

Streamlining and Improving Enforcement of Forestry Law in the Peruvian Amazon

Introduction:

Enforcement of forestry law in the Peruvian Amazon requires a massive overhaul to increase effectiveness and force loggers to comply with forestry law. Currently, the combination of a weak, corrupt government with a lack of interest in implementing forestry law, the lack of an effective, on the ground organization for monitoring concessions and the timber industry, and a severe lack of funds lead to rampant illegal logging and disregard for the forestry law. A new policy that incorporates a powerful monitoring organization with the means and resources to train and implement a hands-on force for monitoring forests and a change in the financial system surrounding concessions and money given to enforcement must be implemented if this issue will make any progress. This is a long term issue and must be handled by taking small steps towards the big picture, it will not rapidly change; slow and steady enforcement of forest policy in Peru will eliminate the negative norms surrounding the pervasive nature of illegal logging.

Methods:

All the data was acquired via online research through databases and journals available through the University of Richmond research network. Based off these sources plus the publicly available laws themselves, my thesis was created and incorporates all of these sources to create my plan for implementing better enforcement of the Peruvian forestry law. My literature review is based on the cross-referencing of these sources to create a synthesis of the data already collected on Peruvian Forestry Law and forest management and enforcement across the globe. With the other members of our group, which is focused on governance for Peru in regards to forestry law, my research and analysis focuses on the enforcement aspect of forestry law that would be created by the Peruvian government and NGOs, those which another member of the group is focused on. Changes in law and policy mean nothing if they cannot be enforced and taken seriously, therefore my work is vital to achieve success in improving Peru's forestry law and preventing illegal logging.

Literature Review:

There is a large amount of data, studies, dissertations, and papers written on forest governance and this section of my paper is designed to analyze what is currently available, viable to my thesis, and what was utilized in the formation of this paper. These sources interweave and support each other on a variety of issues that will be addressed here.

One of the themes discussed in several of the sources is the aspect of current norms within the logging industry and the necessity to change these to accomplish true results in forestry enforcement reform. Smith et al. focuses primarily on this concept in “Why policy reforms fail to improve logging practices: The role of governance and norms in Peru.” They argue that it is not radical changes in law that will achieve results but instead changes in certain norms and codes of behavior amidst the loggers; that which are inconsistent and adverse to good forest management practices (Smith et al. 2006) In their study of the Ucayali and Loreto regions of Peru, they utilized questionnaires to concession holders, field evaluations of logging practices, and secondary data gathered from government agencies, NGOs, and forestry professionals. They framed their study in that of institutions having informal and formal rules, the norms and codes of behavior are informal and forestry laws are the formal rules. They propose the thesis that while logging laws and governance is perceived as inconsistent, the norms and behaviors will evolve to circumvent laws and regulations. Furthermore, a low quality of governance results in norms being established that freely oppose the government due to a lack of enforcement and consequences. (Smith et al. 2006) This ties directly into the concept of money and timber laundering. The money aspect is addressed in “Fighting forest crime and promoting prudent banking for sustainable forest management,” written by Setiono and Husein. They support the idea that money laundering in the logging industry evolved from the desire to skirt laws, propelled by the set of norms (corruption, poor governance, lack of punishment on offenders) that were apparent, in their case in Indonesia. Violation of laws becomes standard and acceptable when ineffective enforcement is apparent. This is also seen in Setiono and Husein's journal article on implementing financial monitoring and supervision to control for money laundering by illegal timber harvesters. (Setiono and Husein 2005) In Indonesia, where they studied this directive, illegal forestry acts and money laundering regularly happen without consequence. One of the largest norms that Irland (2008) tackles in his piece on state failure and corruption is that

of the conspiracy of silence. He shows that these societies and governments that are rampant with corruption and conspiracy are some of the biggest roadblocks to achieving effective forest reform. While he takes a broad stroke at painting the picture of the amount of corruption and state failures within developing countries, it provides a base framework upon which to develop methods of changing these problems.

