



**BRAZIL'S NEW ENVIRONMENTAL CRIMES LAW: AN ANALYSIS OF ITS
EFFECTIVENESS IN PROTECTING THE AMAZONIAN FORESTS**

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1. Introduction

The Amazon occupies 59% of Brazil's territory, holding one fifth of the world's biodiversity⁴. It is the largest tropical forest in the world, but increasing deforestation and predatory logging have adversely affected the regional biodiversity and may well be leading to climate change both locally and globally. The expansion of cattle ranching and logging are the main reasons for the deforestation. In 2002-2003, the rate of deforestation reached 23.750 km², the second highest annual rate ever recorded in the Amazon⁵. Most cattle ranching and logging in the Amazon is illegal. The ranchers and loggers typically fail to obtain an environmental license from IBAMA (see 2.1 below) or the state environmental agency that is required prior to applying for permission to log; fail to submit to and receive approval from IBAMA for a forest management plan that is required prior to the logging; and disregard and violate labor laws. In the Amazon, between 50 and 80% of logging may be illegal⁶.

Given the economic and social importance of the forest sector for the region – it generates more than 350 thousand direct and indirect jobs and about US\$2.5 billion of gross income per year⁷ – the federal government and some state governments are promoting sustainable forest management. Governmental actions include increased monitoring of forest resources and, for legitimate forest uses, the development of support programs such as credit, training and resolution of land title problems. For example, the government of Acre, a state in the southwestern The Brazilian Amazon, is investing a US\$ 204 million loan from the Inter-American Development Bank for infrastructure improvement that will include significant investments in forest management⁸. In addition, the federal government has been negotiating a loan from the World Bank to further increase support for forest management⁹.

If illegal logging is not controlled, none of this governmental and financial support and none of the management plans will have much success. Unfortunately, illegal logging has been very profitable¹⁰. Illegal loggers and cattle ranchers pay nothing other than their direct costs for logging the forest or clearing it to establish pastures. All the external costs of environmental destruction revert to local communities, to the state and to the nation. Therefore, to protect the forest it is essential to remove the profitability of illegal practices. Doing this requires effective enforcement of environmental laws.

Brazil has recently created new laws to make environmental enforcement more effective. The most important innovation is the Environmental Crimes Law of 1998 and its implementation in 1999. The new law greatly broadens liability for environmental violators by improving the ability of administrative agencies to apply administrative sanctions; establishing the responsibilities of corporations for environmental violations and damage; turning more environmental violations, such

⁴ www.wwf.org

⁵ Inpe. 2003

⁶ See: Embrapa. Relatório sobre o diagnóstico dos projetos de manejo florestal no estado do Pará – Fase Paragominas. Belem: Embrapa/Cpatu PA, 1996. 94 p;

Update Report on Illegal Mahogany Logging and Trade in the Brazilian Amazon. Preliminary Version. São Paulo: Amigos da Terra, 1995;

Lentini *et al.* Forest Facts 2003. Belem: Imazon, 2004

⁷ Lentini *et al.* Forest Facts, 2004

⁸ www.ac.gov.br

⁹ <http://www11.estadao.com.br/ciencia/noticias/2002/jul/16/128.htm>

¹⁰ Barreto *et al.*, 1998

as illegal logging, into crimes with higher penalties (up to US\$ 16 million); and providing quicker judicial procedures for many environmental crimes.

Has this new law been of aid in protecting Amazonian forests? To find out we analyzed 55 judicial actions involving forestry crimes in the federal courts of Belem, the capital of Pará, the state that currently accounts for 40% of the region's roundwood production. We also interviewed personnel involved in enforcement of forestry laws. In this article, we analyze the kinds of crimes committed and the corresponding penalties assessed and collected. We then identify the main obstacles to effective enforcement against environmental violators and propose solutions to these problems.

2. Institutions responsible for enforcement of forestry laws

2.1. IBAMA

IBAMA (Brazilian Institute of the Environment and Renewable Natural Resources) is the federal agency in charge of national environmental policy. Its creation in 1989 was a result of the merging of three different agencies involved in environmental regulation, forest policy and fishing. IBAMA is in charge of conservation and federal enforcement, including monitoring, as well as promoting commercial use of natural resources.

The Federal Constitution¹¹ establishes that the responsibility of protecting the environment and preserving forests, fauna and flora is not exclusively a federal function, but instead is shared among the federal union, states and municipal governments¹². However, to date most of the states and municipalities have not been active in enforcing environmental legislation. Therefore, for practical purposes IBAMA is the main body enforcing logging in the Amazon.

2.2. Ministério Público

The "Ministério Público" (or "MP") is a prosecutor's office that functions almost like a fourth branch of government. It functions independently of the other branches at both the federal and state levels. There are federal offices of the MP with jurisdiction in federal courts, and state offices with jurisdiction in the 27 state and federal district courts¹³. Its members ("Promotores," who handle cases at the state level and "Procuradores," who handle appeals at the state level or work at the federal) have life tenure, and are subject only to the sparse law specifically applicable to their offices, their internal rules and their own consciences.

According to the Brazilian constitution, the MP is in charge of "...civil investigation and public civil suits to protect public and social property, *the environment* and other diffuse and collective interests¹⁴". It also has exclusive authority to bring environmental criminal actions.

