



## 2. Institutions

Framework environmental laws exist in over 180 countries and are being implemented by hundreds of agencies and ministries worldwide.<sup>1</sup> Institutions translate these laws, directives, and decisions from the legislature, executive branch, and judiciary into action in many ways, such as permits, enforcement, and compliance assistance. Together, laws and institutions are the heart of environmental rule of law.

Ministries and agencies in many countries now have decades of experience with the challenges and opportunities in implementing environmental law. However, while environmental legislation has proliferated at the national level, institutions in many instances are still struggling to implement environmental law effectively, efficiently, and uniformly. These institutions are finding an implementation gap between the laws' goals and actual environmental outcomes.

### 2.1 Introduction

This chapter reviews the critical role that institutions play in environmental rule of law and the key opportunities for building more effective environmental institutions. In particular, the chapter highlights the need for clear and appropriate mandates; coordinating across sectors and levels of government; developing the capacity of institutions and personnel; collecting, using, and disseminating reliable data; employing independent audit and review mechanisms; ensuring the fair and consistent enforcement of law; and deploying leadership and management skills to empower staff and model behavior. This chapter concludes that ***with the proper mix of capacity, accountability, resources, integrity, and leadership, environmental institutions are poised to greatly narrow the implementation gap in the environmental rule of law.***

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<sup>1</sup> For more details on framework environmental laws, see discussion in Chapter 1.

### 2.1.1 Identifying Institutions Involved in Environmental Rule of Law

The overwhelming majority of countries in the world have laws that direct the national environment ministry, agency, or both to implement the core environmental laws. Many other institutions—including multilateral, regional, and national organizations, as well as traditional, indigenous, and local organizations—typically also have jurisdiction over environmental laws or specific natural resource sectors. **Many organizations have considerable influence on the implementation of environmental law.** For example, a robust response to illegal wildlife trafficking may depend not only on a strong national conservation ministry, but also on strong customs agencies, prosecutors, domestic law enforcement, and courts, supplemented by the cooperation of foreign, regional, and international law enforcement organizations. Provinces and states are often integral partners in enforcing

national environmental laws as well as their own environmental laws. In some cases, active involvement of regional bodies (such as river and lake basin organizations) and local institutions (such as village councils) are also key features of environmental law implementation and enforcement.<sup>2</sup>

Even institutions not explicitly associated with environmental rule of law—such as finance<sup>3</sup> and education ministries—can be crucial to effective environmental rule of law. For example, Samoa’s 2016 Strategy for Development from the Ministry of Finance includes environment as one of four priority areas for development,<sup>4</sup> and New Zealand’s Ministry of Education includes “ecological sustainability” as a curricular goal.<sup>5</sup> Ministries overseeing natural resources, such as fisheries and agriculture, are also critical in implementing environmental rule of law because the activities they oversee implicate many environmental issues, such as water pollution, resource extraction, and land use.

While this chapter’s focus is on the national institutions directly responsible for implementing and enforcing environmental laws and policies, multilateral institutions, such as development banks and intergovernmental organizations, also have an important role in supporting and linking national efforts. Many international treaties and regional agreements also contribute to national efforts, and they are discussed in Annex II.



- 2 Singh 2017.
- 3 See UNEP 2015.
- 4 Independent State of Samoa 2016.
- 5 New Zealand Ministry of Education 2007.



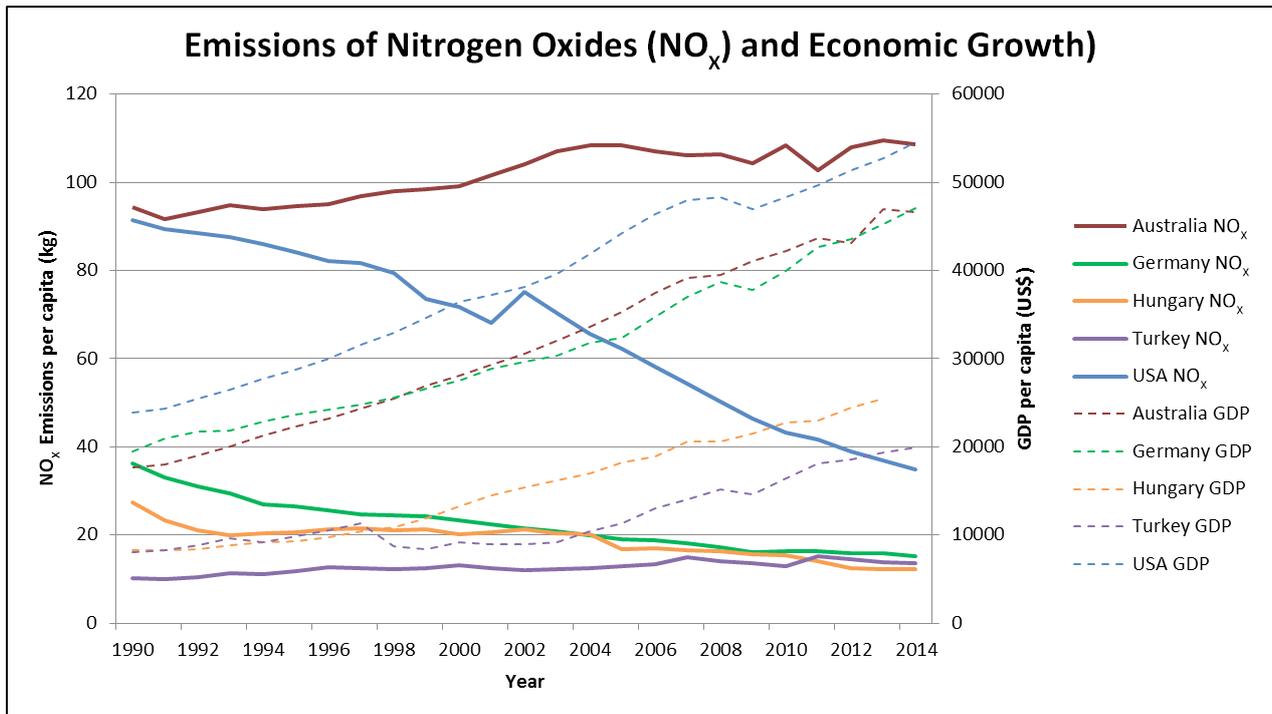
### 2.1.2 Benefits of Environmental Institutions

