Can Legality Verification Combat Illegal Logging in Brazil? Strategic Insights for Policy Makers and Advocates

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Issue

Despite significant drops in the rate of deforestation in Brazil between 2006 and 2012[3], forest cover loss continues to be one of the greatest challenges for Brazilian law and policy, negatively impacting biodiversity and increasing greenhouse gas (GHG) emissions.

Problem Definition

The drivers of deforestation in Brazil include illegal timber harvesting, agriculture, urbanization, infrastructure, development, and mining operations. This paper will focus on illegal logging to examine whether, and if so how, current international efforts to curb deforestation through legality verification instruments may help reduce forest cover loss and promote good forest governance.

Legality verification is unique among international forest policy instruments because instead of seeking to bind states to international commitments, it reinforces sovereignty by encouraging compliance with domestic resource and environmental policies and laws.

The questions that inform this paper are twofold:

- How can transnational actors help reduce illegal logging in Brazil?
- How can these efforts create synergies with existing domestic policies?

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[3] According to Imazon, annual deforestation decreased from 14.3 million km^2 to 4.7 million km^2. (Instituto do Homem e Meio Ambiente da Amazônia (Imazon). 2012. O Estado da Amazonia. http://www.imazon.org.br /publicacoes/o-estado-da-amazonia/o-estado-da-amazonia-uso-da-terra, at 18.)

We are therefore interested in studying not only to what extent international institutions may influence Brazilian domestic policy, but also how they might reinforce current environmental law and policy. The latter question is important because international backing for existing domestic instruments is more likely to attract support from government officials in Brazil relative to international initiatives that may be seen as an infringement on the country's sovereignty. Legality verification is also important to help foster and address the underlying conditions of good forest governance. These conditions can be subdivided into capacity, efficiency, enforcement, and durable support.[4]

Background

Illegal logging is one of the major drivers of deforestation in the Amazon forest and is responsible for major forest cover and biodiversity loss. The boom of the timber industry started in the 1970s, with the exhaustion of timber supplies in the southern states, coupled with the construction of the BR 010 and BR 230 highways (which allowed for greater access to remote areas with high-value timber) and the lack of effective environmental restrictions for timber extraction.[5]

While the 1965 Forest Code prescribed stringent regulations for the extraction, exploitation, and use of natural resources, enforcement was negligible until the advent of satellite monitoring and the creation of a full-fledged environmental institutional apparatus, including the Ministry of the Environment, the Federal Environment Agency (IBAMA), and the Ministério Público (MP). After the enactment of the 1988 constitution (the so-called "democratic constitution"), which served as a basis for a number of environmental regulations, and the 1992 United Nations Conference on Environment and Development (Rio Summit), civil society had both the political momentum and legal reasoning to bring to the world's attention the destruction of the Amazon forest usually coupled with social issues, in particular indigenous communities' rights.

Since then, the Brazilian government has been relatively sensitive to external pressure related to its environmental policies. While since 1992 Brazil has been adamantly against any international regulation that would restrict exploration of the Amazon forest, the country has been dedicated in the last few years to furthering the REDD+ (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries) mechanism, both domestically and internationally. This might be explained by the fact that pledges for financial assistance for forest conservation policies and future economic benefits were largely absent during the Rio Earth Summit in 1992, which, largely due to Brazilian opposition,

[4] Cashore, Benjamin, and Stone, Michael. 2013. Can legality verification promote good forest governance? Lessons from Indonesia, Malaysia, and Brazil. Paper prepared for presentation to UNFF side event, 10th session of the United Nations Forum on Forests in Istanbul, Turkey, at 8. See also Cashore, Benjamin. 2009. Key components of good forest governance in ASEAN part 1: Overarching principles and criteria. Edited by Exlibris: ASEAN. German ReFOP project. http://www.aseanforest-chm.org.