The MP has been the most potent judicial force for protection of the environment and other public goods. Other agencies such as IBAMA and even ordinary citizens have the right to bring non-criminal actions to protect the environment. However, for various reasons including lack of experience and organization, only the MP has been able to play an active and consistent role.

¹¹ Constitution of the Federative Republic of Brazil: Article 23, Sections VI and VII

¹² Municipalities in the Brazilian states are similar geographically to counties in U.S. States

¹³ There are also independent MPs for labor and military matters.

¹⁴ Constitution of the Federal Republic of Brazil: Article 129, Section III (emphasis added).

2.3. Special Courts

The Special Courts have jurisdiction over matters of limited liability. In that sense they are somewhat similar to small claims courts. However, there are important differences. For instance, the Special Courts have jurisdiction over both civil and criminal matters. For criminal matters, the Criminal Special Courts can provide sentences of up to two years of imprisonment. Most of the forestry crimes in Brazil are now presented in the Special Criminal Courts, where the parties have an opportunity to plea bargain. The main goal of the Special Courts is to solve issues faster than ordinary proceedings. To that end, they provide a simplified set of procedures and have eliminated any requirement for an independent police investigation. For example, in proving environmental crimes, the facts provided by IBAMA inspectors are deemed sufficient to support the court's finding of facts. This relieves IBAMA and the courts of the heavy resource burden of a separate police investigation.

3. Environmental Violation in Brazilian Law: three liabilities

The Brazilian Federal Constitution establishes three kinds of liabilities for environmental violations: administrative, civil and criminal¹⁵. All of them may be invoked concurrently against each violator for each violation.

In Pará, administrative liability for illegal logging has been enforced exclusively by IBAMA. Criminal liability is enforced exclusively by the Ministério Público. Civil liability may be enforced by the Ministério Público, environmental agencies and non-governmental organizations. In each instance there is the opportunity for negotiation with the alleged violator. These negotiations can involve any of the outcomes available to the government (See Table 1).

For example, for logging without authorization, the violator may have to pay a fine to IBAMA (administrative liability), may have to restore environmental damage (civil liability) and/or may have to pay a penalty to a private or public environmental fund (criminal liability).

3.1. Administrative liability

IBAMA's inspectors may assess fines against violators upon discovery of environmental violations and then initiate an administrative process at IBAMA. If the violator wants to settle the matter¹⁶, he or she must present a proposal to IBAMA. If it is accepted, the violator must pay 10% of the fine's value and comply with the terms of the agreement, which can involve payment to environmental projects (Table 1). Simultaneously, the notification of environmental crime is sent to the Ministério Público, which will decide whether to address any civil or criminal liabilities.

3.2. Civil liability

To establish civil liability, the Ministério Público must either negotiate a settlement with or bring a civil action against the alleged violator. Usually, the Ministério Público first seeks a negotiated settlement. If the case is settled through negotiation, the result involves an agreement between the Ministério Público and the alleged violator to perform injunctive relief and to pay a penalty. Such an agreement is extrajudicial. Its main objective is to repair

¹⁵ Constitution of the Federal Republic of Brazil: Article 225, Paragraph 3

¹⁶ IBAMA Normative Instruction, IN nº10/2003

environmental damage (Table 1). If there is no agreement, the MP may sue the alleged violator in a public civil action.

3.3. Criminal liability

In cases of criminal liability there is typically a kind of plea-bargaining between the Ministério Público and the alleged violator before a judge prior to any decision by the judge. This negotiation is a right of the alleged violator whenever the penalty for the alleged violation does not exceed two years of imprisonment, but it is not permitted when the alleged violator 1) has made this kind of negotiation within the last five years; 2) has been condemned imprisonment in the past; or 3) has a serious criminal history or has demonstrated undesirable social behavior and a personality incompatible with this kind of procedure. The negotiation is an opportunity given to the alleged violator to avoid the consequences of a finding of criminal liability. The advantage to society is avoidance of the high cost of a criminal action and a quick resolution of the matter. The outcome of the negotiation is a document providing the terms of the agreement (see table 1). If the violator complies with the terms of the negotiated agreement, there is no finding of guilt and the record of criminal liability is expunged. However, if an agreement is not reached, the judge can unilaterally order injunctive relief and payment of a fine. If the agreement is violated, the Ministério Público may bring a criminal action against the alleged violator and ask the court for imprisonment or payment of a high fine, depending on the crime.

Table 1: Possible sanctions used in administrative, civil and criminal agreements for environmental damage

Sanctions	Liabilities
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	Administrative	Civil	Criminal
Fines ¹⁷	X	X	X
Repair of damage in situ ¹⁸	X	X	
Repair of damage elsewhere ¹⁹	X	X	
Performance of services ²⁰	X		X
Temporary suspension of rights ²¹			X
Restriction of movements for individuals ²²			X
Partial or total suspension of activities for corporations ²³			X

4. Methods

We analyzed 55 lawsuits for forestry violations brought in the federal special courts in Pará to see how they were handled and to identify the main problems. This analysis is focused on criminal liability for environmental violations.