Environmental institutions promote environmental progress, sound governance, and social inclusion. Strong and effective institutions are especially important because ***the benefits of environmental rule of law are diffuse across society, while the costs of weak or ineffective environmental rule of law are often concentrated on vulnerable populations.*** Environmental rule of law provides benefits such as cleaner air and more sustainable use of natural resources that accrue to all citizens, but that may not be widely recognized or appreciated. Citizens tend to notice environmental problems, such as contaminated water, far more frequently than they notice improvements in environmental conditions, such as fewer days of air pollution. Strong institutions can quantify and communicate these gains by issuing periodic reports on environmental quality and publicizing improvements in environmental metrics, such as the number of days that air meets health standards, to

identify areas that may warrant further action and ensure citizens appreciate the changes delivered by environmental rule of law. It also improves accountability. In contrast, when environmental rule of law is weak and pollution and unsustainable resource use go unchecked, vulnerable populations tend to bear more of the burden. As discussed in the Justice and Human Rights chapters, disadvantaged populations often live with higher levels of pollution and are more frequently displaced by natural resource extraction. Environmental rule of law gives these populations mechanisms by which they can be heard and protect their health, communities, and rights.

As discussed below, effective environmental institutions have three core benefits for the environmental rule of law, which are mutually supporting: they (1) drive sustainable development; (2) provide order and predictability in government decision making; and (3) promote inclusivity and social cohesion.

**Figure 2.1: Simultaneous Improvement of Environmental Conditions and Economic Growth**



Source: OECD (2014 and 2017).

### 2.1.2.1 Advancing Sustainable Development

Institutions are key drivers of sustainable development. An extensive body of empirical studies and literature documents the critical importance of strong institutions to growth; in fact, ***institutions are the key determinant of economic growth***, more important than trade integration or geographical variables.<sup>6</sup> Studies estimate that a one-standard-deviation jump in the quality of institutions in a country results in a four- to six-fold increase in per-capita income.<sup>7</sup> Other research similarly links strong institutions to better

development outcomes, including higher per capita incomes (see Figure 2.2).<sup>8</sup>

One indicator of the strong ties among environmental rule of law, the strength of institutions, and economic growth is the repeated finding that as economies develop and rule of law strengthens, pollution often decreases. This is counterintuitive because increased economic output would normally be thought to result in increased pollution. Figure 2.1 demonstrates the simultaneous reduction in nitrogen oxide pollution and increase in per capita gross domestic product in several developed economies.

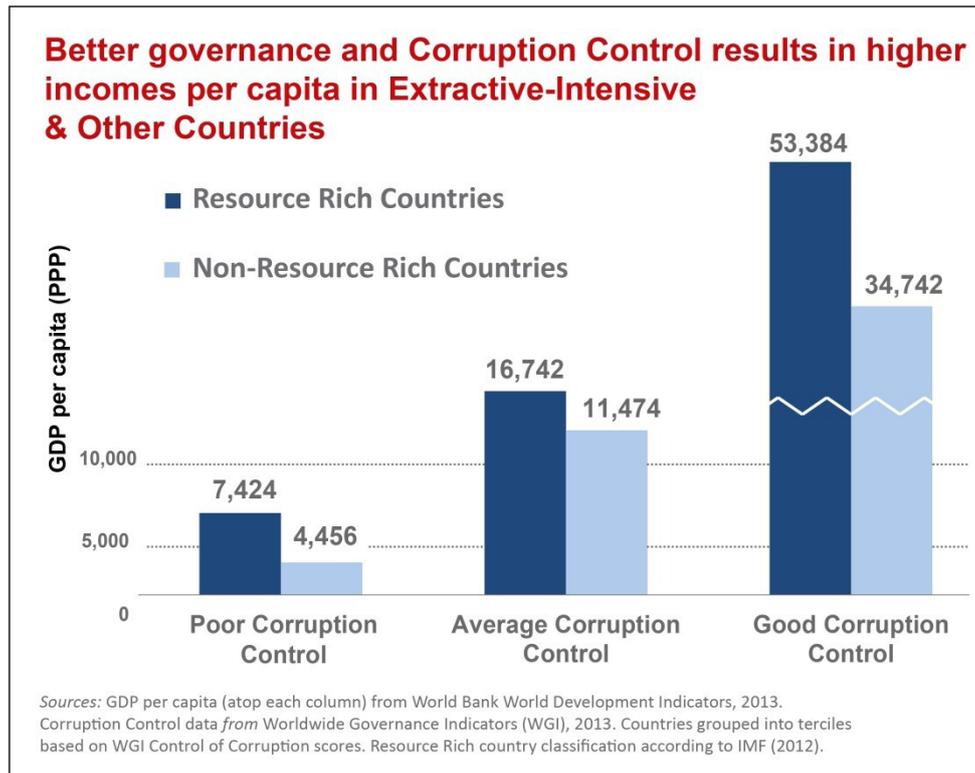
Just as strong institutions can support sustained economic development, weak