[5] Serviço Florestal Brasileiro (SFB) e Instituto do Homem e Meio Ambiente da Amazônia (Imazon). 2010. A atividade madeireira na Amazônia brasileira: produção, receita e mercados, at 5.

failed to reach a legally-binding global forest convention. This shift, from a defensive to a collaborative position in some instances[6], can be seen as a positive step towards future partnerships between Brazil and international organizations and entities (such as the European Union) to address environmental challenges.

Economic globalization is an added incentive for collaboration between Brazil and developed countries to tackle resource depletion issues, such as illegal logging. Although most timber extraction in the Amazon is for domestic markets, Brazil is a major exporter of forest products and, according to the FAO, was responsible for 17 percent of global exports of pulp for paper in 2011.[7] According to Imazon, the top four Brazilian exporter states of timber between 2009 and 2012 were the southern states Paraná and Santa Catarina followed by Pará and Mato Grosso, located in the Amazon region.[8] In 2012, the top importing countries of forest products from the Amazon were the United States (31 percent), France (13 percent), and the Netherlands (7 percent).[9] The gross revenue of the logging industry in the Amazon in 2009 was R$4.94 billion (approximately U.S. $2.47 billion).

As Sam Lawson and Larry MacFaul explain, although illegal logging is not considered a major issue in Brazil's southern region (because most timber harvest comes from plantations), this activity is worrisome in the Amazon.[10] The extent of illegal logging is uncertain, with estimates ranging from 34 percent to 72 percent of total production.[11] In addition to contributing to biodiversity loss and GHG emissions, illegal logging in the Amazon is one of the main causes of another driver of deforestation — the construction of roads for transportation of illegally harvested wood. These roads, in turn, facilitated the emergence of human settlement and forest clearance for agriculture in previously inaccessible areas.

The problem definition of Illegal logging has not only arisen within domestic circles, but also involves a range of international actors. For example, in additional to EU and U.S. efforts drawing on international trade policy discussed below, Interpol has addressed the criminal aspects of illegal logging.[12]

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[6] Arguably, Brazil's collaborative position emerged from, and is dependent upon, investments and financial assistance from other countries and multilateral institutions. Whether this represents a stark change in stance towards international forestry regulation is still up for debate. (We would like to thank David Humphreys for raising this point.)
[7] Available at http://www.fao.org/forestry/statistics/80938@180724/en/.
[8] Imazon, supra note 3, at 48.
[9] Ibid., at 50.
[10] Lawson, Sam, and Larry MacFaul. 2010. Illegal logging and related trade. Chatham House. http://www.chathamhouse.org/sites/default/files/public/Research/Energy,%20Environment%20and%20Development/0710pr_illegallogging.pdf, at 90.
[11] Chatham House. Illegal logging indicators country report card. http://www.chathamhouse.org/publications/papers/view/109398.
[12] http://www.guardian.co.uk/environment/2013/feb/21/interpol-arrest-seize-illegal-logging-raid.

Brazilian legislators have defined illegal logging to occur when: (1) the wood was harvested without/in violation of state and federal environmental permits (or with falsified licenses); (2) timber extraction in protected areas (such as conservation units) and indigenous lands; (3) overharvesting; or (4) extraction of protected/endangered species. However, there is no agreed definition of illegal harvesting on the international level yet. As Dieter explains, "The common denominator is harvesting without permission (licence), and harvesting exceeding permission with regard to volume, region, or tree species. Logging rights obtained, for example, through corruption, are regarded as illegal by most parties concerned as well."[13]