The literature on forest enforcement often points to a lack of government interest or focus on forest management and enforcement which is perceived as a bias towards the timber industry. In Indonesia, Brazil, Peru, and Cameroon, all the governments only recently in the past 20 years have approached the topic of forest policy with any sort of true focus. (Setiono and Husein 2005; Macpherson et al. 2010; Smith et al. 2006; Mvondo 2009) Loggers have long felt that they have been ignored or pushed aside due to other industries like agriculture or mining. Governments have consistently made policy changes, especially in Peru and Brazil, which favor other industries with tax cuts and other benefits while increasing the financial burden on the timber industry. (Smith et al. 2006) It has been noted and studied that in Indonesia, another country suffering from a rampant illegal logging industry and weak enforcement methods, a renewed government involvement and dedication to this problem has revealed significant results, that which will be discussed below. (Setiono and Husein 2005) There must be an initiative of the government if there is any chance to eliminate or at least reduce the level of illegal logging occurring across the globe, particularly in developing countries. Less economically developed countries, logically and according to data on policy enforcement, are less likely to enforce written laws than developed countries. (McDermott et al. 2009) However, McDermott continues and says that a dedicated research effort is necessary to determine a direct link, the current results and theories are simply extrapolated from the given data. Beyond the perceived government attitudes toward the logging industry, it is the amount of resources and government involvement and, more importantly, attention to following through on their regulations that they have in place that determines whether a policy will be adhered to. It has been determined that there is an important relationship between the content of regulatory commitments and the level to which a policy is expected to be enforced. (McDermott et al. 2009) These state governments are therefore inclined to support a very intense and high standard forest policy in order to win support from environmentalists and stakeholders while they are under the impression that these policies will be only selectively followed or not all; the state then bears no economic or political costs of

enforcement. (McDermott et al. 2009) While selective enforcement occurs, it further increases the opportunity for corruption. While there is a good deal of literature marking the lack of government involvement or dedication to forestry law and enforcement, it is noted that there have been significant improvements made and efforts by the Peruvian government to make illegal logging a focus. (Smith et al. 2006) New laws are being created and implemented in an effort to control the growing illegal logging practices which shows that there is at least some sort of government action on the issue. However, while the motivation or effort to form these laws, one of the most important aspects is implementing the laws and in a timely manner. The 2000 Peruvian forestry law was approved in that year; however, it was not implemented until 2002, which in turn reinforced the seeming lack of interest from the government. (Smith et al. 2006)

Government corruption is another heavily discussed theme in forestry enforcement and policy literature. Corruption is a rampant occurrence within developing countries and it permeates the forestry sector especially. Corruption, coupled with state failure and warfare, is the very topic of Irland's journal article and how they relate to forestry enforcement. He claims that high levels of resource wealth invariably lead to high levels of corruption, the "Resource Curse." (Irland 2008) Peru has serious corruption issues; there is a large market for the "laundering" of illegal logs. It is necessary for illegal loggers to hide the source of illegal logging to prevent getting caught by authorities. This necessity in turn mandates corrupt officials willing to receive bribes and allow these practices to continue. Subsequently the rampant corruption amongst law enforcement allows illegal logging to both occur and go unpunished, even when timber poachers are discovered and taken down. This corruption also extends to supervision agencies overseeing concessions and bribes are used to speed the process of concessions along, so timber companies can avoid legal delays and administration. (Smith et al. 2006)

One of the struggles that much literature focuses on when it comes to managing forests and enforcing timber law is how to monitor and evaluate the vast amount of forest territory and the effectiveness of both the organizations monitoring and the on-the-ground presence of enforcement officials. GIS (geographic information systems) and remote sensing is one tool that authors have noted that could potentially be extremely effective. Remote sensing is a wide reaching term that encompasses a variety of sensing products and methods. These include aerial photography and satellite imagery, at a variety of resolutions, scales, and spectrums, i.e. infrared, heat sensing, etc. (Mayer and Lopez 2011) Currently, these technologies are used to map and

track a variety of environmental issues such as pollution, land cover, ozone depletion, human impact on land, and many, many more. Mayer and Lopez particularly speak about the Global Earth Observation System of Systems (GEOSS), a project that combines remote sensing with ground data to provide a singular meta-database that could be utilized to identify potential problems for a variety of factors and to aid in risk management; it may also be useful to evaluate timber policy effectiveness and success. (Mayer and Lopez 2011) While this paper focuses primarily on forest management and wetland conservation policies within the United States, it provides an excellent example of ways that remote sensing could be utilized for effective monitoring of forest policy and land use within Peru. One of the struggles with remote sensing that is identified in multiple sources is the inability to discern illegal logging and improper logging techniques using the current remote sensing capabilities. There are a variety of reasons that remote sensing may not work particularly well: lack of high resolution, forest cover prevents remote sensing to penetrate, and the money and time necessary for remote sensing to be accomplished. (Macpherson et al. 2010) The start-up and maintenance costs for these technologies are extremely high, costing thousands of dollars for a single license per year for GIS software. High resolution images, such as 1 meter resolution IKONOS images, can cost upwards of \$1,500; these high costs can potentially render the usefulness of the technology irrelevant. (Mayer and Lopez 2011) Hand-in-hand with the lack of funds, there is the concern with a lack of training for enforcement officials in the necessary tasks and operations management for remote sensing to be effective. (Mvondo 2009)

