

ENFORCEMENT AGAINST ILLEGAL LOGGING IN THE BRAZILIAN AMAZON

Brenda Brito^{*}
Paulo Barreto[†]

Abstract

Since the passage of the Brazilian Environmental Crimes Law in 1998, enforcement against illegal logging in the Brazilian Amazon has improved, but deforestation is still increasing. We investigated fifty-five cases of environmental damage to the forest sector in the state of Pará, both in the administrative and judicial proceedings, and identified seven main problems for the effective enforcement. We propose some solutions, which include (i) increase the transparency of the enforcement actions, (ii) change the enforcement strategy to prioritize the punishment of the major violators and (iii) improve articulation and communication between agents of control.

^{*} Lawyer, Vice-Executive Director and Assistant Researcher, Imazon

[†] M.Sc. Forest Sciences (Yale University), Senior Researcher, Imazon

1. Introduction

Deforestation and illegal logging in the Amazon are a concern because of the threats they pose to the region's rich biodiversity and because of their contributions towards climate change. These two activities are largely responsible for Brazil being the world leader in forest loss from 2000 to 2005¹, accounting for 42% of global forest losses.

Faced with national and international reactions against the continuation of illegal logging and the increase in deforestation, the Brazilian government has increased its efforts to protect the Amazon Rainforest based on the Environmental Crimes Law enacted in 1998 and on a Decree enacted in 1999². One piece of evidence of this effort was a 180% increase in the total amount of fines issued annually by Ibama – the Brazilian environmental agency – for environmental infractions in the region from 2001 to 2004 (from US\$ 103 million to US\$ 290 million³).⁴

However, such efforts need improvement, since up to now, the federal government's actions have not significantly reduced illegal activities and deforestation has increased. For example, the volume of illegally obtained logs dropped to only four percentage points from 2001 to 2004: from 47% to 43%.⁵ Illegality may be even more widespread because of flaws in evaluating approved forest management plans in the field. Additionally, the average annual deforestation rate during the six years after the enactment of the Environmental Crimes Law (2000 to 2005) increased 18% in relation to the previous six years (1994 to 1999).⁶

¹ Food and Agriculture Organization of the United Nations (FAO). 2005. Global Forest Resources Assessment 2005. FAO. Rome, Italy.
<http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/008/a0400e/a0400e00.htm>

² Federal Law 9.605/98 and Federal Decree 3.179/99.

³ US\$1.00=R\$2.11 on April 25 2006.

⁴ Based on data from the Ibama Fine Collection System (Sistema Integrado de Arrecadação e Collection - Sissar) supplied by Maria Silva, e-mail message to first author, 01 December 2005. Since the reference value for the fines remained the same during the period, in line with the decree that regulates the environmental crimes law, the increase in the total amount of fines means a real increase in enforcement efforts.

⁵ The illegality estimate considers the volume of logs authorized by Ibama from areas to be deforested and under forest management in relation to the estimate of the total volume harvested. Illegality estimate in 2004 in Lentini et al. *Fatos Florestais da Amazônia 2005*. (Imazon) (2005). 82-84.
<http://www.amazonia.org.br/guia/detalhes.cfm?id=189125&tipo=6&cat_id=44&subcat_id=185>.

⁶ According to the National Institute for Space Research (Inpe), the average annual deforestation from 2000 to 2005 was 21,700 km² as opposed to 18,330 km² from 1994 to 1999. Deforestation data are at:
<<http://www.obt.inpe.br/prodes/prodes>> .

There is evidence that the persistence of environmental problems results from the high level of impunity for environmental crimes. For example, the Federal Audit Court (Tribunal de Contas da União - TCU), the agency responsible for overseeing the application of public resources in Brazil, found in 1999 that Ibama collected only 14% of the amount owed in Brazil between 1998 and 1999⁷, including charging of tax assessment notices, registration of companies and licenses. In relation to collection of fines, the TCU identified the following hindrances: (i) mistakes in filling out 80% of the fine assessment notices; (ii) deficiency in the Ibama data base, and (iii) delay in analyzing defenses, which on average lasted 136 days in the first of four stages of judgment in 11 Brazilian States. To solve such problems, the TCU proposed several solutions, but there were few advances, since only 2% of the amount of fines recorded for the Amazon was paid during 2001-2004.⁸

Besides the TCU analyses, Ibama employees pointed out other factors that influenced the poor efficiency of the environmental crimes law, including: (i) lack of personnel and (ii) agreements made between Ibama and the violators to substitute reparations of environmental damages for payment of fines. However, we did not find analyses of the role of these factors in the enforcement of the law.

To discover the main obstacles to application of the environmental crimes law in the Amazon forestry sector, we investigated 55 cases of forestry infractions in the State of Pará, which led to the same number of administrative and judicial cases. We have chosen cases from Pará for two reasons. First, in 2004 the state was the main timber producer of Amazon, accounting for 45% of total production.⁹ Second, the state was the second-ranked state in deforested areas and the leader in the total amount of fines issued by Ibama.

The study consisted of collecting data from records of administrative and judicial cases, interviews with Ibama, Public Prosecution Service (Ministério Público),

⁷ Case in the Federal Audit Court 930.263/1998-7.

⁸ Based on data from the Ibama Fine Collection System (Sissar) supplied by Maria Silva, e-mail message to first author, 01 December 2005. On 04 February 2006, the newspaper O Estado de São Paulo published an article entitled "More than half of the timber harvested in the Amazon is wasted" in which it reported a rate of 11.5% in fine collection in the Amazon for this same period, according to data supplied by Ibama. We sought to clarify with the Ibama collection sector which of these numbers was correct, but did not obtain an answer until April 2006.

⁹ Lentini, Marco, Veríssimo, Adalberto and Pereira, Denys. *The Expansion of Logging in the Brazilian Amazon*. State of the Amazon. V.2 (Imazon) (2005) <<http://www.imazon.org.br/especiais/especiais.asp?id=318>>

Federal Justice and literature review. After presenting results, we discuss measures for mitigating or eliminating barriers to the effective enforcement of the law.

Finally, it is necessary to note that a potential reason for low efficiency in applying the law is corruption, ranging from fraudulent legalization of illegal operations to the inability to punish violators.¹⁰ However, this study did not assess the extent of this problem due to the difficulty in obtaining data on the issue.

2. Overview of illegal logging in Brazil

The Brazilian Amazon includes nine States and covers 5 million km², which corresponds to 59% of Brazilian territory. The estimated gross income for the timber sector in the Amazon for 2004 was US\$ 2.3 billion and in the same year the sector was responsible for generating 380,000 direct and indirect jobs¹¹. Also in 2004, total roundwood production reached 24.5 million cubic meters. Almost two thirds of this amount was consumed by the Brazilian market and 36% was exported¹².

Information regarding illegal production is still not precise, but there is evidence that at least 43% of production for 2004 was illegal, based on the total of roundwood produced and the total authorized for harvest in the same year (14 million cubic meters)¹³. Nonetheless, there is evidence that illegality is actually higher, since many loggers authorized to harvest do not follow the proposed practices¹⁴. The extent of this problem is uncertain, since there is no independent and systematic implementation of forest management in the region.