In order to curb illegal logging, the Brazilian government has taken a number of measures, ranging from command-and-control instruments to enforcement mechanisms to ensure compliance, such as the Document of Forest Origin (Documento de Origem Florestal, or DOF), a timber-tracking system created in 2006. The DOF is a federal, mandatory permit that controls the transport and storage of forest products of native origin that follows the product from origin to destination and contains information about the product's source.[14] Although some states have devised their own tracking systems, they will eventually be linked to the federal DOF system. One of the benefits of this instrument is that environmental agencies will be able to concentrate enforcement efforts on states and cities where timber trade is highest. According to an assessment by Lawson and MacFaul, "Volumes at origin and destination must match; and volumes processed at mills must not exceed volumes authorized in sustainable forest management plans. Likewise, information at state and federal level (IBAMA's National Registry) must match. Tamper-resistant documentation is also used, although, owing to the newness of the system, some improvements are still in the process of being implemented."[15] Some security issues have also been discovered since its implementation.[16]

Despite significant progress in deforestation reduction and environmental policy, new challenges for good forest governance have emerged in the past couple of years. A 2011 federal law[17] gave to states a number of enforcement powers in environmental matters, thus expanding decentralization efforts in Brazil that were already present in the 1988 constitution. Some states, however, do not have the necessary manpower and institutional capacity to fight deforestation and curb illegal logging, thus lacking the required conditions of good forest governance. Corruption in some states may further erode good governance and further hinder efforts to address illegal logging. Additionally, the Brazilian

[13] Dieter, Matthias. 2009. Analysis of trade in illegally harvested timber: Accounting for trade via third party countries. *Forest Policy and Economics* 11:601.
[14] Ibama, Instrução Normativa No. 112. August 21, 2006. http://servicos.ibama.gov.br/ctf/manual/html/IN%20112-21-8-2006-DOF.pdf.
[15] Supra note 10, at 22.
[16] "In 2008, for instance, it was discovered that logging companies had hacked into the database and adjusted data, allowing 1.7 million cubic metres of illegal logs from the state of Pará to be laundered." Supra note 10, at 22.
[17] Brasil, Lei Complementar No. 140. December 8, 2011. http://www.planalto.gov.br/ccivil_03/leis/lcp/Lcp140.htm.

congress approved a new forest code in 2012, which weakened a number of provisions regarding protected areas (such as permanent preservation areas and legal reserve) and suspended criminal and administrative sanctions for illegal extraction of vegetation in protected and restricted use areas carried out before July 22, 2008. These changes directly affect accountability and equity norms, especially for those who disregarded environmental laws before that date and who had been subject to administrative and criminal proceedings.

The purpose of this brief overview of the illegal logging scenario in Brazil is to provide a glimpse on the impacts of illegal logging, particularly in the Amazon region, as well as the possible legal and political challenges for good forest governance. In the next section, we will examine how and to what extent transnational actors and institutions might influence Brazilian domestic policy to address this issue, giving special attention to legality verification efforts that have gained significant traction within the United States, the EU, and other OECD countries.

Discussion

1. Analytical Framework

Illegal logging has both localized and global impacts, ranging from forest cover and biodiversity loss to GHG emissions that contribute to planetary climate change. Additionally, economic globalization has facilitated transboundary socio-economic processes that have catalyzed environmental degradation, including deforestation. The international regulation of forests has emerged in a piecemeal and incremental fashion, with a complex set of rules, norms, and institutions developing that deal, directly and indirectly, with forest protection. The challenge for the global governance of forests, thus, is to send a coherent set of signals (through norms, rules and discourses, for example) to the state and non-state actors involved that influences their behavior in a way that effectively addresses the problem at hand.

In order to address the two questions outlined at the start of the paper, we will use the analytical framework developed by Bernstein and Cashore about the "four pathways of influence."[18] According to the authors, transnational actors may explore four pathways that can influence domestic policy-making, namely: international rules, international norms and discourses, creation of or interventions in markets, and direct access to domestic policy processes. In the case of forest governance, each pathway is exemplified below:

a. International Rules

Given the failure of international negotiations to create a convention on forests, no binding forest-focused agreement exists thus far. Instead, the international rules path depends on a number of multilateral environmental agreements (MEAs) that partially touch on forest issues, such as the

[18] Bernstein, Steven, and Benjamin Cashore. 2012. Complex global governance and domestic policies: Four pathways of influence. *International Affairs* 88(3):604.

Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) as well as trade rules under the World Trade Organization.[19] Moreover, initiatives such as the Forest Law Enforcement and Governance and Trade (FLEGT) that include voluntary partnership agreements (VPAs)[20] and REDD+ are giving rise to binding agreements that can strengthen forest protection in developing countries.

b. International Norms and Discourses

In the past few decades, the concept of good forest governance has been widely developed and advocated, in particular, broad principles of inclusiveness, transparency, and accountability.[21] The norm of Sustainable Forest Management (SFM) is also extensively used by both developing and developed countries.

c. Markets

This pathway includes the boycotting of targeted companies that are believed to undertake unsustainable forest practices[22]; non-state market driven systems (NSMDs) of eco-labeling, such as the Forest Stewardship Council (FSC); future REDD+ credits that can be traded in carbon markets; and legality verification. Similar to forest certification, legality verification depends on third-party auditing to confirm that the timber was legally harvested but reinforces domestic legislation instead of imposing outside standards.

d. Direct Access to Domestic Policy Processes

The access is possible through capacity building, technology transfer, and the provision of financial resources by international bodies such as the World Bank. These tools can generate multistakeholder dialogue that has the ability of empowering domestic actors and organizations to push for good forest governance.[23]

With this wide array of options and mechanisms in mind, the question is how actions through these pathways can address illegal logging in Brazil. In particular, we will focus on the last two pathways in order to assess whether and to what extent legality verification can provide a viable mechanism to solve this issue. Although secondary for this analysis, the international rules and norms and discourses pathways are important, considering that the most important international hard law and soft law

[19] Ibid., at 595.
[20] A VPA, once ratified, is a legally binding contract between two states. (We thank Ragna John for raising this point.)
[21] Cashore, supra note 4, at 3-6.
[22] For more on boycotting strategies, see Issues and Options paper by Dieterich and Auld titled "Moving Beyond Commitments: Creating Durable Change Through the Implementation of APP's Forest Conservation Policy."
[23] It should be noted that this pathway includes both multilateral and bilateral cooperation. Dependence in a dyad of states, such as trade-based dependency, also facilitates direct access to domestic policy processes. (We thank Ragna John for raising this point.)

provisions have already been incorporated in to the Brazilian legal system.[24] Moreover, the problem of illegal logging in Brazil is not so much the lack of environmental protection instruments as the failure of their implementation and enforcement.

2. Legality Verification

Legality verification, according to Cashore and Stone,[25] "represents a hybrid of global certification and FLEG efforts: similar to FLEG efforts legality verification recognizes and promotes national sovereignty, however like certification it relies on third-party certification." Moreover, legality verification is not dependent on consumer support, as is the case with NSMD systems.[26]

The two major examples of legality verification efforts are the Lacey Act in the United States and the European Union Timber Regulation and VPA agreements. The Lacey Act seeks to prohibit import of illegally harvested timber by requiring "due care" from timber producers and sellers. In the EU, early efforts to combat illegal logging were promoted through the FLEGT initiative, which limited timber imports to the community only from those countries that signed a VPA agreement, with a clear legality standard and a verification system.[27] Additionally, the EU also passed Regulation No. 995/2010, which "1. Prohibits the placing on the EU market for the first time of illegally harvested timber and products derived from such timber; 2. Requires EU traders who place timber products on the EU market for the first time to exercise 'due diligence.'"[28]

Cashore and Stone have found that support for legality verification has been possible in at least two cases: First, when the forest sector depends on a foreign market, where legality verification mechanisms are already in place; and second, when the actors involved (i.e., forest industry and government officials) perceive legality verification as a means to buttress their own interests.[29] In other words, the norms of legality should mirror those already in place in the exporting country, thus "borrowing" normative authority from its own legal system.