Money is an enormous issue for timber law enforcement, not only as a source of funding, but as some literature proposes, as a tool to prevent illegal logging and laundering. As cited above, forest monitoring has an extremely high cost; this includes all factors in the enforcement process: audits, remote sensing, paying officials, equipment, training, and much more. (Mayer and Lopez 2011) Rampant corruption adds to the fiscal concerns as a large amount of money is diverted or stolen, further raising the overall cost of effective forest enforcement. (Irland 2008) There are many conflicting views within the literature at the most effective method of levying fines, royalties, or performance bonds. Macpherson et al. (2010) believe that performance bonds are the most effective financial tool to enforce good forestry techniques and timber policy from their study in Brazil. By securing an upfront monetary amount, the pressure is on the loggers to correctly follow policy in order to reclaim their funds; the state retains any performance bonds as

capital if the loggers fail to do so. Contrary to this opinion, Robinson et al. (2010) believes that fines are the more effective tool for generating income and deterring logging practices. The financial sector can be utilized particularly effectively through bank involvement in monitoring and tracking funds that go in and out through their banks. In a case study within Indonesia banking and fighting forest crime, Setiono and Husein (2005) argue that by involving banks and having them closely monitor transactions and report any suspicious behavior in their accounts, law enforcement would be able to identify and take down any illegal loggers. While this is a very case-specific study performed in Indonesia, it provides an interesting and potentially useful method of enforcing forestry law through a perhaps unlikely process. (Setiono and Husein 2005)

One of the most important yet most ignored groups of people when it comes to the creation of forestry law, especially in Peru, is the local people and natives, and much of the literature makes it clear that local people need to be involved in the policy making process. Community based forest management legalizes and gives rights to rural people living on forest lands to collect resources from their area which both alleviates friction between locals and timber companies/government organizations and provides resources and empowerment of local people on their traditional lands. (Robinson et al. 2010) A similar idea is that of forest commons: forests that are used in common by many heterogeneous users. These forest commons are particularly effective not in just adhering to timber policy but in regeneration and general forest health; forests with involved local communities are much more likely to regenerate. (Chhatre and Agrawal 2008) Regardless of this fact, most of the literature points to the fact that in nearly all forest laws, local people living in these forest regions are generally excluded. (Mvondo 2009, Chhatre and Agrawal 2008, Robinson et al. 2010)

Analysis:

Identifying and Analyzing the Current Enforcement System

The Peruvian Amazon forest is currently maintained by the Peruvian government with the most current forest management law released in 2009/2010. This law proposed some serious changes in both forest policy and enforcing that policy, both on the ground and in agencies. The leading governmental organizations in charge of forestry law and policy are Sistema Nacional de Gestion Forestal y de Fauna Silvestre (SINAFOR) and Servicio Nacional Forestal y de Fauna Silvestre (SERFOR). These two agencies are branches of the Ministry of Agriculture (MINAG)

and they serve as the authorities for national forestry and wildlife. SERFOR is the governing body of SINAFOR. SERFOR is enacted on all scales: local, regional, and national. The Comision Nacional Forestal y de Fauna Silvestre (CONAFOR) is an additional governmental entity that serves as consultants for SERFOR; they are comprised of a series of experts from a wide range of fields pertaining to forestry and wildlife. Organismo de Supervision de los Recursos Forestales y de Fauna Silvestre (OSINFOR) is the primary enforcement agency of forest policy in Peru, it is charged with overseeing forest land use through concession and permission management and the regulation and conservation of forest resources. OSINFOR is the main focus in the scope of this paper as the other agencies deal more with policy than enforcement but these agencies combined with OSINFOR do play a role in the failures of the state to properly enforce the new forest policy. (Ley No. 29763)