3. Environmental liability in Brazil and institutions responsible for its enforcement

The enforcement of the environmental crimes law in the Amazon forestry sector is largely done by Ibama, the Ministério Público and the courts. Up to 2004, the

¹⁰ The Brazilian magazine *Veja* reported that since 2003 more than 60 Ibama employees have been charged with corruption crimes. One case involved an attorney for the agency who was responsible for frauds equivalent to R\$ 4 million. He was transferred to another government agency and the administrative proceeding to investigate his involvement had not been concluded. Source: Coutinho, L. As 7 pragas da Amazônia. *Revista Veja*. 12 December 2005,102-112.

¹¹ *supra*, note 9.

¹² *supra*, note 9

¹³ *supra*, note 5

¹⁴ Barreto, Paulo and Souza Jr., Carlos. *Controle do Desmatamento e da Exploração de Madeira na Amazônia: diagnóstico e sugestões*. (Ministério do Meio Ambiente/Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis) (2002).

state environmental and environmental policy agencies were doing little in this sector in the region.

Verification of an environmental infraction or crime may occur through denunciation to Ibama or the Ministério Público or also through Ibama enforcement operations. In this paper, we deal with the punishment process beginning with Ibama verifying an infraction, without identifying the origin of the enforcement action (if derived from a denouncement or from a routine operation).

(1) Beginning of the punishment process

Upon verifying an environmental infraction, the Ibama agent issues a record of the infraction describing the illicit act and forwards this document to the Ibama Executive Agency overseeing the area where the infraction took place. The infraction record leads to an administrative proceeding at Ibama and if the act practiced is also considered a crime according to law, Ibama communicates that occurrence to the Ministério Público (figure 1). The Ministério Público should evaluate the occurrence and propose one of the following options in the Court:

1. the dismissal of the case when the act of the alleged violator is considered insignificant;
2. a kind of plea-bargaining prior to any judicial decision, which is a right of the 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; or
3. a criminal action

(2) Administrative proceedings at Ibama

In the collection process for the fines issued by Ibama, the violator may present a defense in up to four stages. The violator may also contest the fine issued by Ibama in the Federal Courts, which we call a judicial defense.

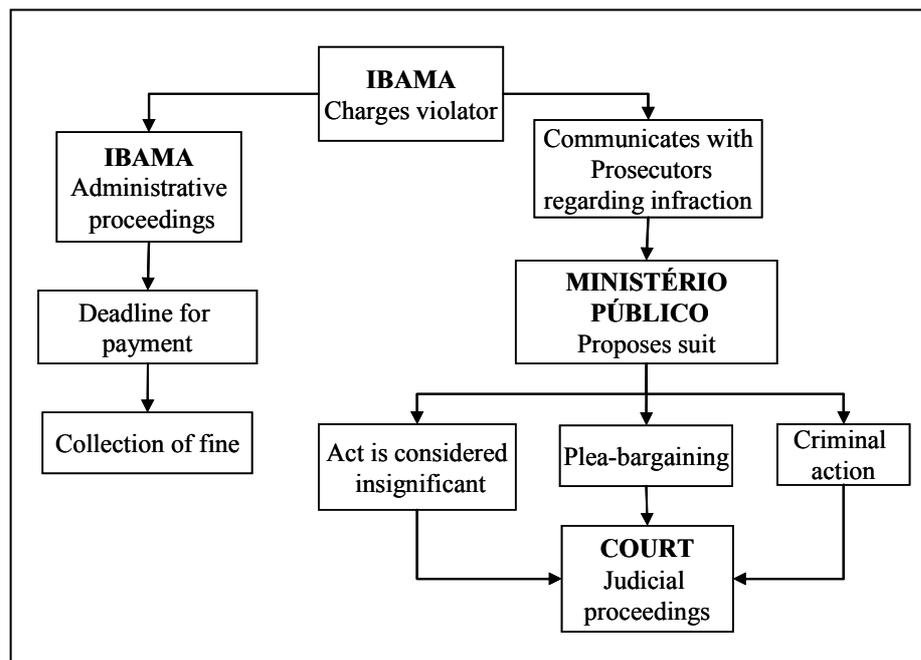
If the fine is upheld and is not paid within the appropriate period, the collection phase begins (figure 1) and the name of the violator is recorded in a registry

of Federal Public Sector Unpaid Credits (CADIN in Portuguese). Next, the violators name is listed in another registry – Active Federal Debts (Dívida Ativa da União) – which makes judicial collection of the debt possible.

(3) Judicial proceedings

During the court proceedings when plea-bargaining is possible, the Federal Court must locate the alleged violator and set a date for the settlement hearing. Next, if the negotiation takes place, there is a deadline for the compliance of the negotiated terms during which the Ministério Público and the judge should oversee performance of the agreed-upon activities. 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. If the agreement is violated, the Ministério Público may bring a criminal action against the alleged violator

Figure 1: Commencement of administrative and judicial proceedings for environmental liability in the forestry sector in the Brazilian Amazon.



4. Methods

(1) Selecting the sample

From January 30 to 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 and the environmental crime

committed. 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 Belém. The other cases were in the two other Federal Courts in Pará: Santarém and Marabá.

The 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 sample¹⁵. We also collected data from 55 lawsuits first filed in the Federal Court of Belém during 2000-2003 based on the availability of files at the Court during the period of our data collection. After finishing the analysis of the judicial cases, we collected data from the 55 administrative cases at Ibama corresponding to the same fines that initiated the judicial cases. All administrative cases started between 1999 and 2002.

To verify whether this sample was representative, we consulted a prosecutor from the Ministério Público and the Director of a Federal Special Court¹⁶. 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. We also consulted five attorneys from Ibama in Belém and fourteen at the head office of Ibama in Brasília (the capital of Brazil) about the administrative sample and they agreed that it was representative of their work in that period.

(2) Analysis of administrative cases

(a) Situation and duration

We assessed the efficiency of the lawsuits by considering their duration and the level of fines collected. We estimated the percentages of cases, the value collected and the value involved in each phase identified until the end of March 2003, to standardize the period of analysis for all of the cases¹⁷.

We measured the duration of the lawsuits in each phase, adding the workdays from the moment of issuing the infraction record until finalization of the

¹⁵ 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.

¹⁶ Federal Prosecutor Felício Pontes Jr. and Director Maria das Neves Miranda da Silva

¹⁷ Data collection lasted about one year because of strikes at Ibama and the lack of personnel at the Institute to provide the information requested.

lawsuit or until March 31 2003. The workdays excluded Saturdays, Sundays and established holidays. To understand the central measure tendencies of the lawsuits, we estimated the median¹⁸ of each stage. Additionally, we presented the minimum and maximum lengths of time in each phase to assess the amplitude of length for the lawsuits. That way, we would be able to identify eventual cases of highly effective lawsuits (low duration) or those that were extremely complex or inefficient (greater duration).

(b) Advances and impediments to effectiveness

(i) Insufficient human resources

To evaluate whether or not there were sufficient personnel to carry out the administrative cases, we compared the number of attorneys existing in the Amazon with the number considered sufficient by the Ibama Vice General Attorney. Also, we estimated the number of cases for each attorney responsible for conducting them by considering the number of new fines per attorney in the three States of the region with the greatest incidence of fines in 2004 (Pará, Mato Grosso and Rondônia) and the typical duration of cases during the previous years.