4.1. Selecting the sample

There is no system in the Federal Court or in the Ministério Público that can tell us how many environmental lawsuits have been brought or have already been concluded. Therefore, during January 30-February 6, 2003, we collected information on the 1,244 notifications sent by IBAMA to the Ministério Público during 1999-2002. These notifications contained the name of the alleged violator but some of them did not indicate the kind of environmental crime committed (i.e., whether against fauna, flora or something else). We checked the names in the register of the Federal Court to identify the lawsuits alleging forestry violations. We found 249 such cases, of which 177 were in the Federal Court in Belem (the others were in other Federal Courts in Pará: Santarém and Marabá).

This number of cases identified (249) is low compared to the number of IBAMA notifications (1244). We looked at the possible reasons for this discrepancy and determined that they did not reduce the representative nature of our sample²⁴. We also collected data from 55 lawsuits first filed in the Federal Court of Belem during 2000-2003 based on the availability of files

¹⁷ Article 2, Section V of Normative Instruction IN/IBAMA nº 10 from 2003; Articles 3, 5, §6º and 13 of Brazilian Law N 7.347 from 1985; Article 8, Section IV of Environmental Crime Law N 9.605 from 1998

¹⁸ Article 2, Section I of Normative Instruction IN/IBAMA nº 10 from 2003 and Articles 3 and 5, §6 of Brazilian Law N 7347 from 1985

¹⁹ Article 2, Section II of Normative Instruction IN/IBAMA nº 10 from 2003 and Articles 3 and 5, §6 of Brazilian Law N 7347 from 1985

²⁰ Article 2, Section IV of Normative Instruction IN/IBAMA nº 10 from 2003; Article 8º, Section I and Article 9 of Environmental Crime Law N 9.605 from 1998

²¹ Article 8, Section II and Article 10 of Environmental Crime Law N 9.605 from 1998

²² Article 8, Section V and Article 13 of Environmental Crime Law N 9.605 from 1998

²³ Article 8, Section III and Article 11 of Environmental Crime Law N 9.605 from 1998

²⁴ We compared the names of alleged violators in the IBAMA register and in half of the Federal Court register. We found that the causes for the discrepancy were: the difference in the name of registration (e.g. abbreviation or a wrong letter) and delay in registering the most recent cases in the Federal Court. However, we did not consider that these motives would invalidate our sampling. This enormous loss of data represents a system weakness in an intra-governmental reporting and indexing system.

at the Court during the period of our data collection. To verify whether this sample was representative, we consulted a prosecutor from the Ministério Público and the Director of a Federal Special Court²⁵. Both agreed that what we found in the samples – and report later in this paper – represented the patterns that they have observed in their work, thereby supporting our belief that this sample was representative.

4.2. Alleged violator profiles and crimes

We first classified the alleged violators as persons or legal entities and identified their domiciles as inside or outside Pará. Based on the case files, we verified the crimes allegedly committed.

4.3. Judicial proceedings: procedural route, procedural phases and duration

We then identified which procedural route (e.g., to negotiate, to bring a criminal action or to decide not to pursue a criminal action) the Ministério Público had recommended for each case. For lawsuits we verified the procedural phase until March 13, 2003, the date on which our data collection ended. Out of the many possible procedural phases, we chose three to measure: 1) the period from the filing of the lawsuit until the first procedural order; 2) the period from the first procedural order until the conference between the parties; and 3) the period from the conference until compliance (or non-compliance) with the terms of the negotiated settlement or the judge's order.

We noted the beginning and the end of each discrete procedural phase to determine its duration. This was possible by looking at the case files and also at the Federal Court docket, which is available on the Internet²⁶. We measured the duration of each phase in workdays.

4.4. Criminal settlement proposals – nature, value and propose beneficiaries of the offer

a) Monetary provisions of the settlement offers

We checked the settlement offers that the Ministério Público made to the violator in the criminal action and compared that offer to the fine that had been assessed against the violator in IBAMA's administrative action. IBAMA, by law, bases its fines on quantity of material involved in the alleged crime. As we found and report in 5.1 below, most of material involved in these crimes is roundwood, which is measured in cubic meters.

Typically in its settlement offer the Ministério Público asks for equitable relief, for example provision of seedlings to remedy damage to the forest and even donation of medicines to public hospitals.

We evaluated the hypothesis that the money and equitable relief specified by the Ministério Público in its settlement offer was based on the fines assessed by IBAMA. To that end, we calculated the correlation coefficient between the values of the settlement offers and the fines assessed by IBAMA²⁷. In addition, we examined value of the MP settlement offers in terms of

²⁵ Procurador Felício Pontes Jr and Director Maria das Neves Miranda da Silva

²⁶ www.pa.trfl.gov.br

²⁷ Correlation coefficient estimates if there is any connections between variables and the intensity of this connection.

cubic meters of roundwood over time. We calculated these values in U.S. dollars per cubic meter of round wood (US\$/m³). We converted the values of processed wood in roundwood by multiplying the volume of processed wood by a conversion index of 2.86, considered typical for logging companies in eastern Pará²⁸.

We calculated the market value of the equitable relief offered in the MP settlement offers to evaluate their real value. For example, in the case of seedlings or donations of medicine, we calculated their real value. We used an exchange rate of R\$ 3.50= US\$ 1.00, which was a representative value at the time of our data collection.

b) Comparison of the settlement offer and the negotiated settlement

We compared the values of the MP settlement offers and the negotiated settlements in eight of ten lawsuits that reached this phase. In the other two lawsuits we failed to find information sufficient to make such a comparison. For all ten lawsuits, we compared the dates fixed in the settlement agreement to the date of actual compliance.