6 See, e.g., North 1990; North et al. 2008; Acemoglu and Robinson 2012.

7 Rodrik, Subramanian, and Trebbi 2002.

8 Kaufmann, Kraay, and Zoido-Lobaton 1999.

**Figure 2.2:** Better Governance Results in Higher Per Capita Incomes



Source: Kaufmann 2015.

institutions coupled with abundant natural resources can result in the so-called “resource curse.” Numerous studies document that in the last half of the 20<sup>th</sup> century, economies based predominantly on natural resources tended to develop more slowly than resource-poor economies. This “curse” cannot be explained by the fluctuation of commodity prices, climate, or other readily-apparent factors. Economists posit that, among other potential causes, weak institutions that allow capture by elites of resources and the proceeds gained from their extraction contribute significantly to this situation.<sup>9</sup>

While poverty has declined sharply in non-resource rich countries and is projected to continue to do so, the number of people living below the poverty line in resource-rich nations remains disproportionately high—around 1 billion people. **Without improved institutions, by 2030 the proportion of the world’s poor living in resource-rich nations is expected to rise from 20 percent to 50 percent.**<sup>10</sup> Fortunately, as Figure 2.3 illustrates, there is a correlation between improved governance and enhanced environmental outcomes (in this case, for (a) elephants and (b) rhinoceros).

A broad consensus has emerged that **institutions are also key to addressing**

9 Tietenberg and Lewis 2016. For further discussion on the resource curse, see chapter 1.

10 Kaufmann 2015.

**collective action problems and avoiding the tragedy of the commons**, where exploitation of shared resources results in their ruin.<sup>11</sup> For example, Case Study 2.1 details the critical role of institutions in addressing overfishing in Namibia and South Africa. The two countries both pursued legal reform; however, the study found that only one country emerged as a “regional success case” due to its emphasis on comprehensively strengthening relevant institutions.<sup>12</sup> Other studies show linkages between institutional failures and higher air and water pollution levels,<sup>13</sup> decreased population of protected species such as elephants and black rhinos,<sup>14</sup> and lower levels of environmental quality in general.<sup>15</sup>

### 2.1.2.2 Building Legitimacy

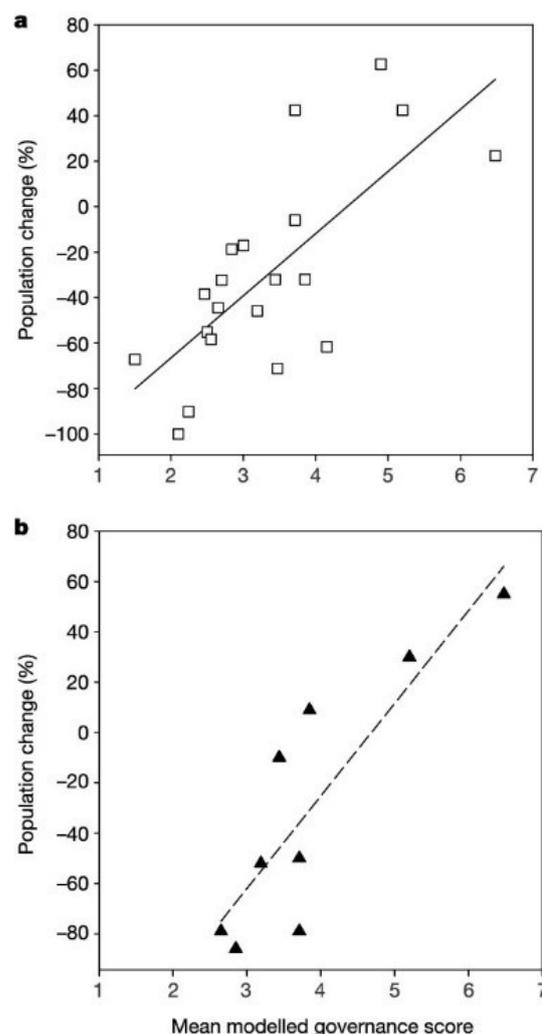
Institutions provide form and process in government decision making that enable the efficient delivery of public services. Provision of basic services, including delivery of water and management of wastewater and solid waste, is a core expectation of any state.<sup>16</sup> A study of 13 countries that managed to achieve significant, sustained growth in per-capita income found that one of the most important factors was a “committed, capable, and credible government.”<sup>17</sup> The study noted that all of these governments earned and retained the populace’s trust by delivering services and economic results as promised.