Combating Illegal Logging in Brazil

Considering that Brazil's timber industry serves both domestic and foreign markets, the implementation of legality verification efforts is more likely to succeed in the latter because verification norms are required by consumer states, such as the United States and the EU. This does not, however, prevent

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[24] For instance, the Convention on Biological Diversity and CITES have been formally incorporated into the Brazilian legal system and have provided a basis for domestic legislation. More recently, Brazil has ratified the International Tropical Timber Agreement (ITTA).
[25] Cashore, Benjamin, and Michael Stone. 2012. Can legality verification rescue global forest governance? Analyzing the potential of public and private policy intersection to ameliorate forest challenges in Southeast Asia. *Forest Policy and Economics* 18:15.
[26] Cashore and Stone, supra note 4, at 14.
[27] Ibid., at 15.
[28] European Union, Timber Regulation. http://ec.europa.eu/environment/forests/timber_regulation.htm.
[29] Cashore and Stone, supra note 4, at 22-24.

transnational actors from seeking other strategies from the pathways described above to tackle illegal logging serving domestic markets. In this section, we will discuss to what extent legality verification could address illegal logging in Brazil and the challenges for domestic-market efforts.

As explained above, legality verification is more likely to advance in countries where the forest sector depends on foreign markets, given that this instrument is nothing more than an incentive for compliance from external actors. This being the case, legality verification efforts would probably succeed in the Amazon states of Pará and Mato Grosso because they serve both American and European markets with tropical forest products. The environmental benefits would also be welcomed, considering that the two states have the highest deforestation levels in the country (albeit not primarily due to illegal logging). Strategies of how legality verification could be nurtured in this case will be discussed in the next section.

The challenge of curbing illegal logging in the Brazilian Amazon remains, however, for timber intended for the domestic market. In this case, Cashore and Stone have raised for consideration two strategies. First, "for legality verification to have influence, it may be that strategists must place greater effort in encouraging purchasers of products within Brazil to demand legality verification." However, they also posit that "it is not so much the percentage of domestic versus international consumption of wood produced in Brazil" but rather whether "Brazilian producers view the external market as important for their ongoing economic success." In such cases, "the EU and the U.S. may have more influence 'tipping the scales' in Brazil than strategists may think."[30] Regarding the first point, one possible limitation to encouraging buyers within Brazil to demand legality verification is creating dependence on consumer preferences in the same way as in certification systems. Another approach would be to encourage the Brazilian government itself to demand legality verification as a matter of national policy, incorporating third-party auditing, which could help lessen the burden of compliance verification on understaffed state and environmental agencies. As we explain below, there is already a precedent in the Brazilian legislation requiring third-party auditing at the expense of the grantee of forest concessions.

While markets are the primary pathway travelled by transnational actors to promote legality verification worldwide, the implementation of legality verification domestically will require greater emphasis on direct access to domestic policy making. In the Chatham House illegal logging indicators country report card for Brazil, it was suggested that "[i]ncreased international engagement may help spur the growth of certification and verification."[31] This engagement, as will be proposed below, could entail working through the direct access to domestic policy processes pathway through technology transfer, financing and capacity building for third-party auditors and environmental agencies.

[30] Cashore and Stone, supra note 4, at 22.
[31] Chatham House, supra note 10.

In short, reducing illegal logging requires developing simultaneous and complementary strategies that aim at domestic and external timber markets. This requires being aware of the pathways being traveled (especially distinguishing the markets and direct access pathways) and the mechanisms at play, such as technology transfer, financing, capacity building, and/or labeling or tracking challenges.

To be sure, these pathways are not necessarily independent from one another. One of the main concerns in devising such strategies, therefore, is to nurture positive interactive effects between two or more pathways.