4.5. Identifying difficulties in prosecution:

We used two methods to identify difficulties encountered in the prosecutions: 1) analysis of case files; and 2) analysis of anecdotal information gathered by interviewing people charged with the enforcement of environmental crimes law (six employees from the Federal Courts, one Federal Prosecutor and four employees of IBAMA).

5. Results

5.1. Process profile and alleged crimes

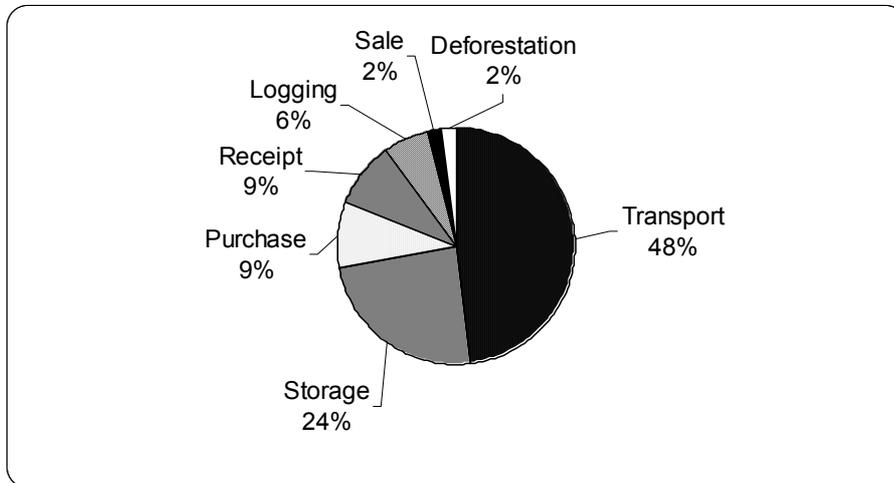
We found that 53% of the lawsuits were against legal entities and 47% against persons. All of the alleged violators lived in outside of Belem, most in other cities or towns in Pará and three in other Brazilian states (two in the southeast and one in the south of Brazil).

Almost all the cases (98%) were related to Article 46 of the Environmental Crimes Law, which includes taking, acquiring, selling, storing, or transporting for commercial or industrial purposes, wood, firewood, charcoal and other forest products without authorization. Illegal transport was the most frequent crime (48%) and illegal storage was the second most frequent (24%) (See Figure 1). About 50 wood species were identified in these crimes.

Crimes related to logging activities (illegal logging and deforestation) represented only 8% of the entire sample (See Figure 1). The predominance of illegal transport and storage suggests that most of IBAMA's monitoring takes place on roads, rivers and at logging companies transport facilities instead of in the forest, where illegal logging and deforestation occur.

Figure 1: Frequency of alleged environmental crimes related to logging activities in the 55 lawsuits in the Federal Court of Pará, 2000-2003.

²⁸ Each cubic meter of processed wood requires on average 2.86 cubic meters of round wood timber (index based in Gerwing, Jeffrey et al. *Rendimento no Processamento de Madeira no Estado do Pará*. Belem: Imazon, 2001. 35 p. (Série Amazônia, 18).



5.2. Judicial proceedings: procedural route, phases and duration

a) Procedural Path

The Ministério Público chose plea-bargaining in 91% of the lawsuits (50 cases) and brought a criminal action in 9% (5 cases). The criminal actions were taken against alleged violators that had already been sued for other reasons, had shown recalcitrant social behavior or also had been fined by IBAMA many times before. We know this from statements by the Ministério Público contained in the case files.

b) Phases

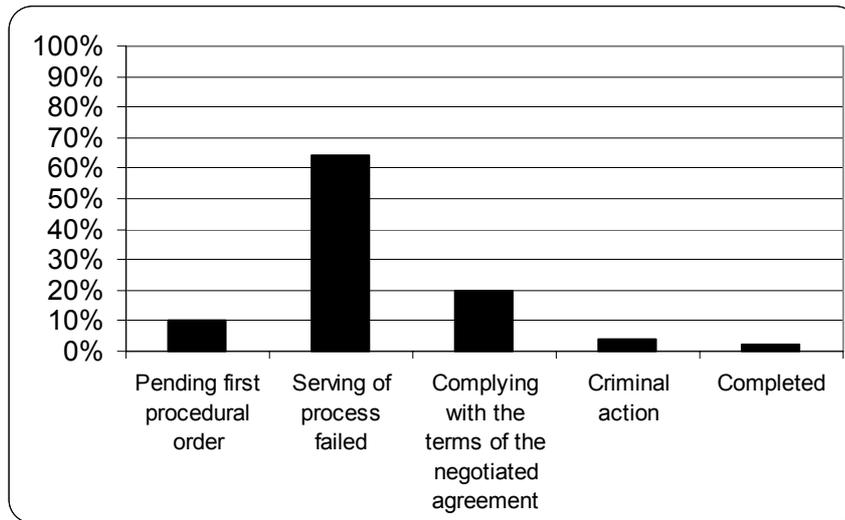
Of the five cases without plea bargaining, in two (40%) the process server failed to serve process, two (40%) presented jurisdictional problems between the federal and state judicial systems and one (20%) was in continuance for two years (See Figure 2). This kind of continuance can last four years and occurs as part of a formal agreement with the violator but is only available under limited circumstances²⁹. In the period fixed by the judge, the violator has to comply with specific terms, such as repairing the environmental damage caused by the alleged criminal behavior. If the violator complies with the agreement, then the underlying action will be terminated and the violator will be held innocent regarding the underlying allegations.