Beyond the actors that are in the new Peruvian forestry law, it is important to analyze the large differences between this law and the last, released in 2001. That forestry law granted the National Institute of Natural Resources (INRENA) management responsibilities; however, it was a separate entity from the Ministry of Agriculture and regional governments. SINAFOR, which is a branch of the Ministry of Agriculture, therefore directly replaces INRENA. SERFOR too falls under the umbrella of the Ministry of Agriculture, eliminating the presence of an independent group managing and enforcing forest policy. CONAFOR retains its job as a series of high-level consultants but includes fauna into their range of responsibilities. OSINFOR works directly with SERFOR in the new law; SERFOR provides field information, local land conditions, and other data. Similar to INRENA, OSINFOR oversees and enforces the sustainable nature of timber concessions and other permits. INRENA was effectively eliminated in the new law, and was officially decommissioned in 2009, which causes problems that will be addressed below. (Ley Nos. 27308, 29763)

The newest forestry law in Peru changed the way concessions were given and revolutionized the entire industry. Concession durations were increased to 40 years and concessions were made transferable, meaning it could retain its territory and conditions but change owners freely, promoting long-term attention to these concessions rather than short term gains. Fees based on volumes of timber logged were replaced by taxes based on the area of a concession with a minimum bid designed to increase the value of production in an area and to prevent the creation of new logging areas. The actual logging is evaluated every 5 years; every

concession requires a Forest Management Plan (PGMF) and the individual harvest area requires an Annual Operation Plan (POA). All logging must be done in compliance with these plans. Regardless of the requirement for these plans, in the Pucallpa region, 11 months after the concessions were improved, no PGMFs were submitted, 30% of POAs were presented, and only 20% of those POAs were even approved. Furthermore, only 8% of timber fees had been paid by that same time. (Smith et al. 2006) The overall failures of concessionaires to complete their plans and pay their fees had two results: a reinforcement of the notion that the new law can be ignored and circumvented and a lack of funds for enforcement, enforcement is partly funded by those forestry fees. To entice loggers into sustainable and environmentally friendly logging practices, there is a discount given to concessionaires whose logging is certified by internationally credited agencies. OSINFOR is the primary agent in overseeing the concessions and these requirements. (Smith et al. 2006)

A striking consequence of the new law is the development of three types of loggers: those who successfully obtained a concession, those who purposely opted out of the new program, and those who were unable to obtain a concession. This new group of loggers opting out of the new system is a powerful group of timber companies who strongly oppose the new law and tighter restrictions; these companies are subsequently involved in illegal logging from all areas, concessions and unauthorized lands. The third group of non-concession holders creates the problem of them not being able to legally extract timber, in turn they choose to illegally log anyways. Due to this change, there is the unfortunate consequence of a significant increase in illegal logging despite the law's efforts to dissuade and prevent illegal logging. (Smith et al. 2006)

One of the major problems in the current enforcement system is the lack of an independent agency designed to enforce and monitor concessions. The merger of OSINFOR and INRENA has resulted in a gap in responsibilities and the inability to successfully monitor concessions and enforce the new timber law. INRENA's responsibilities have increased greatly to not just illegal logging but all natural resource management which has strung the agency thin in its resources and man power. Internal concerns combined with the external pressure from illegal loggers and timber companies opposed to the new law has effectively diminished INRENA's power and its ability to successfully manage Peru's forests. Perhaps the worst consequence is that INRENA has begun to give exceptions to the new law. The very existence of

any exceptions undermines the new law and reinforces the perceived notion that the government cannot enforce their new law. (Smith et al. 2006) These failures and weakening of the management and monitoring agencies marks the existence and continuance of norms that suggest both Peruvian governments' lack of interest in this issue and illegal logging to go unpunished.

Hand-in-hand with an increase in illegal logging, corruption has also increased in Peru. With more logs being laundered and illegally harvested, it becomes necessary for these loggers to pay off government officials, law enforcement, and the judiciary branch dealing with logging cases. (Smith et al. 2006) This too reinforces the established norms that illegal logging and bribery are accepted and cannot be stopped; no government motivation or assertions means no changes.