**Governments best deliver services through strong institutions to build legitimacy in both the institutions and in rule of law.**

Public services cost more when delivered by

institutions that are ineffective or corrupt. According to a recent survey from the Anti-Corruption Resource Center, 77 percent of Liberian respondents reported paying bribes for basic public services such as health care, education, and access to government documents. In countries with low corruption

**Figure 2.3: Mean Modelled Governance Scores and Changes in National Populations of Two Species, 1987–94**



Source: Smith et al. 2003.

11 See, e.g., Ostrom 1990; Agrawal 2001; Sjöstedt and Sundström 2015.

12 Sjöstedt and Sundström 2015.

13 Lambsdorff 2005.

14 Smith et al. 2003.

15 Esty 2002.

16 OECD 2010b.

17 World Bank 2008.



### Case Study 2.1: Role of Institutions in Namibia and South Africa in Ending Overfishing

Namibia and South Africa share many ecological, geographical, and historical characteristics, including the challenge of overfishing. While both countries embarked upon legal reform to address the problem, the authors of one study found that Namibia emerged as a “success case.”<sup>a</sup>

Namibia quickly established a post-independence administrative body for managing fisheries and policies for long-term management. The study authors point to a number of indications of strong policy enforcement: Namibia has the highest penalties in the world for illegal vessels caught in the country’s jurisdiction; a monitoring system described as “effective in preventing illegal fishing to a large extent”; low violation rates; and onboard inspectors who cover 91.5 percent of all seagoing vessels in the country’s waters.<sup>b</sup> Namibia experienced a 15 percent decline in “overexploited and collapsed” fish stocks over six years.<sup>c</sup>

South Africa also put into place administrative and judicial controls on fisheries after the fall of apartheid and initially experienced a decrease in illegal fishing. But within two years, support and funding for these institutions largely ended, and South Africa experienced an 11 percent rise in “overexploited and collapsed” fish stocks over the same six-year period.<sup>d</sup> The authors conclude that South Africa faced challenges to putting in place more robust enforcement mechanisms for a number of reasons, including that South Africa had existing institutions in place and interests vested in maintaining those arrangements.<sup>e</sup> Additionally, South Africa’s abundance of small, geographically-dispersed, artisanal fisheries made monitoring costlier and may have required unique institutional adaptations.<sup>f</sup>

The contrast between the two countries’ experiences reinforces the finding that strong institutions bolster environmental rule of law and produce real and meaningful environmental benefits.

a. Sjöstedt and Sundström 2015, 78.

b. *Ibid.*, 82.

c. *Ibid.*

d. *Ibid.*, 81.

e. *Ibid.*

f. *Ibid.*

indexes such as Japan, bribery incidence drops to as low as 1 percent.<sup>18</sup> In addition to making services more costly and less available, weak institutions can result in low quality provision of services, imposing larger barriers to access for the poor and other vulnerable groups. As discussed in Section 2.8 below, weak institutions that are beset by corruption are associated with higher levels of pollution and increased public service costs that fall disproportionately on the most vulnerable social groups.

### 2.1.2.3 *Creating Inclusivity and Cohesion*

Institutions can foster social inclusion and cohesion through public participation in government processes. Many diverse social and economic interests are at stake when a government body acts on an environmental issue. When a mining permit or forest concession is under review, for example, many different communities, businesses, and government agencies will have an interest, and the reviewing institution often provides an opportunity for public discussion regarding the permit or concession through public comment and review.

Although resolution of environmental issues is often viewed through the lens of conflict, institutional processes that facilitate interactions between interested parties with diverse interests can allow these groups to share their needs, interests, and ideas. For example, environmental impact assessment processes usually require agencies to solicit public input and convene public hearings on proposed projects, which provides an opportunity for parties with different perspectives and interests in the matter under review to listen and be heard. ***When a decision is made and adhered to***

18 Rose 2015.

***by the institution and interested groups, it strengthens social and political inclusion, cohesion, and resilience.*** Studies suggest that institutions that successfully promote the common good in an inclusive manner create security, stability, and a willingness to accept law, all of which are fundamental to establishing and maintaining rule of law.<sup>19</sup>

Some scholars, including Nobel Laureate Amartya Sen, argue that social and political inclusion is itself an end. Sen contends, pointing to historical evidence, that giving voice to members of the public within political institutions is an effective means to prevent epic failures of the state, such as famine.<sup>20</sup> He also argues that having a voice within the institutions that wield power is a fundamental human need and one that should be pursued alongside the economic goals of development.<sup>21</sup>

### 2.1.3 *Foundations of Effective Institutions: Capacity, Accountability, Integrity, and Leadership*

Effective institutions are characterized by their capacity, accountability, integrity, and leadership.

People are the heart of any institution, and institutions are only as capable as their staff. Studies have shown that building institutional capacity entails recruiting talented people and giving them the incentives and tools to perform well.<sup>22</sup> Additionally, providing both the staff and the institution with clear mandates helps direct the deployment of

19 OECD 2010a, 2010b; Roos and Lidström 2014; Ma and Wang 2014; Mallett et al. 2015; Mazurana et al. 2014.

20 Drèze and Sen 1989; Sen 1999a.

21 Sen 1992; Sen 1999b.

22 World Bank 2008.

institutional resources and staff attention. Capacity requires not just an initial investment in critical personnel, but an ongoing commitment to the training and development of agency staff as well as provision of sufficient resources and sufficient numbers of staff. Without sufficient human capacity, it is not possible for institutions to deliver the environmental results expected of them.