In the 50 plea-bargaining cases, only one (2%) had already been completed. Five (10%) were still waiting for the initial order from the judge. In thirty-two cases (64%) the alleged violators were not found and in ten cases (20%) the alleged violators were complying with the terms of the agreement (see figure 3). In two cases (4%), the Ministério Público brought a criminal action. In one of these two, the process server failed to serve process. Therefore the only way to gain jurisdiction over the defendant was to file a criminal action, which enables serving a process

²⁹ When the violator: 1) is not being sued for other reasons; 2) has not been condemned imprisonment in the past; and 3) does not has a serious criminal history or has not demonstrated undesirable social behavior and personality incompatible with this kind of procedure (Article 89 of Brazilian Law N 9099 from 1995).

through publication. In the other case the alleged violator did not provide the negative criminal declaration that is a prerequisite for plea-bargaining.

Figure 2: Phases of 50 lawsuits with criminal transaction



c) Duration

On average, it took 24 workdays between the filing that begins the process and the first procedural order. For the sixteen cases in which negotiation took place, the average time between the judge's first order and the end of negotiations was 183 workdays. The single completed case took 522 workdays and the alleged violator complied with the terms of the negotiated settlement after 281 workdays, although the deadline fixed by the judge had been 90 workdays (Table 2).

Table 2: Duration of lawsuits in three procedural phases

<i>Procedural phase</i>	<i>Work day duration and number of cases</i>
Until the first procedural order	24 (n=50)

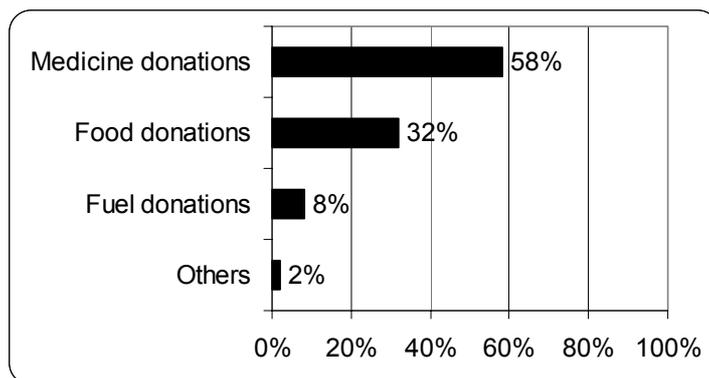
Between this order and the negotiation	183 (n=16)
From the negotiation until the end	281 (n=1)

5.3. Settlement offers in criminal enforcement

a) Content and beneficiaries

Most of the offers proposed by the Ministério Público (92%) requested social assistance, particularly donation of medicines and food (Figure 3). IBAMA was the beneficiary of few donations, which were requested in only 8% of the offers. All of the settlement offers under civil liability³⁰ requested seedlings of valuable tree species as a way to repair environmental damage. .

Figure 3: Frequency of the types of settlement offers in 50 lawsuits



b) Value of settlement offers

In terms of US dollars per cubic meters of roundwood, the value of settlement offers has diminished from 2000 to 2003. For instance, in 2000 the average amount was US\$ 511 per cubic meter of roundwood, while in 2003 it had dropped to US\$ 45 per cubic meter. These averages are set forth more fully in table 3.

We also found that the variation in the penalties measured in cubic meters of roundwood diminished dramatically over time. For instance, the amount varied from US\$ 55 to US\$ 1,918.00 in 2000. By 2003, the variation was only from US\$ 12 to US\$ 30.

The Procurador - prosecutor- from the MP (see footnote 22) told us that although currently the MP calculates the value of the penalty based on IBAMA's fines, previously, there was no policy for determining penalties. IBAMA establishes its fines based on a legislative decree³¹, which was meant to implement the Environmental Crimes Law. As an example, the fine

³⁰ Civil liability is negotiated as part of the criminal negotiation settlement

³¹ Decree N 3.179 from 1999

for illegal transport varies from US\$ 28.50 to US\$ 143.00 per cubic meter of roundwood³². Whether IBAMA chooses the minimum or maximum penalty seems to depend upon the kind of wood at issue. To support the conclusion that the MP now bases its penalties on those of IBAMA, we tested the correlation between them. In 2000 the correlation was 0.77; in 2003 it was 0.99, which is virtually perfect.