Way Forward

For analytical purposes, we present a few possible strategies dividing (or "in line with") foreign markets and domestic markets:

Option 1 (Illegal Logging and Foreign Markets): Maintain Strategic Support Domestically and Internationally

Previous studies by Cashore and Stone[32] on Indonesia, Malaysia, and China have shown that the shift from opposition to support for legality verification only occurred after strategic self-interests of different groups were tended to, giving rise to "bootleggers and Baptists" coalitions.[33] Moreover, focus on mechanisms that reinforce, rather than challenge, sovereignty of domestic governments over policy-making was key to attract support from producing countries. Focusing on building supply-chain tracking, instead of rising forest management standards, seemed to contribute to this shift. These questions are essential to help understand the first question we posed in the beginning of this paper: that is, how transnational actors can help reduce illegal logging in Brazil. In other words, the pathways we described above and the coalitions necessary to support legality verification efforts should be considered by transnational actors when pushing for better regulation and/or tracking systems in Brazil.

Cashore and Stone also found that economic interdependence is a prerequisite to create opportunities for leverage.[34] Given that the United States and the European Union already have legality verification legislation in place and that they are two of the top importers of tropical wood from Brazil, legality verification is an attractive option for environmental groups and the government (who have a vested interest in the reduction of deforestation and GHG emissions), purchasers in the U.S. and the EU (who can be held accountable for importing illegal forest products), and legally harvesting firms (who have "an economic self-interest in weeding out of global supply chains illegally harvested fibre as, all else

[32] See Cashore, Benjamin, and Michael Stone. 2013, forthcoming. When and why do states support transnational business governance? Explaining domestic sources of support for legality verification across global forest sector supply chains. *Regulation and Governance.*
[33] Ibid.
[34] Ibid.

being equal, prices will go up"[35]). The logic here is that improved weeding-out of illegal timber from the market can be expected to increase the demand for, and thus the value of, timber from legal forests, making them more competitive with other land uses.[36]

Option 2 (Illegal Logging and Domestic Markets): Encourage Brazil's Tracking System Through Third-Party Auditing

Transnational actors could provide the necessary incentives (financing, technology transfer) to encourage the Brazilian government to create legality verification-like systems within the country. The DOF system could be improved by allowing third-party auditing, similar to existing legality verification systems. This could lessen the burden on governmental enforcement officials and would also be advantageous from an economic standpoint, assuming the current overly bureaucratic requirements were to be replaced by a straightforward auditing process. The implementation of this option could require legislative action promoting third-party auditing and requiring the wood industry to seek their services. Such requirement is not alien to Brazilian law: The Public Forest Law, for example, already requires independent auditing of forest concessions at the expense of the grantee.[37] This point is important to consider the second question we raised at the outset regarding nurturing synergy between legality verification efforts and existing domestic policy. Again, the sovereignty issue is relevant because these efforts are likely to be more successful if they are perceived as reinforcing the Brazilian government's authority over rule-making.

Option 3: Amelioration of Brazil's Tracking System Through Technology Transfer, Financial Resources, and Capacity Building

In addition, or as an alternative, to the employment of third-party auditing, transnational actors could help reduce illegal logging by providing subsidies to implement tracking of forest products in Brazil through pathway four described above. Developed countries and financial institutions could provide the means for the federal or state governments to make use of DNA technology, for example.

The DOF system is used as a starting point in strategies 2 and 3 because they are more likely to succeed if they create synergies with the existing normative and institutional framework already in place. Furthermore, the three strategies are not mutually exclusive; they all have the ability to improve good

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[35] Cashore, supra note 4, at 25.

[36] We would like to thank Kathleen McGinley for raising this point. However, there could also be negative feedback loops as prices of wood products would rise, potentially causing substitution to occur to cheaper materials produced from non-wood sources.