The decentralization of enforcement responsibilities and power has created a massive gap in successfully enforcing the new law. There is a serious disconnect between central and regional governments, about who is responsible for what, which is manifested in the law itself; the law is vague and unspecific concerning the divvying up of responsibilities. The ensuing power struggles between the governments have further weakened everyone's ability to effectively enforce the new law. The most pressing issues that causes the infighting is the authorization of concessions and where forestry fees and fines will go. These battles are intensified by the opposition timber producers and their powerful support of regional governments. (Smith et al. 2006) These companies back the regional governments in an effort to gain support and encourage the regional governments to oppose the new law and implement local policies that contradict the national law. Again, this failure to effectively delineate power and responsibilities shows the lack of interest in the timber law and issues from the Peruvian government.

Comparison to Other Countries and Their Forestry Enforcement Struggles

Brazil provides an excellent comparison to Peru and enforcing timber policy there due to Brazil's proximity to Peru and utilizing the same Amazon rainforest. The 2006 Public Forests Management Law (PFML) established a concession system similar to Peru and aims to expand public forests and increase and improve forest management. (Macpherson et al. 2010) Unfortunately, Brazil suffers from the same low level of institutional power as Peru. The complex nature of the law and its wide reaching goals bring into question whether Brazil will be able to effectively implement this new law. The law focuses on the implementation and

encouragement of Reduced Impact Logging (RIL) which is designed to limit environmental degradation by logging through practices such as preharvest planning and mapping, directional felling, planned roads and skid-trails, postharvest assessments, and similar practices. A striking concern concerning implementing RIL practices is the lack of training and resources dedicated to the effort; an issue seen in Peru as well. (Macpherson et al. 2010) Performance bonds, payments made as a deposit before logging occurs and refunded to loggers in proportion to their satisfaction of logging rules has been suggested in Brazil and studied. The results reveal that performance bonds are one of the most effective ways to implement RIL, greater than the effects of royalty implementation or a greater increase in audits. However, it is only at a critical bond level, in Brazil's case study \$250 per hectare, that illegal harvesting is severely reduced, see

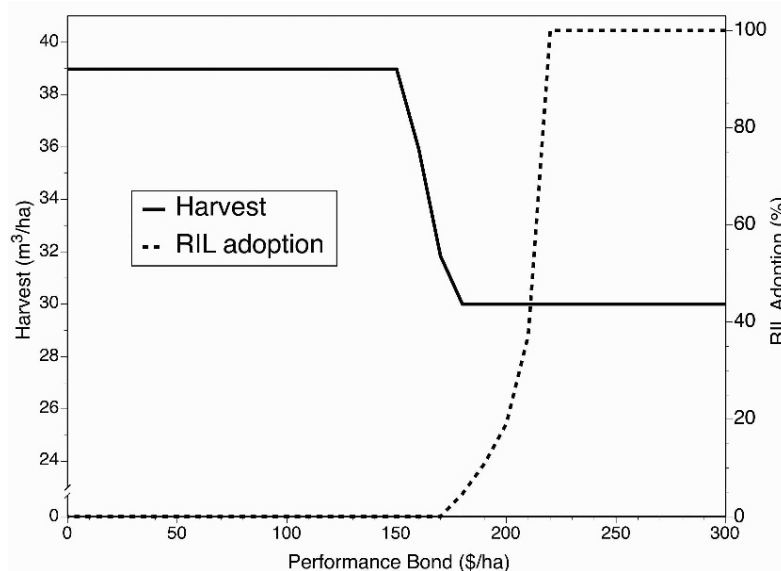


Figure 1. (Macpherson et al. 2010)

Figure 1 – Performance Bonds Critical Level in Brazil

Along with the success of performance bonds in implementing RIL practices, the study reveals that increasing audits has practically no effect on the level of RIL implementation and legal harvest levels. (Macpherson et al. 2010) These performance bonds could be a useful tool to utilize in Peru. Weak institutional power and the absence of fear for being punished makes auditing useless; in both Brazil and Peru, the weak enforcement institutions must first be improved before serious changes in policy enforcement is seen.