(ii) Incidence of defenses

To evaluate if the amount of the fines influenced the frequency and number of defenses presented, we estimated the median value and the minimum and maximum values of the fines in three situations: (i) cases without defense; (ii) defense only in the administrative proceedings e (iii) defense in the administrative proceedings and judicial defense.

(iii) Sufficiency of means of collection

Ibama allows the violator to pay for the fine in installments. Theoretically, it could guarantee the collection of fines in the long term, although it would reduce the value collected in the short term. To assess the role of this practice in collection, we analyzed: i- the frequency and the amounts of cases in this situation and ii - the amounts collected and defaulted on among these cases. To evaluate if the means for collecting fines were sufficient, we assessed the level of payment of the cases after each collection stage practiced by Ibama.

¹⁸ The median is the number in the middle of a list of numbers placed in increasing or decreasing order; that is, half of the numbers have values higher than the median and the other half have lower values.

(iv) Access to information

We evaluated the level of public access to environmental information at Ibama based on what is provided in Brazilian legislation and the information available in the Ibama's information systems.

(3) Analysis of judicial cases

(a) Judicial proceedings: procedural route, procedural phases and duration

We 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 the end of March 2003, when our data collection ended. We measured the duration of lawsuits in workdays going from the date they began until the end, or until March 31 2003. We also determined the median for each stage to understand the central measure tendencies for duration of lawsuits.

(b) Criminal settlement proposals – nature and compliance with terms negotiated.

We examined the destination of the Ministério Público settlement offers and evaluated the compliance with the terms negotiated by checking the dates when the violators comply with their obligations.

5. Results

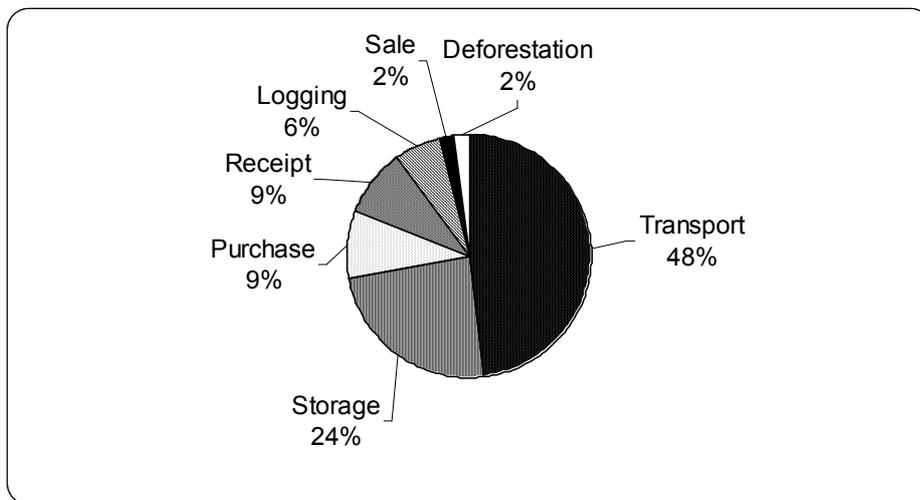
(1) Profile of cases

We found that 53% of the lawsuits were against legal entities and 47% against persons. All of the alleged violators lived in outside of Belém, most in other cities or towns in Pará and three in other Brazilian states (two in the São Paulo and one in Rio Grande do Sul).

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 2).

Crimes related to logging activities (illegal logging and deforestation) represented only 8% of the entire sample (see figure 2). 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 2: Frequency distribution of environmental violations related to logging activities in 55 cases in Pará.



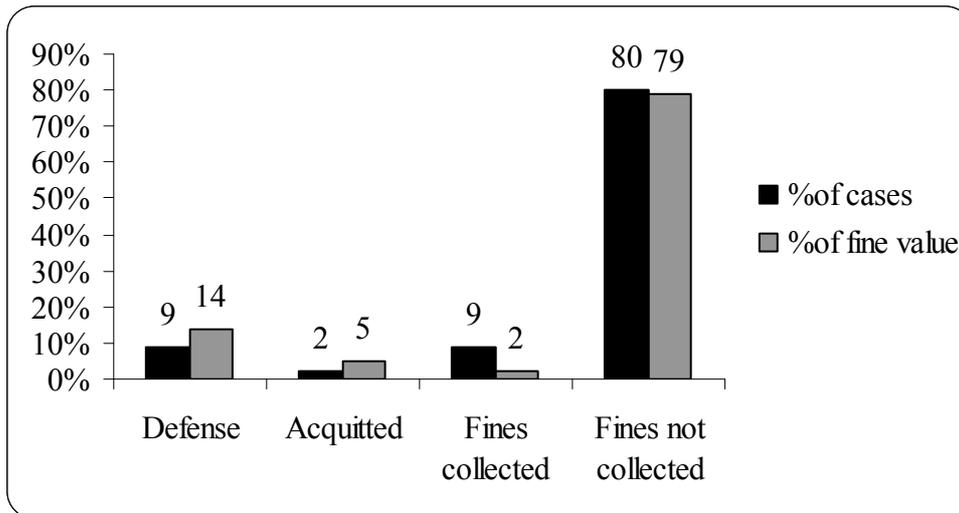
(2) Analysis of administrative cases

(a) Situation and duration

(i) Situation of the lawsuits

Of the 55 lawsuits, only 9% of the convicted cases paid the fines, which represented a collection rate of 2%. Eighty-nine percent were convicted at the first stage and corresponded to 81% of the total value of the fines. Another 9% were in the defense analysis phase presented by the alleged violator and represented 14% of the total value of fines. Only 2% had been acquitted of the accusation and represented 5% of the total value of fines (Figure 3).

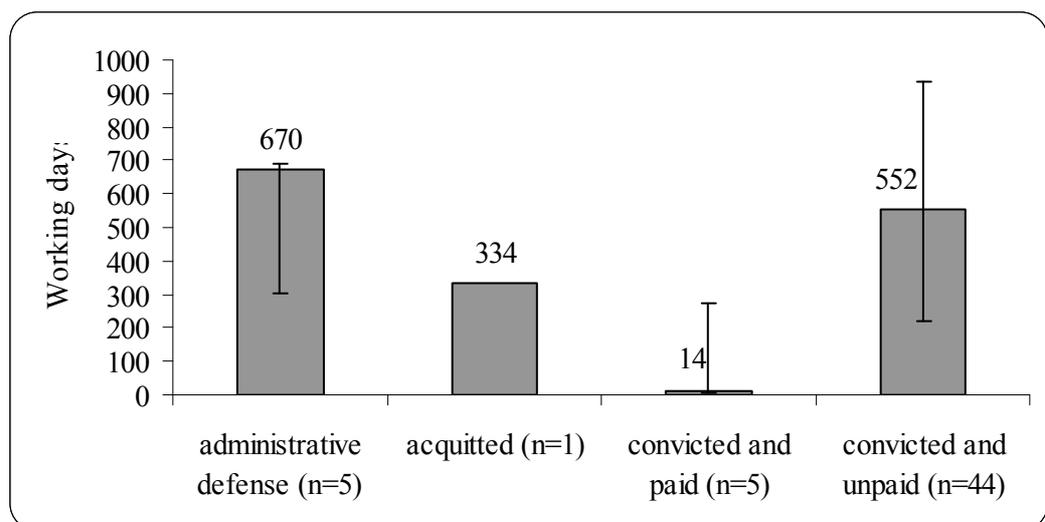
Figure 3: Distribution of the cases analyzed (n=55) in the administrative process phase and participation in the total value of fines



(ii) Duration of the lawsuits

The median duration of convicted and paid cases was 14 workdays, and the duration ranged from 8 to 264 days. The cases that were convicted and did not pay had a median duration of 552 workdays, ranging from 219 to 936 days. The only case of acquittal in the sample lasted 334 workdays. In the cases where an administrative defense was presented, but not analyzed, the median age was 670 workdays, with duration from 305 to 690 workdays (Figure 4). Thus, the alleged violator who presented a defense won more time before being eventually convicted.