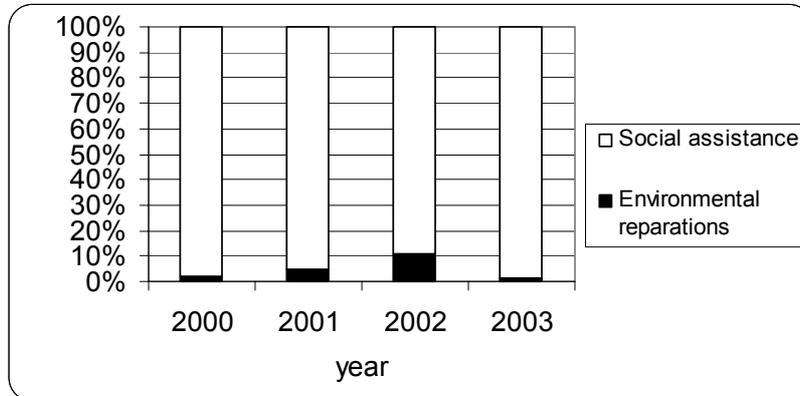
Table 3: Average values of settlement offers in 2000-2003 (in US\$ per cubic meter of round wood)

<i>Year</i>	<i>Number of cases (45)</i>	<i>Civil Liability (US\$)</i>	<i>Criminal Liability (US\$)</i>	<i>Total of settlement offers (US\$)</i>
2000	5	10.60	500.50	511.00
2001	16	9.70	185.40	195.00
2002	21	3.80	29.40	33.00
2003	3	0.70	45.00	45.70

As can be seen in table 3, the proposed penalties are far higher in the case criminal liabilities than civil liabilities. Furthermore, offers proposed under criminal liabilities represented 98% of the total amount proposed in 2000 and 99% in 2003 (Figure 4). Proposed penalties under criminal liabilities are directed to social assistance projects and only those under civil liabilities have included environmental projects. This means that, during 2000-2003, an average of 95% of the proposals involved social assistance and only 5% environmental reparations.

Figure 4: Proportion of proposed penalties directed to social assistance and environmental reparations

³² Article 32 of Decree N 3.179 from 1999



Finally, we verified that the values of settlement offers for legal entities are higher than for individuals (see table 4). For example, the average settlement offer for legal entities (US\$ 217.20 per cubic meter of timber in 25 cases) was about four times higher than for individuals (US\$ 54 per cubic meter of timber in 20 cases). Our evidence suggests a simple explanation. Most of the actions against individuals involved actions against truck drivers for illegal transport, which results in less culpability than for those responsible for cutting and selling illegal wood.

Table 4: Average values of proposals to persons and legal entities

<i>Type of offer</i>	<i>Values</i> <i>(US\$ per cubic meter of timber)</i>	
	<i>Individual</i> <i>(n=23)</i>	<i>Legal entity</i> <i>(n=27)</i>
Civil liability	5.50	7.20
Criminal liability	48.60	210.00
Total	54.10	217.20

c) Settlement offers versus negotiated settlement

The values of negotiated settlements were lower than the offers originally made by the MP. In eight cases concerning only wood, the average value of the negotiated settlement was 26% of the original offer³³.

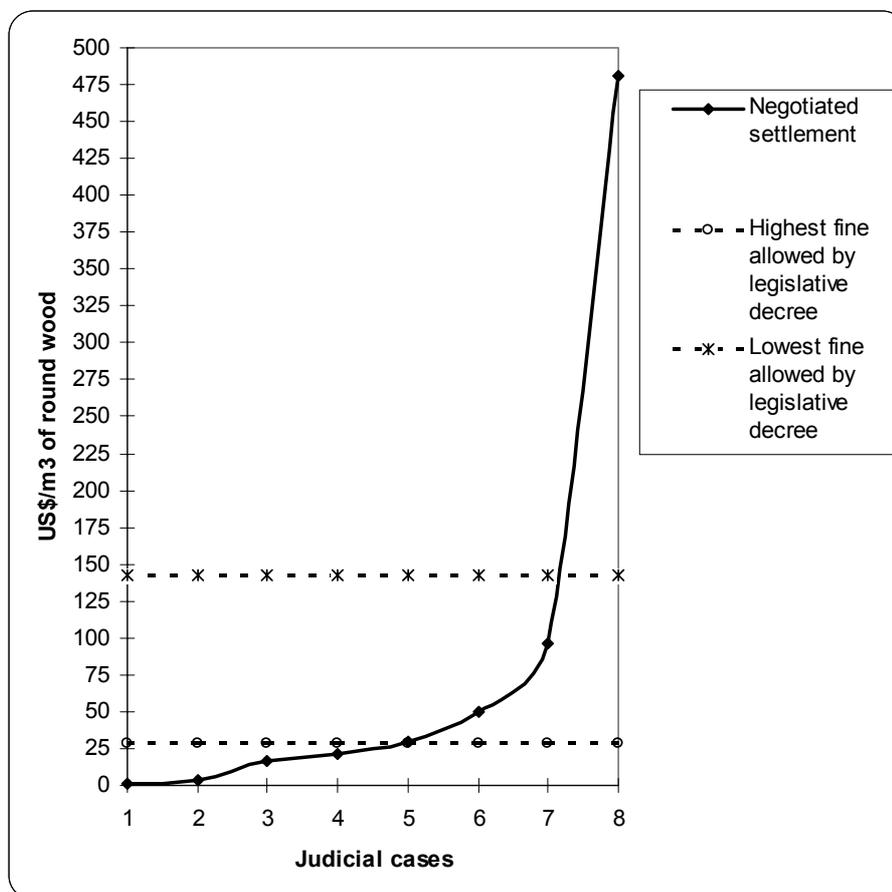
The values of the negotiated settlements varied from US\$ 0.77 to US\$ 480.50 per cubic meter of timber. We believe that this variation was due to the lack of a policy establishing penalties for most of the period we studied.