[37] Brasil, Lei No. 11.284, art. 42. March 2, 2006. http://www.planalto.gov.br/ccivil_03/_ato2004-2006/2006/lei/l11284.htm. We would also add the role of policies to raise demand for legally harvested timber within Brazil through, for instance, public procurement policies that are already being implemented in the country (i.e., Instrução Normativa No. 1, January 19, 2010, of the Ministry of Planning, Budget, and Management, http://cpsustentaveis.planejamento.gov.br/wp-content/uploads/2010/03/Instru%C3%A7%C3%A3o-Normativa-01-10.pdf), which requires the proof of legal origin of timber used in public services and constructions.

forest governance in Brazil by directly fostering its four underlying conditions: capacity, efficiency, enforcement, and durable support. The options also seek to follow what Cashore found to be the two ways to assess good governance interventions: "the extent to which an intervention is, or might come to be seen, as appropriate; and the extent to which an intervention is viewed for its consequences in ameliorating a particular problem or set of problems."[38] Although the extent to which illegal logging (and, consequently, deforestation and forest degradation) can be reduced through legality verification is still unknown (given the relatively recent efforts from demand-side countries), the push for compliance of environmental laws is thought to be one of the responsible factors for the drop in deforestation levels in Brazil from 2006 onwards.[39] Thus, one could argue that legality verification has, at the very least, the ability to aid and build on domestic efforts to reduce forest cover loss and expand this trend even further. This improvement could also have possible beneficial implications for other drivers of deforestation as well. The tracking system, as envisioned above, can serve as a model for the agriculture sector, once the know-how and institutional capacity are established, in order to ensure environmental compliance of soy products, for example.[40]

Way Forward

The above review has focused on analyzing and understanding the causal pathways that strategists and government officials might follow in nurturing legality verification toward effective "on-the-ground" solutions. If we stand back even further, we can identify key challenges and obstacles of which strategists must be aware. First, in comparison to wide ranging "top-down" global approaches, such as the failed efforts to achieve a binding global forest convention or Forest Stewardship Council certification standards, legality verification represents a more modest approach[41] that reinforces, rather than challenges, national sovereignty. For these reasons, some scholars assert that a focus on legality verification may lead to a "race to the bottom."[42] Others assert that once supply-chain tracking is entrenched, standards can increase in ways that reward, rather than punish, participating firms, managers, and countries.[43]

We have provided some advice above relevant for nurturing what appears to be a potentially evolving, sequential process towards increased participation/support and beneficial impacts "on the ground." At

[38] Cashore, supra note 4 (b), at 1.
[39] As reported in *The Guardian*, "George Pinto, a director of Ibama, Brazil's environmental protection agency, told reporters that better enforcement of environmental laws and improved surveillance technology are behind the drop in deforestation levels." (http://www.theguardian.com/environment/2012/nov/28/amazon-deforestation-record-low and http://www.guardian.co.uk/environment/2012/nov/14/brazil-amazon-rangers-farmers-burning.)
[40] Future research is also needed on possible implications for other drivers, such as land conversion for agriculture, as well as possible interlinkages with other instruments, such as FLEGT. (We thank Ragna John for raising these questions.)
[41] Cashore and Stone 2011.
[42] Cashore and Stone, supra note 25.
[43] Cashore and Stone, supra note 4.

the same time, scholars and practitioners must also reflect on two possible interacting effects of legality verification as it continues to unfold. First, legality verification might ultimately help empower global forest certification systems by building better tracking mechanisms — the fragmentation of which has hampered linking supply of certified products to demand. Second, it may very well be that legality verification might help "tip the scales" in favor of broader "good forest governance" initiatives already taking place within tropical countries.

What is clear is that strategists must be careful to undertake decisions consistent with these evolutionary and interacting potential. Policy makers and scholars should consider synergies and complementarities between the four different pathways described above and consider how action through one pathway can be enhanced by simultaneous action in one or more of the other three.[44] For instance, scholars are theorizing that using legality verification as a proxy for certification may backfire because standards that are too high and that challenge sovereignty may reduce incentives for forest companies to participate in efforts to build better supply-chain tracking. For these reasons, policy makers and practitioners must expand beyond deliberating on what they want to achieve to focusing on the "logics" of the mechanisms and pathways for achieving them.

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[44] We would like to thank David Humphreys for raising this point.

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