Figure 4: Median age, minimum and maximum duration of administrative proceedings according to their progression/results.



(b) Advances and impediments to effectiveness

(i) Insufficient human resources

There are several indications that the number of attorneys at Ibama is not enough to meet the demand. There were 28 Ibama attorneys in the Amazon in September 2005, which represented only 36% of what would be necessary.¹⁹ Additionally, there were no attorneys in one third of the 17 Executive Agencies in the region. There was at least one agency without an attorney in the three States with the greatest number of fines in the forestry sector: Rondônia, Mato Grosso and Pará.²⁰

In fact, the number of cases per attorney is high. For example, if one divides the number of lawsuits begun each year by the number of attorneys in those three States, each one would be responsible for 317 cases in Rondônia, 294 in Mato Grosso and 155 in Pará.²¹ However, considering that the lawsuits can last for several years, each attorney may have to deal with more than a thousand cases of infractions against flora.

To try to overcome that deficiency, during the months following the major enforcement operations, there is a temporary relocation of attorneys to the Executive Agencies with more cases. Nonetheless, the effect of this is merely palliative. According to one attorney of the Ibama Legal Division in Belém, the Institute relocates inspectors to strengthen enforcement operations that result in a large number of fines. However, the attorney stated that this reinforcement of the Legal Division, besides being provisional, has not been proportional. Because of this, the cases take time to go forward, especially because they demand follow-up from the attorneys in various stages after the initial phase.

(ii) Incidence of defenses

The incidence of defenses contributed to low collection and delays in the cases – mainly because the greatest violators presented defense most frequently. For example, 31% of the alleged violators presented a defense at Ibama in the

¹⁹ Isabella Lemos, e-mail message to first author, 26 September 2005.

²⁰ Isabella Lemos, e-mail message to first author, 13 December 2005.

²¹ Based on Ministry of the Environment. Presentation of the Plan for Deforestation control and Prevention (Apresentação do Plano de Controle e Prevenção ao Desmatamento) (2005).

administrative proceedings, but those cases were responsible for 52% of the total value of the fines (figure 5).

The median value of the fines for the 5% of the alleged violators who contested the fines at Ibama and judicially was almost double that for those defending themselves only at Ibama and 19 times greater than the median of those presenting no defense (figure 6).²²

Figure 5: Frequency of defense against fines and respective share of the total value of the fines. (n=55)

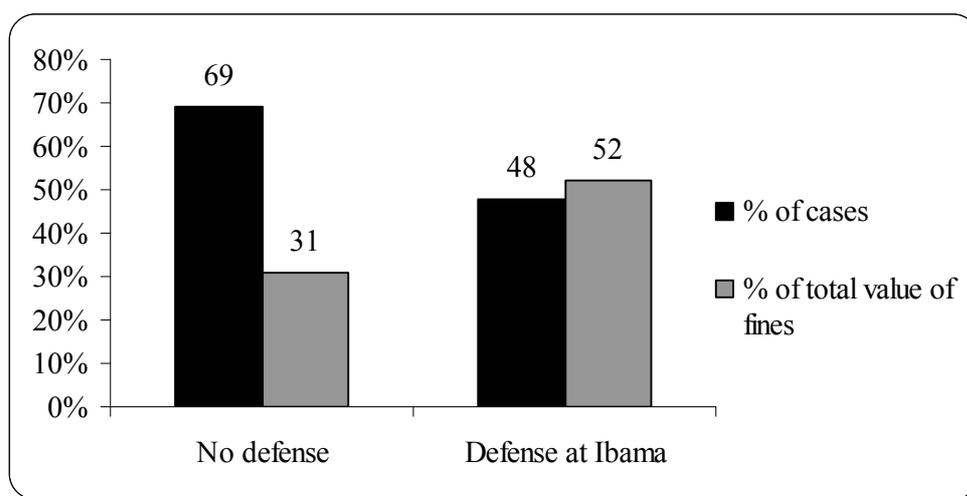
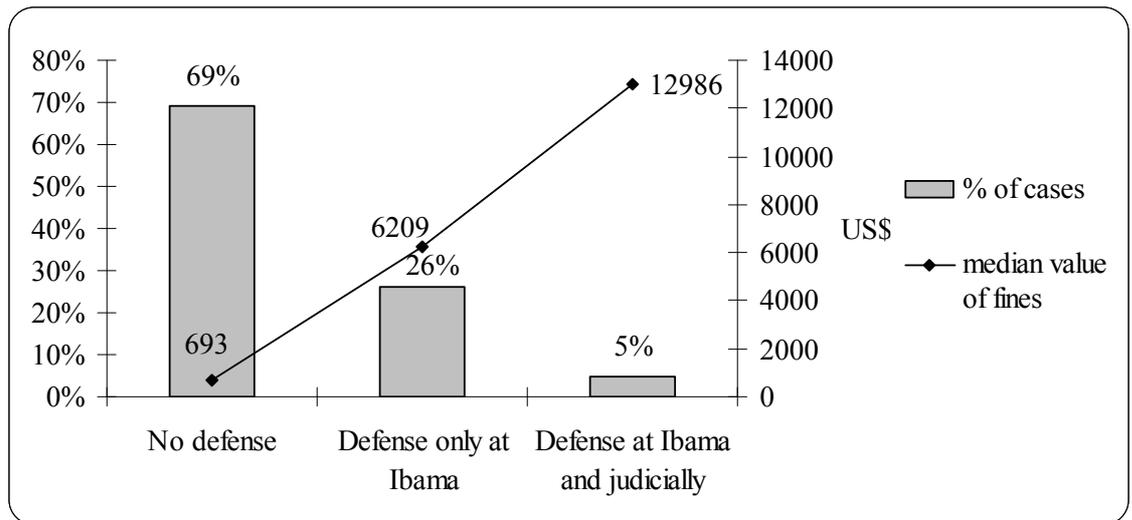


Figure 6: Average values of by incidence and type of defense.