Institutions instilled with integrity and accountability are more effective at delivering enduring sustainable development.<sup>23</sup> Capable institutions can fail and undermine the environmental rule of law if they lack integrity and accountability. Corruption, undue influence from political or economic powers, and failure to account for the interests of under-represented groups (such as youth, women, and indigenous communities) render institutions ineffective.<sup>24</sup> Even well-executed and fair decisions can be undermined or sow distrust if they are not transparently documented and do not include an adequate opportunity for stakeholder input and review. Institutions at all levels of governance are strengthened when they are open, well-integrated, and accountable to their constituencies.<sup>25</sup> In order to mitigate these potential problems, Germany has instituted a single government service telephone number to improve access to government services and increase accountability. The German federal government is also working to create transparency at all levels of government through its promotion of open data and enhanced e-government as part of its participation in the Open Government Partnership, an initiative launched in 2011 with 75 participating nations.<sup>26</sup>

While they vary greatly in form, mechanisms to ensure institutional integrity and accountability share common roots of transparency, inclusiveness, and checks and balances to power. Recognizing that each country reflects the uniqueness of its culture and institutions, such mechanisms can include:

- stand-alone bodies, such as anti-corruption commissions, courts, legislative oversight committees, ombudsmen, inspectors general, and supreme auditing institutions;
- transparency mechanisms, such as detailed, publicly-available documentation of decisions, public access to the information upon which decisions are based, and whistleblower protection laws; and
- public participation processes, such as widely publicizing proposed decisions and encouragement of stakeholder consultation at many phases of decision making.

These mechanisms are discussed further in the chapters on Civic Engagement and Justice.

***Institutions require visionary leaders with integrity to motivate staff to achieve results.***

Able leaders show political will to effectively address difficulties, use sound management techniques, and model behavior expected from employees.<sup>27</sup> If ministers and agency leaders act in these ways, then the institution is much more likely to reflect these traits, to be effective, and to build environmental rule of law with confidence from the public.

23 Ibid.

24 Welsch 2003.

25 UN General Assembly 2014, para. 82.

26 See <https://www.opengovpartnership.org/about/about-ogp>.

27 Spears 2010.

### 2.1.4 Challenges to Building Effective Institutions

While the benefits of effective environmental institutions are many, all countries across the spectrum of geography, politics, and development face challenges in building institutions. An institution that is performing well within one context may be ill-equipped to address other contexts: the same conservation ministry that has managed its parks well for years may need to be strengthened to address a surge in illegal wildlife trafficking driven by civil war in a neighboring country, for example. Institution building is a dynamic and ongoing process that must be revisited over time to account for changing contexts.

Compounding this challenge is the reality that institutions are path-dependent, meaning they are constrained by how they were formed and how they developed over time. If a new ministry of the environment is created by combining a pollution control agency with the agency that manages resources, each of the previous agencies is likely to have a discrete set of skills and an organizational culture gained over time. As a result, institutional reform may need to come incrementally and should be tailored to the circumstances and context in which the institution operates.

In developing and emerging market economies, there are additional difficulties to surmount. Too often, institutional reform focuses on making institutions look “modern” by modeling what has worked elsewhere instead of creating institutions that work in that particular context. Scholars have argued that such “isomorphic mimicry” may fail to deliver better institutional performance, and indeed “reform via cut-and-paste from a foreign setting is a capability trap that

inhibits real improvements.”<sup>28</sup> ***Increasingly, best practices emphasize the importance of locally grown institutional reforms that are adapted to the local context.***

For example, in the wake of the 1997 Asian financial crisis, the World Bank and other donor agencies helped establish the Kecamatan Development Project as a means of laying the institutional groundwork to facilitate the growth of a democratic society in Indonesia. Rather than attempting to impose a system borrowed from a foreign context, the project revolved around the use of *kecamatan* councils—local community forums that held historical relevance in Indonesian culture—to promote broader political engagement by empowering villagers to propose and select small-scale development projects through a competitive process.<sup>29</sup> And as discussed in Case Study 2.5, beach management units that relied on local citizens for added surveillance augmented fishery enforcement in Tanzania.

Creating institutions that reflect local culture and circumstances presents a challenge as it requires countries to find individual solutions to their particular challenges that work in their unique context while facing real, and often acute, resource constraints. Moreover, where there is a culture of patronage, elite impunity, or exclusion, environmental rule of law requires adopting new approaches—often in response to the existing context and history. This chapter explores some of those alternative approaches.

### 2.1.5 Chapter Roadmap

This chapter reviews the seven key elements in building more effective environmental institutions identified in Figure 2.4.

28 Andrews, Pritchett, and Woolcock 2010, 6.

29 Adler et al. 2009.

## 2.2 Clear and Appropriate Mandates

Clear and appropriate mandates enable institutions to act while ensuring clarity of purpose and accountability. Mandates for environmental institutions are usually provided through laws or executive orders. In ideal situations, the statute or order that creates an institution sets forth clear boundaries for the organization’s jurisdiction, details achievable goals in order to focus the organization’s efforts, and provides the needed authorities and tools to meet these goals. However, institutions sometimes find themselves without one or more of these elements in their mandates. In addition, often they have to adapt to changing circumstances

that their activities and their mandates no longer closely match.

