapeze due to the land tenure regimes connected to the figure of the *Resguardo* and the National Park, the usual patterns of land conflicts known from other parts of the Amazon do not appear here – a very noteworthy aspect when comparing the results of this research with other cases. In the Trapeze, the rather vivid and active native communities provide a challenging chance for an intelligent institutional design for the protection and sustainable use of their forests, taking

into account horizontal as well as vertical cooperation and conflict patterns. For the time being, however, the institutional status quo is leaning towards a lose-lose constellation of degradation of nature and impoverishment of man because of the dominating role of “covert alliances” for resource extraction. Stemming the tide are institutional barriers such as the Resguardo and the National Park as well as committed individuals so that the situation is not at all hopeless.

The cases presented in this research show that pressure on the resources through “covert alliances” driven by outsiders cannot be resolved through collective action by the community members alone. Personal and institutional support, external financing of the institutions created to manage resources and to monitor protective measures as well as at least a certain threat of police support are keys to guarantee their performance. Poor local communities that depend on their own resources for survival and for a small amount of monetary income, will not be able to raise those financial resources which are necessary for protecting the natural resource from exploitation by outsiders. This leaves one with the need for strong “green alliances” at all levels and supportive institutional incentives with money and the will to push a taboo structure making illegal overuse (i.e. abuse) of the natural resource illegitimate and hence raising the barriers for the drivers of “covert alliances” to recruit the needed actors to stand behind their illegitimate claims. The described quadrangle alliance between the indigenous communities, the park administration, researchers and NGOs has the potential to play this role. However, the observations showed that building up “green alliances” is not yet engrained into the normal institutional setup, but is often still and only pulled by one or more *persona heroica* having or taking a key position. In the above outlined alliance building, several such individuals played a prominent role at different levels, starting from superiors on the national level pushing a favorable climate for “green alliances”, up to individuals advancing a climate of trust between potential allies, such as the formation of the MBC and setting up the contact to international

NGO. Those individuals often bring social capital in form of access to networks into the alliance due to their “above average” behavior and life path. Consequently, actors and institutions need to support a climate, where such persons experience a social environment, where they are backed and feel protected against the psychological or physical pressure from key local figures with opposing agendas.

Summing up, to support the conservation of nature and its sustainable use for the livelihood of the inhabitants of the forest, it is necessary to establish effective mechanisms in all three dimensions of the tripod for the region. Due to their institutional set up, the regimes of *Resguardos* and National Parks support and – in the longer run – mould taboo structures of the actors favoring conservation and sustainable use. Both institutions depend on the existence of a “standing forest”. The sympathizing taboo structures give ground for “green alliances” in comparison to the rather opposing taboo structures connected to the frontier myth and against the “wilderness” which has to be civilized and modernized, a perspective found in CORPOAMAZONIA and the local governments. In this context, the current governance structure, which induces the competition for dominance between the authorities of the *Municipio* and the *Resguardo* as well as the *Corporación Regional* and the National Park, needs an institutional solution to live with the overlap of conflicting territorial entities. In more constructive ways, in particular CORPOAMAZONIA would need institutional adjustments putting incentives in place that ensure that their employees appreciate the “standing forest” and which open and/or strengthen communication and cooperation channels towards “green alliances”. CORPOAMAZONIA employees should be given incentives, the corporate spirit (taboo structure) and the resources to support and monitor the *Resguardo* and the community authorities in their natural resource management instead of looking for timber concession fees and chumming up with “covert alliances” driven by corruption, violence and the frontier myth. Reorienting