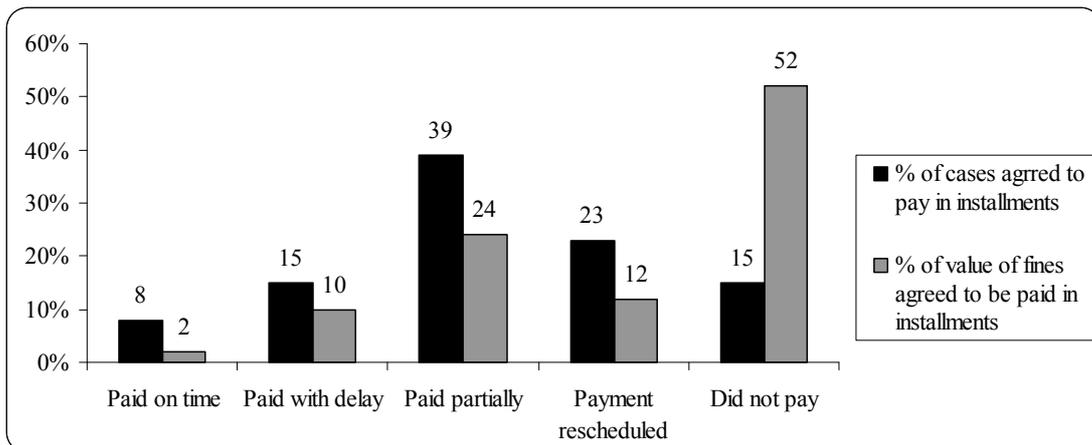
²² The median value of the fine for the alleged violators who defended themselves only at Ibama was R\$ 13,100.00, with a minimum of R\$ 3,053.00 and maximum of R\$ 150,000.00; while the median value for those also defending themselves by judicial means was R\$ 27,400.00, with a minimum of 10,000.00 and maximum of R\$ 188,000.00. Fines of the accused presenting no defense varied from R\$ 207.00 to R\$ 436,788.00, and the median value was R\$ 1,463.00. The average of these cases with the maximum value R\$ 19,039.00 and, excluding this figure, it was R\$ 7,748.00



(iii) Failure to pay for the fines in installments

Collection is low, partly because the violators agree to pay for the fine in installments, but the majority does not pay them. Payment in installments was used in 24% of the total of cases and represented 6% of the total value of fines. However, only 8% of the violators who agreed to do it really paid without delay, totaling 2% of the value of fines in this sample (Figure 7). The majority of these cases paid on average only one installment (39% of cases and 24% of the value parceled) or even rescheduled the payment (23% of cases and 12% of the value parceled). The greatest amount (52%) was concentrated in the cases that did not pay any installment.

Figure 7: *Situation of payment for the fines in installments (n=13).*



(iv) Insufficiency of means of collection

The means Ibama uses to collect the fine from the violators are: (i) recording the debtor's name in the list of debtors of the federal government (CADIN) 75 days after the violator has been informed of the debt, (ii) suspension of services for the debtor, (iii) registration of the violator's name in the Active Federal Debts list (iv) judicial collection of the fine. Registration in CADIN means the debtor cannot obtain tax and financial incentives and credit from public resources, or sign conventions, agreements, settlements or contracts involving disbursement of public resources.²³

Nonetheless, such means were insufficient for stimulating payment of the fines. By March 2003, 58% of cases, totaling 45% of the total value of fines, had already been recorded with CADIN, but none were settled. The coercive measures caused by registration in CADIN seemed not to inhibit the majority of violators. Very probably, this situation resulted from the fact that many of the fines were issued against small-scale violators (generally drivers of illegal loads) who are less inclined to sign contracts with the public sector.

Additionally, the procedural steps are slow and few cases reach judicial collection. For example, 20% of sampled cases were recorded with the Active Federal Debts list, but only 7% of the total sample was in the judicial collection of the fine stage. The slowness is aggravated by the lack of priority assigned to collection of the largest cases. The average value of the fines in the judicial collection phase was only US\$ 1,659.00 and their total value represented only 1% of the total value of the fines issued.

One attorney of Ibama declared that his experience with judicial collection in the State of Mato Grosso (the second-largest timber producer in the Amazon) was generally a failure due to the following factors: (i) many cases were small debts whose collection was not worthwhile; (ii) locating the violators was difficult; and (iii) small-scale violators do not have assets that may be seized and later auctioned in the judicial collection. Thus, many judicial collection proceedings are paralyzed and the fine is not paid.

Even restricting services does not seem to have an effect. However, the problem with this measure is that it is provided for by an Ibama administrative rule, not

²³ Article 6 of Federal Law No. 10.522/02.

by law. Since Brazilian legislation requires that collection procedures for public agencies must be provided for by laws, violators who contest this measure in the courts are victorious, and Ibama is forced to provide services and documents.

(v) Low level of transparency at Ibama

National legislation²⁴ guarantees access to information regarding administrative proceedings in general, and in particular that involving environmental infractions. Nonetheless, access to environmental information at Ibama is still precarious. We believe that releasing data would make it possible for civil society to participate in combating the violators and might generate initiatives to stimulate payment of fines. The difficulties in obtaining information lie in the following situations: (i) lack of periodical dissemination of lists of environmental violators to the public in general and (ii) insufficient information in the systems for consulting the progress of administrative proceedings available on the internet.²⁵ The latter is updated, but does not discriminate the type of case, the infraction committed or the procedural stages of the lawsuits.

(3) Analysis of Judicial cases

(a) Procedural Path, phases and duration

(i) 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.

(ii) Phases

Only 2% of the 55 cases were completed and in 18% the alleged violators were complying with the terms of the negotiated agreement, but 70% of these cases had delays in fulfilling the agreement. Two percent had been in continuance for two years.

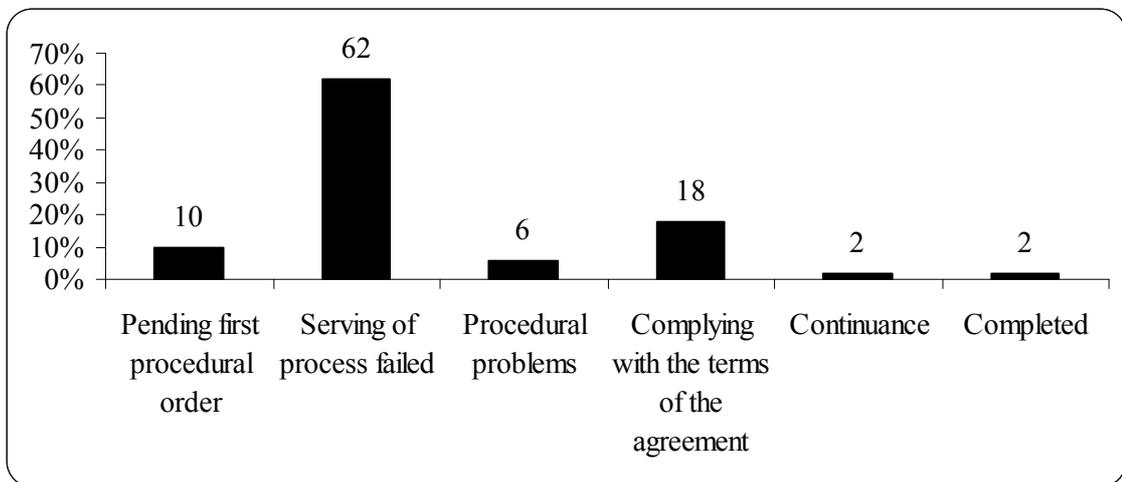
²⁴ Federal Law 9.784/99, which deals with the administrative proceeding, and Law 10.650/2003, which deals specifically with public access to environmental information.