³³ In one of these cases, the negotiated value was 127% higher than the offer because there was a change in the settlement offer made by the MP before it was accepted.

d) *Comparison between values of negotiated settlement and legal requirements for assessing fines*

By legislative decree, the fine of illegal transport can vary only from US\$ 28.50 to US\$ 143.00 per cubic meter of roundwood³⁴. In only 3 of the 8 cases was the value of the negotiated settlement within the range permitted by the legislative decree. In four cases it was below the range and in one case it was three times the higher than the maximum (Figure 5).

Figure 5: Comparison of values between 8 negotiated settlements and the penalty required by legislative decree (US\$ per cubic meter of round wood)



e) *Difference between the negotiated settlements for persons and for legal entities*

The average amount negotiated with legal entities in four cases (US\$ 126.00 per cubic meter of timber) was 5.5 times higher than the one negotiated with individuals (US\$ 22.60 per

³⁴ See footnote 29

cubic meter of timber). Hence the pattern of establishing higher penalties for legal entities observed in the offers continued in the negotiated settlements.

f) Complying with the terms of the negotiation

The alleged violator must comply with the terms of the negotiated settlement in the period agreed to under the settlement, such as, for example, a donation of US\$68.50 in food per month for one year beginning on a certain date. However, in only three of the ten negotiated cases, was there compliance with the agreed upon deadlines. This failure to comply with the agreed upon schedule can lead to a punishment for the violator, such as a criminal action. However, the difficulties in monitoring compliance with the agreements – due to few personnel responsible for many cases - forced the MP to establish an extra-legal limit of two years for compliance. As a result, in practice the MP has been seeking for punishment only after two years of non-compliance with the settlement.

5.4. Procedural and Jurisdictional Difficulties

a) Difficulty in serving processes

Effective serving of processes must be made under the direction of the federal or state court in the municipality in which the recipient lives. Therefore, even for a proceeding in a court of the state capital, Belem, process servers from Belem cannot serve process for defendants who live in other municipalities. The practice of the Federal Court has been to mail the notification of violation and the date for settlement conference to defendants who do not live in Belem. If the defendant does not appear on the appointed date, then the Federal Court contacts a court in the municipality of the defendant's residence to serve the process. Unfortunately, most rural municipalities in Pará lack personnel to carry out this function. Moreover, even when the municipality does send someone to serve a process, there is no guarantee of success. For example, in one case, the alleged violator lived in Portel, a city 204 miles from Belem. The process could not be served because there was no boat available to get to the alleged violator's house, located on the other side of the river. In other cases, there have been problems in finding alleged violators who supposedly have moved. Communication between the process servers and the special courts is reported to be deficient, even by telephone. As a result of such delays, processes are not served before the conference date.

If process serving continues to fail, the MP has the option of bringing a criminal action against the alleged violator. In criminal matters, process serving may be made by publication.

Curiously, in three cases in which the violators lived outside of Pará, the process was served successfully. This suggests that the support of the state court in Pará is inadequate, which constitutes a bottleneck that needs to be addressed.

b) Jurisdictional problem between the federal and state judicial systems

Although the Brazilian constitution establishes the jurisdiction to judge environmental matters, it is not very well defined. Until mid-2001, there was a judicial opinion from the Superior Court (STJ) that established that federal courts had jurisdiction over crimes against fauna and, through extension, all environmental matters. However, this judicial opinion was subsequently

revoked by the Superior Court and not replaced. The Superior Court now considers jurisdiction over environmental matters to be shared between federal and state courts³⁵.

Confusion over the jurisdiction of state and federal courts was causing delays during the period of our study³⁶. Fortunately, there is now a consensus that there is shared jurisdiction and, therefore, the jurisdictional problem has receded. As a result, most of the cases we saw in the federal court are now in state courts.

6. Discussion

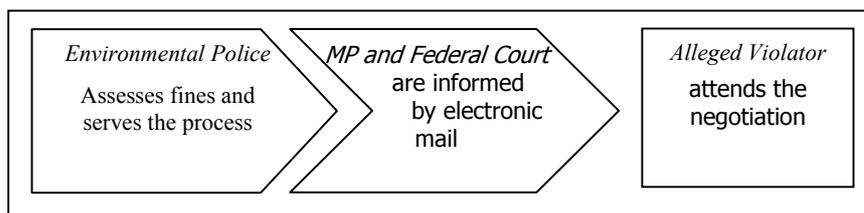
6.1. Improving prosecution

Delays in the prosecution of environmental crimes in Pará appear to be caused by deficient coordination among the responsible institutions. Some innovative experiences in the municipality of Blumenau in southern Brazil suggest a solution to this problem.

In Blumenau, the state environmental police (the inspectors), the MP and the Federal Court agreed to improve their coordination to enforce the environmental crimes law. To that end, the federal court reserves two days per week for environmental negotiations. As a result, the environmental police serve processes at the same time that they assess a fine because they know when the federal court will be available for negotiation (see figure 6). Then the environmental police communicated by electronic mail to both the court and MP: 1) the fine; 2) the date for the negotiation; and 3) the success of serving of process. As a result, the court and the MP are prepared on the day of negotiation. About 95% of the violators attended the negotiations within 30 days of the alleged violations, compared to only 16% for the 16 cases in Belem.