CORPOAMAZONIA would perhaps not be enough to encounter massive extraction activities, as outside drivers of those operations can still find plenty of individuals who share similar preferences and values, who can be pushed through force or the threat with force or who will be attracted by bribes. Hence, a reorientation of the police and the military is also necessary, to effectively enforce the law and give the indigenous people in particular the ability to guarantee the enforcement of rules in their territory through mobilizing state authorities such as the police, when necessary. Obviously this is a challenge in a country with severe, armed conflicts involving paramilitaries, guerillas and *narcos* and a high level of corruption. This climate of violence and corruption provides a fertile ground for covert alliances and their drivers, namely timber businessmen mostly from outside the locality, to satisfactorily threaten with violence pushing actors into their alliance or attracting them with bribes. However, protection of nature could become a much more important duty of the police and even the military so that the current situation of a certain indifference regarding reports about illegal resource extraction could be reduced through institutional incentives. Generally and essentially, any institutional regime intending to promote conservation and sustainable development needs to be compatible with the normal *homo oeconomicus* and cannot, in the long run, depend on a *persona heroica* to promote, build up and sustain “green alliances”.

One way to reward the environmental services of the guardians of the forest, in this case particularly the indigenous communities of the *Resguardos*, would be through monetary transfers, for instance in the framework of the “Reducing Emissions from Deforestation and Degradation in Developing Countries (REDD)” scheme, such as recently decided on in Copenhagen. In addition, NGO donations and the financing of rather short-term, community driven development projects, frequently arranged with the help of individual researchers and their respective institutes, could continue to play an important role, – but they should be seen only

as initial aid or gap filler. Governmental financing mechanisms for effective monitoring and enforcement of environmental protection and to maintain the institutions are urgently needed. But it has to be assured that the payments reach the *de facto* guardians at the local level, including the indigenous communities in particular.

Coming to an end, this research has shown and reiterated what has been recently honored by the Nobel Prize Committee, when giving its prize in economics to Elinor Ostrom: Institutions, as sets of rules that govern human interaction play a key role to understand the dynamics of use and protection/conservation of natural resources such as tropical forests. It is revealing to look deep into the means and mechanisms of natural resource allocation, in particular when powerful outside actors take a role in the resource use at the local level. This research has demonstrated that it is of critical importance to give attention to the multiplicity of social systems and to the tripod of taboo, force and money as simultaneous allocation mechanisms with differing degrees of importance within those different subsystems of society in order to capture the dynamics of exploitation as well as conservation and sustainable use, and to identify the drivers as well as the existing barriers for the corresponding alliances.

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7. ABSTRACT

English Version

The Amazon Rainforest is a major resource for slowing down climate change. At the same time, the identification of institutional regimes that promote socially and ecologically desirable outcomes is a challenging task for research and policy-making. In spite of the optimism in the economic literature of the late twentieth century, the ability to design 'optimal institutions' seems rather elusive. In the Amazonian case study, enduring problems are not only illegal clear-cuts for cattle ranching or soybean farming, but also illegal selective extractions of high value timber from protected areas.

This piece of institutional research picks up what has recently been honored by the Nobel Prize Committee, when awarded to Elinor Ostrom for economics: Institutions, as sets of rules that govern human interaction and protect de jure as well as de facto property rights, play a key role to understand the dynamics of use and protection/conservation of natural resources. But it is revealing to look deeper into the means and mechanisms of natural resource allocation, in particular when powerful outside actors play important roles in the resource use at the local level. This research demonstrates the elucidating concept of a "tripod" of taboo, force and money as allocation mechanisms, which determine simultaneously, with differing degrees of importance, the dynamics of exploitation as well as conservation and sustainable use of natural resources. This tripod is also helpful for identifying the drivers as well as the existing barriers for the corresponding alliances of actors. The region in and around the Indigenous Reserve "Puerto Nariño de TiCoYa" in the Southwestern Amazon Trapeze of Colombia and its overlap with the National Park Amacayacu serve as the focal areas for illustrating this approach.

The cases show that pressure on the resources through “covert alliances” driven by outsiders cannot be countered through collective action by the community members alone. Personal and institutional external support, as well as external financing of the institutions created to manage resources in sustainable manners and last but not least credible police support, are keys to guarantee their successful performance. Protection of nature could become a much more important duty even for the military so that the current situation of a certain indifference regarding illegal resource extraction could greatly be reduced through institutional incentives. In order to curb illegal logging, there is an urgent need for strong “green alliances” at all levels and supportive institutional incentives raising the barriers for the drivers of “covert alliances” devastating the forest. To support conservation of nature and its sustainable use, it is necessary to establish effective mechanisms in all three dimensions of the tripod: Work on the taboo structure in the general public, add force to the “green alliances” and mobilize money for them!