²⁵ <<http://www.ibama.gov.br/protocolo>>.

This kind of continuance can last for four years and occurs as part of a formal agreement with the violator, but it is only available under limited circumstances²⁶. 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 62% of the cases the alleged violators were not found. Ten percent were still waiting for the initial order from the judge. Another 6% presented procedural problems, such as jurisdiction problems between the federal and state judicial systems (figure 8).

Figure 8: Phases of 55 judicial cases

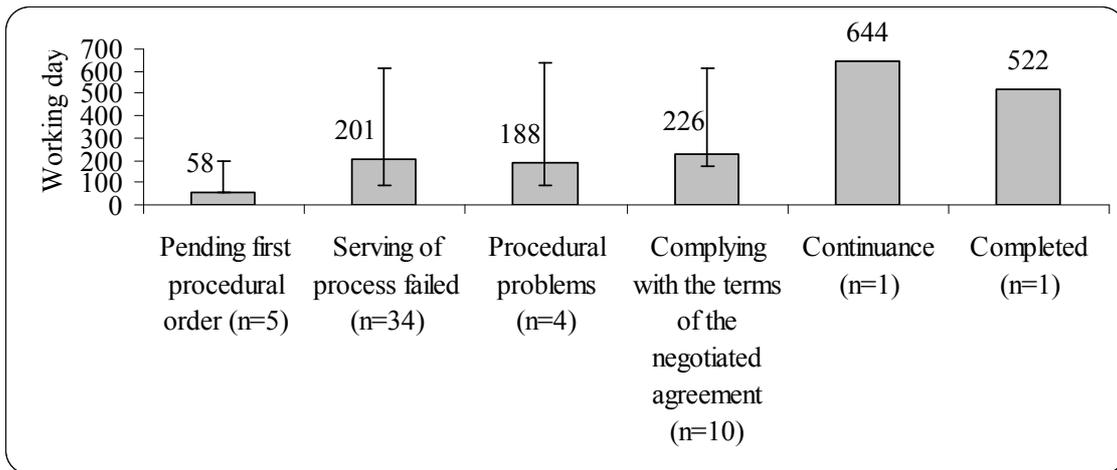


(iii) Duration

The duration of the only completed case was 522 workdays and the case in continuance had been going on for 644 workdays. The median age of cases that were complying with the terms of the negotiated agreement was 226 workdays, with a minimum of 173 and maximum of 614 workdays. The cases in which the violators had not been located had a median duration of 201 workdays, varying from 87 to 614 workdays. The procedural problems caused delays in the lawsuits and their median was 188 workdays, with a minimum of 83 and maximum of 636 (figure 9).

Figure 9: Situation of 55 judicial proceedings with respective median age and minimum and maximum duration

²⁶ When the violator: 1) is not being sued for other reasons; 2) has not been condemned imprisonment in the past; and 3) does not have 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).

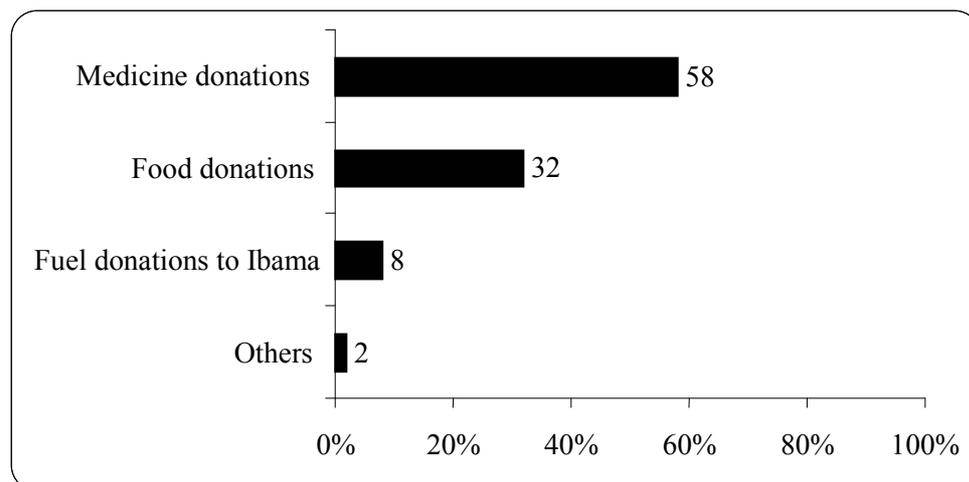


(b) Settlement offers in criminal enforcement

(i) Content and beneficiaries

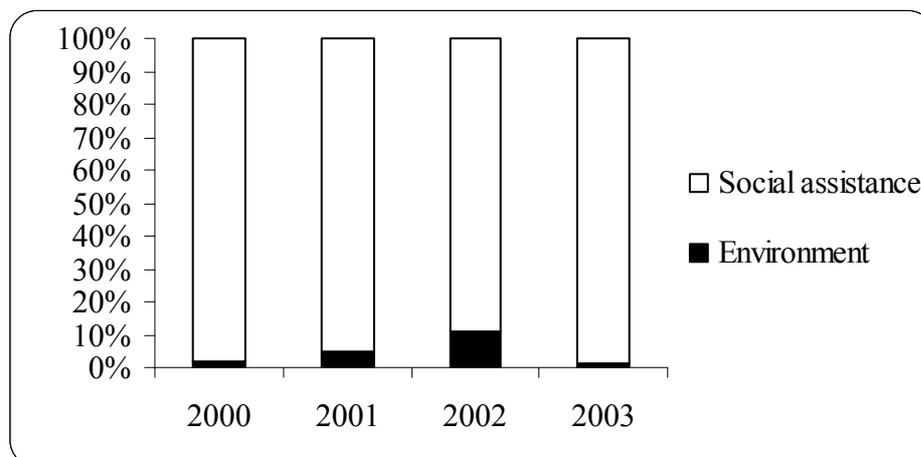
Most of the offers proposed by the Ministério Público (92%) requested social assistance, particularly donation of medicines and food (figure 10). IBAMA was the beneficiary of few donations, which were requested in only 8% of the offers. All of the settlement offers under civil liability²⁷ requested seedlings of valuable tree species as a way to repair environmental damage, but when we compared the monetary value of these seedlings and the value of the other offers regarding social assistance, we found that during 2000-2003, an average of 95% of the proposals involved social assistance and only 5% environmental reparations (figure 11).

Figure 10: Frequency of the types of settlement offers in 50 lawsuits



²⁷ Civil liability is negotiated as part of the plea bargain

Figure 11: Proportion of proposed penalties directed to social assistance and environmental reparations



(ii) 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 a donation of US\$100.00 in food per month for one year beginning on a certain date. Nonetheless, 70% of the violators who signed these agreements were in default, including 20% who had not paid the first installment by the end of data collection for this paper. 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.