### 2.2.1 Key Elements of Jurisdiction, Goals, and Authority

***Institutional mandates that are straightforward and transparent and that detail an institution’s jurisdiction, goals, and authority allow leaders to focus the institution’s efforts and allow the public to ensure accountability.*** Mandates need to be appropriate to the jurisdiction and capacity of the institution, and vice versa, in order to achieve results. For example, many governments are searching for ways to reduce greenhouse gas emissions using existing institutions’ legal authorities

**Figure 2.4:** Elements of Building Stronger Environmental Institutions



and expertise. If the government wants to mandate reduction of greenhouse gas emissions from utilities, this could be done through the energy ministry, the ministry of industry, the environment ministry, or some combination. An examination of the institutions' legal jurisdiction and existing skills in these areas can help determine which institution has the jurisdiction and skills to best fulfill this mandate. The success of a strategy will depend in large part on the ability to align the desired outcome with the ability and authority of the institution charged with achieving the outcome.

Scholars argue that organizational boundaries and specialization are essential to ensure financial and human resources focus on the core institutional missions.<sup>30</sup> In other words, it is important that organizations have clearly delineated jurisdictional boundaries that specify the issues they are to take on, oversee, or monitor. In Jamaica, for example, responsibility for implementing multilateral environmental agreements is apportioned among several agencies that have expertise in relevant areas, such as chemicals management or waste management, while the National Resources Conservation Authority has the responsibility for overseeing multilateral environmental agreements not assigned to other agencies.<sup>31</sup> This ensures clarity of purpose and responsibility for the various agencies.

Environmental issues are often technical and complex, requiring specialized knowledge and skills. ***Providing an institution with specific jurisdiction over an issue allows it to invest its resources in a focused manner and to be accountable for results in this area.*** For example, many countries rely on dedicated environmental prosecutors to enforce environmental laws. Prosecutors

who specialize in environmental enforcement learn the skills necessary to investigate and pursue investigations that may be based upon an in-depth understanding of specialized environmental monitoring and analytical data. Brazil's constitution tasks its public prosecutor's office, or "Ministério Público," with protecting the environment among other responsibilities. Throughout the 1990s and early 2000s, state prosecutors in the São Paulo state alone filed over 3,000 environmental lawsuits. While most federal prosecutors in the country actively work on environmental law, around 100 prosecutors across Brazil's 26 states specialize in the area.<sup>32</sup> Spain takes a similar approach with its Environmental Prosecution Network, which was established in 2002 to enhance cooperation, efficiency, and expertise in environmental law among all levels of government. In its "European Union Action to Fight Environmental Crime" study, the European Union found that Spain's 10 percent increase in specialized environmental prosecutors since 2011 significantly contributed to its increased ability to enforce environmental crime.<sup>33</sup>

In addition to jurisdictional boundaries, institutions need clear goals toward which they may focus their efforts. Goals allow institutional leaders to benchmark the institution's performance more easily and to focus staff efforts. Bhutan has set a specific goal of retaining 60 percent of its land under forest cover,<sup>34</sup> for example, while China sets specific energy intensity, carbon intensity, renewable energy, coal consumption, and forest cover goals every five years.<sup>35</sup> The most effective goals are realistic, achievable, and responsive to public needs. Without specific goals, an organization's focus may

30 Wegrich and Štimac 2014.

31 UNEP 2006.

32 McAllister 2008.

33 Fajardo et al. 2015.

34 Constitution of the Kingdom of Bhutan 2008.

35 People's Republic of China 2016.

shift away from the most pressing needs at hand, and its efforts may not meet public and legislative expectations.

***It is critical that institutional mandates include sufficient authority to act.*** Often institutions are assigned an area of responsibility but are not given the necessary authority to act within this area. For example, in 2016, the U.S. Toxic Substances Control Act was reformed in response to broad recognition that the original 1976 law provided the U.S. Environmental Protection Agency inadequate regulatory tools for ensuring the safety of chemicals used in consumer and industrial products, even though the agency had responsibility for regulating toxic substances.<sup>36</sup> Similarly, many environmental enforcement entities lack the full spectrum of authorities needed to meet compliance objectives. From 2004 to 2008, the Asian Environmental Compliance and Enforcement Network conducted a series of rapid assessments of Member States' environmental compliance and enforcement programs.<sup>37</sup> Many of the reviewed programs possessed clear authority to develop policies and guidelines, issue permits, and, to some extent, conduct inspections, but lacked clear or sufficiently comprehensive mechanisms to limit and require monitoring of pollution discharges, file criminal or civil cases, take emergency response actions (such as closing a facility), impose penalties, or order corrective measures. In the absence of an appropriate mandate including well-defined legal tools and implementation mechanisms, agencies often have been reluctant to act or ineffective when they have taken action.