German Version

Titel: Institutionen, Kollektivitäten und Individuen: Zur Gestalt von multiplen Steuerungsmechanismen bei Schutz und Nutzung von natürlichen Ressourcen im kolumbianischen Amazonas-Trapez.

Das Problem des illegalen, selektiven Raubbaus im Amazonas-Regenwald auf Flächen, die bereits geregelte und formal gesicherte Landrechte ausweisen und gesetzlich Schutzregimen unterstehen, wird aus institutionen-ökonomischer Perspektive analysiert. Damit knüpft die Forschungsarbeit an den wissenschaftlichen Diskurs um die Ökonomin Ostrom an, welche im Jahr 2009 den Nobelpreis für Wirtschaft erhielt. Um das Zusammenspiel in gesellschaftlichen Allianzen zur Durchsetzung von de facto und de jure Verfügungsrechten zu erfassen, wird der

Ansatz von Stadermann (1995) angewendet: Die Steuerungsmechanismen der Ressourcenallokation werden als Dreibein identifiziert: Tabu (im weiteren Sinne), Gewalt (ebenfalls im weiten Sinne, meist mit „Regulierung“ umschrieben) und Geld: Bei Äpfeln: Geld, Gewalt (gegen Diebe/Räuber) und Tabu (man klaut keine Äpfel) müssen zusammenspielen, damit ein Markt funktioniert. Unter den für eine Geldwirtschaft typischen Verhältnissen können die Flanken Tabu und Gewalt als gegeben angenommen werden. Unter strukturell heterogenen Bedingungen wie im amazonischen Urwald, wo indigene Wirtschaft, Familienwirtschaft, Geldwirtschaft in Kleinstädten, Raubbauwirtschaft sowie überdies Aktivitäten der Drogenmafia und der Guerilla aufeinander treffen, ist das nicht der Fall. Der dominierende Steuerungsmechanismus zur Ressourcenallokation kann unter diesen Bedingungen durchaus variieren, so dass die drei Mechanismen häufig nicht zugunsten von legaler Ressourcenallokation wirken.

Als Untersuchungsregion dient der südwestliche Teil des Amazonas-Trapezes um die Kleinstadt Puerto Nariño im Süden Kolumbiens, in dem sich indigene Reservate teilweise mit einem staatlichen Naturschutzpark sowie einer bis vor kurzem durch Forstkonzessionen genutzten Urwaldzone überlagern. Die präsentierten Fälle zeigen, dass dem Druck auf die Ressourcennutzung durch profitgierige „verdeckte Allianzen“, die von externen Holzhändlern gesteuert werden, nicht allein durch kollektives Handeln von Seiten der lokalen Bevölkerung, Partizipation oder Dezentralisierung von Ressourcenmanagement beizukommen ist. Auch die lokalen „grünen Allianzen“ zum Schutz der Ressourcen allein sind nur eine schwache Bremse gegenüber den Allianzen um die illegale Holzextraktion, welche auf das Geld als hauptsächliches Steuerungsmedium bauen. Die Schlussfolgerung ist, dass monetäre Mechanismen implementiert und von einem besseren Zugriff auf administrativ-polizeiliche Gewalt und möglichst auch von einer entsprechenden Tabu-Struktur der Öffentlichkeit flankiert werden müssten, um das Dreibein der grünen Allianzen zu stabilisieren und die Ressourcen zu schützen. Die externe Finanzierung

und sonstige Unterstützungen von Institutionen und Personen, die dem Schutz bzw. dem nachhaltigen Management der natürlichen Ressourcen dienen, sowie glaubhafte und energische polizeiliche Unterstützung, die Maßnahmen dieser Institutionen durchzusetzen, sind elementar, um einen effektiven Schutz zu ermöglichen.