6. Discussion and recommendations

(1) Suggestions for successful enforcement in administrative cases

(a) Apply scarce resources effectively

It is very probable that human and financial resources for environmental control will continue to be scarce. Therefore, it will be necessary to use current resources in a more efficient form. One strategy for increasing efficiency would be to concentrate fine collection efforts on the higher fines. In our sample, 16% of cases accounted for 84% of the total value of fines, all of them with fines above US\$24,000. Such a distribution indicates that environmental crimes follow the 80/20 principle – that is, 80% of the effects are derived from only 20% of the causes. Therefore, it would be possible to be more effective by concentrating the efforts of employees on these larger

cases. However, fines for cases in judicial collection were below US\$1,659 and added up to only 1% of the total value sampled. To reverse this situation, it is necessary to establish a minimum amount for a fine to be considered as a priority, which could be done in each IBAMA Executive Agency by evaluating all the amounts of fines according to the 80/20 principle.

However, in order to make the control more effective, the 80/20 principle must be used beginning with the monitoring operations. For example, Ibama could have a goal of issuing every year 1,200 fines against major violators in the Amazon (equivalent to 20% of the some 6,000 fines issued annually over the last few years in the region). According to the 80/20 principle, the 1,200 largest detected infractions would account for 80% of the total value of the 6,000 fines and represent 80% of the environmental damages associated with these fines. The resources saved by not enforcing actions against small violators (who were less relevant and more difficult to prosecute) would be employed mainly in more robust investigations to guarantee punishment of major violators. Additional investigations would involve, among other things, analysis of fictitious companies, tax crimes and corruption among Ibama employees. Additionally, it is necessary to expand enforcement in the area of deforestation, which, in our sample, corresponded to only 2% of cases. In order to achieve results against the big violators, including those actually responsible for ordering the illegal deforestation and the owners of the farms, it would be necessary to broaden investigations in each case to locate violators outside the farms.

There are signs that Ibama and the Ministry of the Environment have begun to recognize the importance of changing their monitoring strategy. For example, the federal plan against deforestation in the Amazon for 2003 promised to use joint investigations by Ibama, Federal Police, Federal Revenue and Customs Administration and Ministry of Labor and Employment.²⁸ However, a 2005 Greenpeace report²⁹ indicates that this aspect of the plan has not advanced yet. Despite this, operations conducted by the Federal Police, Ministério Público and Ibama have demonstrated the great potential for success in strategic investigations of environmental infractions.

²⁸ Brasil. *Plano de ação para prevenção e controle do desmatamento na Amazônia Legal*. (2004) <<http://www.amazonia.org.br/arquivos/101504.pdf>>.

²⁹ Marquesini, Marcelo, Muggiatti, André and Adário, Paulo. *Faltou ação ao plano de ação: relatório sobre as ações do governo para combater o desmatamento na Amazônia entre março de 2004 e maio de 2005*. (Greenpeace) (2005). <<http://www.amazonia.org.br/arquivos/176800.pdf>>

In 2005, two major operations of this type occurred. The first was called Operation Curupira³⁰ and investigated criminal networks, leading to the arrest, in June 2005, of 148 persons³¹, among them business people and employees of Ibama and the Mato Grosso State Environmental Agency. In the months following this operation, deforestation fell significantly and this contributed, together with a drop in the price of agricultural products, towards a 31% reduction in the annual rate for 2004-2005 in relation to the previous year³². The second was Operation Ouro Verde (Green Gold), launched in October 2005, which battled the chain of production and distribution of counterfeit authorizations for transporting forest products.³³

Internal actions by Ibama also point to a change in strategy. The Ibama prosecutors in Brasília cited operations carried out by the Ibama Executive Agencies in the cities of Marabá and Santarém, both in Pará, in which the largest debts were prioritized for beginning judicial collection proceedings. In order to make control more effective, such changes in strategy must be expanded to include all Ibama operations.

(b) Strengthen means for collecting fines

Restriction of services to debtors must be regulated by a law, so that it may be applied without problems. Until this happens, all efforts at enforcement and collecting fines will have a partial effect, since the violator will not pay his or her debt and will continue exercising economic activities without restrictions. For example, a violator fined for transporting timber illegally, can obtain a transportation authorization from Ibama even without paying the fine and continue with business as usual.

³⁰ Alluding to “Curupira,” a legendary being in the Amazon who protects the forests.

³¹ How green was my valley. *The Economist*. 27 April 2006.

<http://www.economist.with/world/la/displaystory.cfm?story_id=6859779>

³² The 31% reduction in the deforestation rate in 2004 and 2005 does not seem to be only the result of routine enforcement, but mainly due to a Federal Police operation that occurred in June 2005 to fight corruption in environmental agencies and to a drop in prices for agricultural commodities (cattle and soy). In the two months before the operation, monthly deforestation was 15% less than in the same months for the previous year, probably largely due to the drop in prices for cattle and soy. On the other hand, in the month after this operation, deforestation was reduced by 95% and there was no other drastic event that might explain such a reduction.

³³ Fanzeres, Andrea. Ladrões de floresta. *The Eco*. 26 October 2005. <<http://arruda.rits.org.br/notitia/servlet/newstorm.ns.presentation.NavigationServlet?publicationCode=6&pageCode=67&textCode=14418&date=currentDate&contentType=html>>

(c) Increase control over payment of fines in installments

Almost 80% of the violators who negotiated payment of fines in installments were in default. In the sample analyzed the amount involved in the installments was 1% of the total of the fines, but according to Ibama lawyers in Belém, the practice of negotiating payment in installments has been increasing in the last few years (2004 and 2005). Apparently, many violators negotiate their debts only to suspend collection and its effects, which include suspension from the list of Federal Public Sector Unpaid Credits (CADIN). This failing is facilitated by the slowness of the current payment control system.

Attempting to resolve this problem, Ibama is implementing a new system for controlling collection, which will be more agile, since it will automatically identify delays in payments. While this system is not fully in operation, control should prioritize the more important cases to make collection more efficient.

(d) Facilitate public access to information

Brazilian legislation³⁴ guarantees public access to information on administrative proceedings in general and in particular those involving environmental infractions. However, access to environmental information at Ibama is still precarious. Improvement in the organization and dissemination of this information would facilitate consultation by the outside public and would also reduce the time that Ibama employees spend attending to internal and external requests. The institute's information systems are not interconnected and do not include relevant details on the lawsuits. This obstacle has already been identified by Ibama, and to resolve it, its Administration proposes to implement a new information system in which documents will be shared electronically and procedural steps will be recorded in real time. However, adoption of this system will not happen in the short term, since financial resources and training for personnel will be required.³⁵

Besides this, there is also no communication between the Ibama and Federal Court systems, which makes follow-up difficult for cases in the two levels of punishment (administrative and judicial). Cases are recorded using the name of the violator and this may vary from one agency to the other due to typing errors and

³⁴ Federal Law 9.784/99, which deals with administrative proceedings, and Federal Law 10.650/2003, which deals specifically with public access to environmental information.

³⁵ Information presented in Merico, Luiz *et al.* *Construindo Caminhos: uma contribuição à transformação do Ibama.* (Ibama) (2005).

abbreviations. That was one of the reasons for the low number of judicial proceedings found during the selection of cases³⁶. To avoid this problem, we suggest that the agencies do not modify the violator's name in recording cases and use as a model the form adopted by the agency that make the first record.