While located on the African continent, studies from Cameroon and its changes in forestry law are useful for Peru. Similar to Peru and Brazil, Cameroon has suffered from weak

institutions and the inability to effectively enforce their forest policy. In 1994, Cameroon's forest policy was reformed in an effort to firmly establish logging rules and practices and to effectively monitor and enforce these policies. The law suffers from the same vagueness and shortcomings of Peru's forestry law, resulting in power gaps and responsibility concerns. Furthermore, the law excluded local people within the forest zones, a similar concern seen in Peru's non-involvement of natives. There is an overall lack of resources and adequate training for timber enforcement officials, particularly when it comes to pay which results in increased corruption and taking of bribes by officials. In an effort to implement a watchdog organization, similar to OSINFOR in Peru, Global Witness was brought in to monitor enforcement but was mired by internal incidents and hindered the organization's ability to effectively observe. (Mvondo 2009) It is clearly necessary for both Peru and Cameroon to implement a strong organization that can handle enforcement and monitor concessions/community forests. When levying fines against timber companies, Cameroon suffered from a massive lack of payment, only 20% of fines issued in 2004 were paid, mirroring the Pucallpa region in Peru. (Mvondo 2009) Cameroon suffers from many of the same problems as Peru concerning forestry law and enforcement, this case study reveals the necessity for complete reform across multiple sectors, it is impossible to fix an entire system without rehabilitation of individual sectors.

Indonesia is useful for comparison to Peru because of its revolutionary method of utilizing banking to combat illegal logging. Local and international banks are heavily involved in financing the forest industry in Indonesia; therefore, they are primary facilitators for the use of forest resources. Realizing this, the Indonesian government passed a new law in 2003 that changed the categorization of forestry and environmental crimes as new predicate offenses (which can be prosecuted under the anti-money laundering law), forcing banks involved in financing forestry projects to monitor the actions of their customers as they could lose their business if illegal logging practices could be linked to a particular financier. By pressuring banks, they are inclined to monitor their customers and transactions for suspicious activity and reporting it immediately. Once identified, law enforcement can freeze accounts and shut down illegal loggers and their source of money. The most important aspect to note is that the individual bank will not be linked to the case or report; this way, banks will not lose business or their reputations. (Setiono and Husein 2005) While the specifics of this anti-money laundering and banking policy are too complex for the scope of this paper, as similar program could be utilized in Peru. Along

with this new effort, Indonesia provides a stellar example of government tackling illegal logging head on, making it the top priority in the Ministry of Forestry. Corruption is rampant in Indonesia as well with police being highly involved in illegal logging, insofar as to provide protection for the illegal timber trade. (Setiono and Husein 2005) This reveals the necessity for an independent agency to monitor enforcement officials and police linked to the timber industry to prevent corruption from spreading, an undertaking that is necessary in Peru as well.

Suggestions for Improving Peru's Enforcement of Forestry Law

Improving Peru's enforcement of forestry law is an extremely complex and complicated process, one that will require many things: a dedication for the government to combat illegal logging, an independent (free from the Ministry of Agriculture) agency designed to monitor and manage concessions, use of financial tactics to combat illegal logging and raise revenue, a coalition between government and non-government stakeholders, especially local people, to support the new policy, and, perhaps most important, time to allow these changes to take place and for norms to change.

A strong government pledge to fight illegal logging and enforce forest policy is absolutely necessary for any changes to occur. As identified above, there is a severe lack of government interest and focus on the illegal logging problem which results in poor enforcement and ineffective management, allowing corruption and illegal logging to continue. Corruption does not only cost money and time, it precludes the possibility of long term investment; a highly corrupt economy discourages any investment. (Irland 2008) It is essential to reduce corruption for any significant change to be made, a purging of corrupt government officials and law enforcement will be necessary. Beyond corruption, the Peruvian government and Ministry of Agriculture needs to place forestry enforcement and illegal logging at the top of their priorities. For too long, forestry enforcement has been ignored by the government and subsequently, corruption and rampant violations of forestry law permeate the forestry sector. One way to reveal dedication to this effort is timely implementation of policies and laws. The 2000 forestry law was not implemented until 2002 which reinforced the perceptions of government lacking commitment to the issue. (Smith et al. 2006) This effort must be a long-term investment by the Peruvian government, it must show a maintained, strong devotion to the cause to increase faith and eliminate previous stigmas and norms while the government must also focus on long-term

management rather than short-term gains from forest concessions. The commitment by the Peruvian government to combating illegal logging must also include dedicating more resources to its agencies which is discussed below. Beyond simply dedicating time and resources to enforcement, the government must simplify and streamline the dispersal of responsibilities for enforcement. The presence of power struggles between regional and central governments is unacceptable because it allows for timber companies to gain leverage and support in resisting the new policy. The government at all levels must work on the same page to effectively implement the law and enforce properly with no waste in resources. Perhaps the most effective way to accomplish this is through the creation of an independent agency that would settle these disputes.