Authority provided to agencies also needs to be clear and unambiguous. Frequently, environmental actions are sidelined by questions over the authority of an institution

to act on a specific issue, such as when a statute may exceed the government's authority to act by infringing on property or civil rights or is not clear about the scope of an agency's jurisdiction. For example, significant litigation and regulatory delays have occurred in the United States over the scope of the federal government's authority to regulate greenhouse gases under the Clean Air Act<sup>38</sup> and to regulate intrastate waters under the Clean Water Act.<sup>39</sup>

Often in environmental matters, new threats or issues arise for which no institution has clear authority or jurisdiction. This is especially true for new technologies that are not specifically addressed in existing laws, such as nanotechnology.<sup>40</sup> Institutions that try to regulate or otherwise intervene without an explicit mandate risk being accused of regulatory overreach while those that do not respond risk being accused of not protecting the environment and public health. Public expectations can be frustrated, as can agency staff, if the authority and resources to act are not available in such instances. For example, as scientists have started to create new organisms in laboratories using so-called "synthetic biology," it is not always apparent what organizations, if any, have a mandate to regulate creation, containment, and disposal of the materials and organisms being created.<sup>41</sup>

Drones represent a different challenge: they can be used to detect illegal logging, poaching, or dumping of waste, but they also raise potential questions of personal privacy, chain of custody, and evidentiary value. In addressing both the environmental risks and opportunities presented by new technologies,

36 Nel and Malloy 2017, 1016.

37 AECEN 2015.

38 Utility Air Resources Group v. EPA, 134 S.Ct. 2427 (2014).

39 Kennedy and Phillips 2017.

40 Reynolds 2001.

41 Mandel and Marchant 2014, 155.

it is important that the law move with the technologies—and not lag behind.

### 2.2.2 Identifying Regulatory Overlap and Underlap

Institutions often suffer from regulatory overlap (where mandates are duplicated) and regulatory underlap (where no institution has a mandate to act). Agencies responsible for conservation and tourism may both have overlapping responsibilities for managing wildlife, while no agency may be charged with overseeing trafficking in illegal wildlife products. This often results when organizations are created in an ad hoc manner. At times, existing institutions are given new tasks or responsibilities without clear direction or boundaries between institutions. At other times, new issues may arise for which no institution has specific and concrete authority to act.

A complicating factor for environmental rule of law is that environmental harms cross borders, media, and jurisdictions, implicating multiple institutions at multiple scales. As a result, ***environmental rule of law may be undermined by regulatory overlap and underlap when no single government or institution has a comprehensive understanding of an issue, much less authority to act.*** Each organization involved in an environmental issue will be more effective if (1) the issue is well studied to identify regulatory overlap and underlap, (2) the mandates of relevant organizations are coordinated, and (3) accountability for resolution of the environmental issue is assigned.

Efforts to prevent mercury poisoning highlight some of the challenges with regulatory overlap and underlap. Addressing mercury pollution from burning coal to generate electricity involves multiple sectors,

environmental media, and jurisdictions. Controlling mercury emissions implicates the type of coal being burned; air emissions of mercury from the utility; transport of airborne mercury for thousands of kilometers; land and water deposition of mercury, often in other countries; biomagnification of mercury in the food chain; and public health threats from inhalation and ingestion of mercury at many points along this path.<sup>42</sup> Because of the way mercury travels across media (air, water, and land) and jurisdictions, control of mercury emissions is both local in nature (such as airborne mercury pollutions in the local environment) and international (such as impairment of ocean health from mercury contamination). National and subnational institutions involved in natural resource extraction, power generation, air and water pollution, public health protection, fisheries management, as well as international organizations involved in pollution and ocean management, all have a stake in some part of controlling mercury pollution. National agencies must understand the transport



42 Driscoll et al. 2013.

of mercury across media and jurisdictions to best calibrate how to reduce exposure to airborne and waterborne mercury from domestic sources and how to approach mercury transported from abroad.

It can be difficult for regulators to be aware of regulatory overlap and underlap when issues cross agencies, geographies, and scales. ***In-depth analysis of regulatory scope, jurisdiction, and authorities can help identify overlap and underlap and inform legislative reform and capacity building efforts.***

Environmental performance audits, discussed in Section 2.7, offer valuable methods for conducting such analyses. Regional and international organizations like the Asian Environmental Compliance and Enforcement Network offer significant expertise from peer countries as well as assessment tools.<sup>43</sup> Institutions that address common or similar problems can benefit from knowledge sharing with their counterparts in other institutions to compare their understandings about the common problems being addressed and the solutions being used to address them. Such inter-agency consultation can help detect regulatory overlap and underlap. In addition, active involvement of legislative committees and open dialogue with the public, regulated community, and nongovernmental organizations can help assess gaps and overlap in agency mandates. These groups may have a broader perspective on the issues at hand. Analysis of overlap and underlap may suggest remedies such as increased interagency coordination, administrative reorganization, or new or revised legislation. We now consider the potential for coordination to alleviate the problem of overlap and underlap.

## 2.3 Coordination

***Effective and efficient institutions depend upon coordination within and across institutions and sectors.*** The authority to regulate a single ecologically-interconnected resource is often fragmented across many institutions, with different and often conflicting mandates. For example, 14 organizations located in Zambia and Zimbabwe have a legal mandate to manage the water resources of Lake Kariba, the Zambezi River (which feeds it), and its tributaries.<sup>44</sup> In Peru, 18 national institutions played a role in tracking timber chain-of-custody data, and, until efforts were made to map out and coordinate their roles, they each had different and sometimes redundant requirements.<sup>45</sup>

Fragmented jurisdiction can result in duplication of effort and wasted resources; policies that are not mutually reinforcing or even conflicting; obscured lines of responsibility for policy failures; bureaucratic infighting and maneuvering; confusion among stakeholders about who the relevant authority is; and delays in identifying exigencies and implementing responsive measures.<sup>46</sup>