Another measure that would facilitate public access to information would be dissemination of monthly lists of those fined for environmental infractions on the electronic site of each environmental agency, which was regulated by Federal Decree No. 5523 of August 2005. Two potential applications of this list have to do with the financial sector. First, the Central Bank of Brazil has been debating a proposal of resolution which, by the end of 2006, will require the banks to report their operating risks. The degree of risk will be used to stipulate deposits that the banks will need to make to cover eventual losses resulting from risks.³⁷ That way, companies that commit large environmental crimes would raise the operating risk of their financing banks and would oblige them to increase their preventive deposits. Therefore, the banks would need to frequently monitor the company's environmental situation, which would be facilitated by consulting the lists.

Second, in March 2006, the Ministry of the Environment announced³⁸ that it has been planning together with the Central Bank of Brazil measures to require private banks to adopt the Green Protocol (Protocolo Verde). This protocol is an agreement signed in 1995 between the Federal Government and the Brazilian official banks that stipulates adoption of environmental guidelines for concession of credit and tax benefits in order to avoid financing activities harmful to the environment. The list will facilitate the banks' ability to check which companies are prohibited from receiving credit from both public and private banks.

Finally, the list may stimulate voluntary measures associated with social responsibility along the lines of other lists already existing in Brazil. For example, there is a list published by the Ministry of Labor with the names of employers fined for submitting workers to forced labor. This list has received the support of the Brazilian Federation of Banks (an entity bringing together financial banking institutions active in Brazil) who in January 2006 signed an agreement with the Federal Government in

³⁶ *Supra*, note 15.

³⁷ Carvalho, Maria. Bancos vão monitorar risco operacional. *Valor Econômico*. 23 March 2006.

³⁸ Measure announced by the Secretary for Forests and Biodiversity, João Paulo R. Capobianco, in a presentation at the Eighth Convention of Parties to the Convention on Biological Diversity held in Curitiba.

which the Federation recommends to its associated banks not to grant loans to persons who are on the list.³⁹ We believe this measure may be replicated with a similar list of environmental violators.

(2) Suggestions for successful enforcement in judicial cases

(a) Improve articulation and communication between agents of control

The low articulation and deficiency in communication between the agencies involved in establishing responsibility for environmental crimes lead to delays in proceedings. For example, we found a delay of 244 workdays between the charging of a violator by Ibama and the beginning of criminal proceedings, which is enough time for the violator to move to another address and frustrate the service of process, which initiates a lawsuit. In fact, the process servers could not find 62% of the accused. Therefore, articulation and communication between agencies must be improved. 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 Ministério Público 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. Then the environmental police communicated by electronic mail to both the court and the Ministério Público: 1) the fine; 2) the date for the negotiation; and 3) the success of serving of process. As a result, the court and the Ministério Público 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% in Belém.

(b) Link penalties to conservation and to environmental reparation

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

³⁹ <http://www.febraban.org.br/Arquivo/Destaques/show.asp?id_destaque=380>

and resources of the environmental agencies and the Ministério Público. In Brazil, the Ministério Público has the power to order investigations and analysis from other agencies, but not to pay for them. This is the responsibility of the requested institutions.

This situation has improved over the last few years with the hiring of environmental technicians by the Ministério Público. Thus, the prosecutors may receive technical support when they are offering proposals for penal transaction related to damages practiced.

In the cases in which this support does not exist, the difficulties in repairing the direct damages from each infraction could be compensated by directing proposals of plea-bargaining and civil liability towards initiatives linked to conservation. One possibility is to propose donation of resources to environmental fund programs to support activities at the degraded site or in the same degraded ecosystem. These fund programs must have administrative capacity for managing resources and transparency in their action. One example is the Protected Areas of the Amazon Program (ARPA) of the Brazilian Ministry of the Environment, managed by the Brazilian Biodiversity Fund (Funbio), whose principal objective is to create and consolidate 50 million hectares of protected areas in the Amazon. Another option is donation to public or private institutions that have projects for environmental reparation and conservation.

(c) Monitor the compliance of terms of the negotiated agreements

It is necessary to increase the control over compliance of terms of the negotiated agreements, since we detected in our sample a default rate of 70%. The negotiation is a chance given to violators, and if they do not make use of it, they must suffer the consequences of a criminal action. Otherwise, the lack of monitoring and penalties for non-compliance may stimulate an increase in defaults.

In order to help monitor the compliance of the negotiated terms, it is important to facilitate public access to information from criminal environmental proceedings, so that cases in default may be communicated by the society to the Ministério Público. To this end, we suggest that the Court could demonstrate in its system (which can be consulted in the Internet) the date the violators must comply with the negotiated terms in each case.

7. Conclusion

The Brazilian government has demonstrated firm determination in combating destruction in the Amazon through a 180% increase in enforcement efforts from 2001 to 2004. However, deforestation has increased and there was little decrease in illegal harvesting because of the predominance of impunity. This study has demonstrated that impunity occurs at the two levels of punishment, legal and administrative, since out of 55 cases of environmental infractions and crimes, only 2% of the value of the fines was collected by Ibama and only 2% were punished criminally.

The challenges for increasing the effectiveness of the environmental crimes law at the administrative level involve insufficient human resources, low control over payment of the fines in installments, insufficiency of the current means of collection and a low level of transparency in Ibama's action. At the judicial level, we observed a low level of interaction among the agencies responsible for enforcing environmental responsibility, low linkage between the penalties and the crimes practiced and insufficient monitoring of the negotiated terms.

To improve effectiveness of control over environmental crimes, it will be necessary to adopt several measures. Some are complex and may demand negotiations and time. For example, to validate the suspension of services and issuance of documents for violators, the approval of a federal law will be necessary. To do this, the Ministry of the Environment must act on coordination with the Presidency of the Republic and the Legislative Branch. Other measures are simpler and may greatly expand effectiveness in the short term. For example, investing the fines from negotiated agreements in environmental funds will guarantee the link between the penalty and the environmental damage. Another example is the application of the 80/20 principle in Ibama actions, which indicates that sanctions would be more effective if collection were focused on the larger fines. Besides increasing the return on investment in collection, effective punishment of the major violators would expand the preventive effect of enforcement.

In fact, we suggest that Ibama prioritize the punishment of the major violators beginning in the monitoring operations; in other words, Ibama should concentrate on inspecting a few major cases (for example, 20% of the total number of current fines) and invest in more detailed investigations necessary for the successful conclusion. Making enforcement more effective would save resources that could be invested in other fundamental aspects of an efficient control system. One of them

would be to expand the fight against corruption inside and outside public agencies. The success of a program against corruption launched by Ibama, the Ministério Público and Federal Police in 2005 indicates the great potential of this type of measure.

The other fundamental aspect is to increase the transparency of information about environmental crimes. That would allow society and companies to help in punishing the violators with the application of alternative sanctions, including embargoes on consumption, credit restriction, and monitoring of compliance of negotiated terms with the Ministério Público and Courts. To this end, it will be necessary to accelerate implementation of measures that have already been approved, such as dissemination of the list of environmental violators, and the improvement and adaptation of the information systems at Ibama and the Federal Courts. Finally, such measures could lead to the exemplary punishment of the principal violators, and, thus, the application of the law would fulfill its major role: preventing future environmental crimes.