One of the major failings of the newest Peruvian forest law is the lack of an independent agency to monitor and enforce concessions. The elimination of INRENA and adoption of OSINFOR into the Ministry of Agriculture limited the government's ability to effectively and independently oversee the forests. Due to increased bureaucracy and a skewed distribution of responsibilities, OSINFOR is unable to perform its job and enforce forest policy. Failures in Peru and other countries are tied back to a lack of resources and money. Only through the creation of a new, independent agency that has access to proper training and resources, will forestry enforcement be able to create a jumping off point for change. These resources and money will be obtained via an overhaul in the financial sector of the logging industry. This agency will need to utilize technologies such as remote sensing to effectively monitor the vast amount of territory within the Peruvian boundaries. These technologies are expensive and take time to train staff in their use but once implemented, they will provide invaluable support and data for the enforcement agencies, tracking timber removal, following roads and skid-trails, identifying illegal logging camps, and much more.

Peru must utilize the financial sector and change the system of fines and taxes on timber concessions for forestry law to be effective. Indonesia provides a unique and potentially very useful technique to use banks to combat illegal logging through the flow of money. Following Indonesia's example, Peru could convert forestry crimes to predicate offenses that fall under money-laundering law. By involving banks that finance logging companies, the Peruvian government can effectively monitor all transactions and identify suspicious activity. This method would provide two results, one, prudent banks that prevent money from illegal logging from going into the financial system, and two, sustainable forestry-based industry. Another financial

concern plaguing the current timber policy is the inability to collect fines and fees from concession holders and subsequently, lose a large portion of revenue that is dedicated to enforcement. Brazil provides an excellent example of the use of performance bonds in forestry policy and performance bonds should be implemented in Peru. (Macpherson et al. 2010) By requiring a bond upfront, before a concession can be harvested, the government has capital upon which to gauge the effectiveness and legality of the logging that occurs. If a concession holder fails to follow policy or illegally harvests, they lose their performance bond and that money can now be used for enforcement.

One of the most promising government initiatives and involvement with forestry was through the creation of a coalition of governmental and non-governmental stakeholders, created in 2002. It is absolutely necessary to recreate this coalition as it was dissolved in 2003. By having all the actors within the forestry system, accords can be met and issues resolved. Especially important is the involvement of local people within this coalition. The literature has proved that locals are some of the most effective enforcers of forestry policy and sustainable logging, being the most fit to handle their own territories. Through a combined effort of local and native people, timber companies, small-scale extractors, and government agencies, there can be a combined support for the new policy resulting in increased effectiveness of that policy. Furthermore, it displays the government's commitment to long-term management and effective enforcement.

Even with all these proposed changes, it is essential to realize the long-term nature of changing forestry policy and implementing increased enforcement. It is far easier to draw up radical change in policy than to implement it; it is far more important to make small changes over a long period of time. Similarly, making these changes is particularly hard in countries such as Peru that suffer from government failures and corruption. It is absolutely necessary for the government to have a strong base by reducing corruption and dedicating the necessary resources and efforts before any changes can be made. Until there is a reversal in the built up norms surrounding the forest industry and the lack of enforcement, will changes be able to permanently occur. Unfortunately, these norms take a very long time to change; it will take a powerful, long-term dedicated effort by the Peruvian government to streamline their enforcement methods.

Conclusion:

Peru suffers from many of the same problems seen throughout countries with large timber industries and in the literature on these cases. Based on the vast amount of material available on forestry enforcement and the most effective methods to implement forestry policy, I have produced a series of suggestions that Peru could implement in an effort to increase the effectiveness of their enforcement agencies and policies. Underlying all the current literature on the topic is the theme of long-term and dedicated change. Governments and societies do not experience rapid change. Perhaps the most important conclusion to draw from my research is that the entire industry must be revolutionized to achieve successful timber policies. However, this must be done slowly and individually. The attempt to change all facets of the timber industry sets itself up for failure. By tackling each of the issues I have outlined, government inattention and corruption, the lack of an effective monitoring agency, the lack of funds, and general governmental disorganization, I have provided potential solutions. It is essential to make these changes in such a way that will facilitate a slow yet steady reversal of the current norms within the Peruvian forestry industry. Complete involvement by all stakeholders is essential; the disregard of any group will result in failure. The biggest concern is whether Peru is ready and willing to take the steps necessary to make the necessary changes in their forest policy and enforcement, it is only their government and people that can make any serious advancement happen.

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