Improving the speed and quality of prosecution in Pará requires closer coordination among the inspection agencies, prosecutors and courts. In Pará the federal court is only present in three locations, whereas the state court has 103 offices covering 143 municipalities. As a result the state court will be key for improving environmental enforcement in Pará, especially now that it is clear that it has jurisdiction over environmental matters. Resolving the difficulties of serving judicial processes will require greater resources. More critically, the court will need to coordinate closely with IBAMA, the environmental police and the MP.

Figure 6: Plan of integration in Blumenau, southern Brazil



³⁵ For cases that affect federal lands, such as indigenous areas, jurisdiction is exclusively federal.

³⁶ This jurisdictional problem led to the delay of 46 workdays (on average) in 26 cases.

6.2. Strengthening environmental conservation and recovery

a) *Investing in environmental funds*

We have observed that the terms of most of the negotiated settlements in Pará provide for social assistance but not for repairing environmental damage. This is true even though the environmental crimes law explicitly calls for the latter. Furthermore, the determination of penalties involving reparation of environmental damage is difficult for alleged logging crimes in the Amazon, due to lack of information and resources of the environmental agencies. In Brazil, the MP has the power to order investigations and analysis, but not to pay for them. This is the responsibility of the requested institutions.

For instance, in two of the cases that we sampled, the federal court requested information from IBAMA about the environmental damage caused by the alleged crime. IBAMA provided the requested information, but it refused to continue responding to such requests due to a lack of financial resources and the high cost of these assessments³⁷. Because most of the alleged violations were for illegal transport and the area from which the logs had been harvested was unknown, it was impossible to determine the environmental damage generated. This lack of technical support to the MP and Federal Courts has led to the adoption of fines aimed at social assistance rather than reparation of environmental damage in the negotiated settlement. This problem is not restricted to Pará and is likely to be common elsewhere in Brazil

Channeling collected penalties and other relief to trust funds aimed at repairing environmental damage in general could be a solution for this and other problems. In the absence of a clear connection between an alleged violation and the environmental damage caused, collected penalties could be placed in a trust fund devoted to repairing environmental damage elsewhere or supporting the work of environmental agencies. There is an acute need for increased funding of environmental agencies in the Amazon region. For example, in 2002 the budget for Pará's environmental agency was only 18% of the amount originally approved³⁸. We recommend investing the penalties collected in endowment funds, although there are few of them in Brazil.

b) *Establishing standard values for negotiated settlements*

The environmental crimes law established that the violator must repair the damage that results from the violation, unless it cannot be repaired³⁹. Typically the environmental damage associated with a particular crime cannot be established and, as a result, the penalty has been to provide social assistance. We suggest that the MP begin asking violators and courts for payment of penalties for environmental crimes into environmental funds instead of asking for social assistance. It will also be necessary to establish a standard for calculating the penalty that is better than using IBAMA's fines. The value of the penalty should be calculated so as to reflect the real damage to the environment caused by the crime and to deter future criminal activities. For example, the fine should recover at least the economic benefit that was gained by committing a crime.

³⁷ Prosecutor Felício Pontes Jr.

³⁸ Neal, Betsey. "Uma experiência da sociedade civil de intervenção no orçamento federal." *Orçamento e Política Ambiental*. Brasília. n. 4. p. 1-7, 2002.

³⁹ Article 27 of Law 9605 from 1998.

Although it is not easy to establish a penalty policy for logging violations - which have different levels of intensity and eventually present secondary damages such as fire - there are studies that can help establish some parameters. For example, based on Barreto and Brito (2003) it is possible to establish that US\$ 17.15 per cubic meter of roundwood would be sufficient to repair an area of intensively logged forest equivalent to that which was damaged. This value is based on the costs for regenerating the area and considers carbon loss, but biological diversity. We propose this value as a baseline that will need improvement.

7. Conclusion

The federal government and some Amazonian states have been promoting sustainable forest management. Illegal logging in the Amazon and in the Brazilian state of Pará threatens the government's ability to protect the integrity of the largest tropical forest in the world. This illegal logging, which is very profitable, can only be controlled through effective enforcement that eliminates the incentives to log illegally. One step to that end is the Environmental Crimes Law of 1998. We wanted to find out how well the new law was working to protect forest resources in the Amazon. Our study is based on sampling and analysis of judicial actions as well as interviews concerning forestry crimes in the federal courts of Belém, the capital of Pará.

We conclude that enforcement of the new law has not yet succeeded in eliminating the incentives to log illegally. Fortunately, one of the problems that we identified, a very specific and acute jurisdictional problem between the federal and state judicial systems, has already been solved. However, other problems remain. We conclude that two principle obstacles to the enforcement of the new environmental crimes law arise from: 1) the lack of coordination between the agencies responsible for applying the law; and 2) the lack of connection between the penalties imposed on violators and both the amount of damage caused and the ability to use the penalties to repair environmental damage.

We propose concrete solutions to both of these problems. These solutions include: 1) adaptation for Pará of communication methods already used successfully in another part of Brazil; and 2) use of environmental funds and an adequate penalty policy both to increase deterrence and to shift them toward repairing environmental damage.