The investigation and prosecution of environment-related crimes—which must align law enforcement capacity, environmental expertise, and prosecutorial authority—often suffer from significant coordination gaps, as shown in Case Study 2.2. A survey of European environment-related crime agencies revealed that information sharing across agencies is often prohibited by privacy laws; environmental management agencies are often untrained on evidence collection and handling, which undermines their ability to build a case for prosecution; and many agencies

43 See <http://www.aecen.org/activities>.

44 Mhlanga, Nyikahadzo, and Haller 2014.

45 Cheung et al. 2014.

46 Mhlanga, Nyikahadzo, and Haller 2014.



simply lacked sufficient personnel and expertise to adequately enforce the laws.<sup>47</sup> In Cambodia, the Minister of Agriculture blamed the failure to prosecute 70 percent of agriculture, forestry, and fishery crimes on lack of coordination between prosecutors and courts.<sup>48</sup> There is ample evidence that failure to adopt coordination mechanisms can derail enforcement efforts and result in significant wasted effort and laws not being enforced.<sup>49</sup>

47 Intelligence Project on Environmental Crime 2015.

48 Goncalves et al. 2012.

49 See Intelligence Project on Environmental Crime 2015.

Coordination among institutions provides numerous benefits:

- Coordination is a key method for identifying and addressing regulatory overlap and underlap by helping institutions see beyond their own mission and experience with the help of sister institutions.
- Coordination can improve performance horizontally (among national or sub-national institutions, or among the sub-components of a single institution) as well as vertically (from national to the various subnational entities, and upward as well).<sup>50</sup>
- Coordination reduces bureaucratic infighting by addressing upfront the areas where agencies will operate in tandem or in parallel so that lines of authority are better delineated before conflict arises.
- Coordination makes clear to stakeholders where to seek redress and whom to hold accountable.

Coordination between institutions provides real and important results but can be difficult if policymakers and managers do not make coordination a priority. Often no single agency is tasked with coordinating among agencies, and little credit is given for the results achieved through close coordination. Designating an agency or official responsible for coordination, as Jamaica has done by giving its National Resources Conservation Authority oversight of multilateral environmental agreements, empowers an agency to undertake coordination while also providing a focal point for accountability for lack of coordination.

50 Wegrich and Štimac 2014.



Rainforest on Java, Indonesia

## Case Study 2.2: Lack of Coordination in National Environment-Related Crime Units of Germany and Indonesia

### *Germany: Traffic Police and Chemical Waste*

The German Traffic Police stop and check heavy-goods vehicles using a risk-based targeting approach and regularly find leaking barrels of battery acid or other hazardous substances. Although the waste is temporarily confiscated to address the immediate danger, the case reports are rarely accepted for prosecution by criminal police units or the public prosecutor agency because, as noted by EnviCrimeNet, the incident is not a priority within those institutions.<sup>a</sup> The lack of coordination, of consistent priorities across agencies, and of a mandate to target and prioritize such crimes create an enforcement gap.

### *Indonesia: Satellite Data and Illegal Logging*

Indonesia established a satellite mapping program to gather information intended to help improve detection of illegal logging over large areas that are difficult to patrol on a regular basis. However, it was reported that between 2002 and 2003, no legal cases were initiated because the satellite images and analysis of the images were never provided to forest law enforcement or the prosecutor's office.<sup>b</sup> Formalizing procedures for the exchange of information is an essential and cost-effective step to promote stronger enforcement.

In both instances, simple increased coordination among agencies could result in significant increases in fighting environment-related crimes.

a. Intelligence Project on Environmental Crime 2015.

b. Goncalves et al. 2012.

**Figure 2.5: Basic Coordination Methods**

	<b>Strengths</b>	<b>Limitations</b>
<i>Enhancing hierarchical controls</i>	<ul style="list-style-type: none"> <li>• One institution bringing resources and focus to bear increases results and reduces regulatory underlap</li> <li>• Easier to hold institutions accountable</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces information sharing and responsiveness</li> <li>• Risk of abuse and politically determined decisions</li> <li>• Less likely to produce comprehensive policies</li> </ul>
<i>Promoting collaborative governance</i>	<ul style="list-style-type: none"> <li>• Organic and dynamic</li> <li>• Produces more comprehensive understanding of issues and better solutions</li> </ul>	<ul style="list-style-type: none"> <li>• Results in competition for power or failure to take responsibility</li> <li>• Leaves stakeholders with no clear point of contact</li> <li>• Resource intensive</li> </ul>

This section reviews various methods and strategies for coordinating across and within institutions, including customary and statutory institutions.

- Promoting collaborative governance through inclusive procedures and mediation across a range of stakeholders.<sup>51</sup>

### 2.3.1 Approaches to Coordination

Coordination has several dimensions to consider: there are hierarchical and collaborative approaches to coordination, and coordination is both horizontal (across sister institutions) and vertical (down a chain of command) in scope. In general, coordination falls into two categories of approach that are outlined in Figure 2.5, both of which have advantages and disadvantages:

- Enhancing hierarchical controls, such as strengthening the monitoring and intervention capacity of a centralized authority or merging fragmented organizational structures; and

***The imposition of controls that rely predominantly on hierarchy can cause one agency to focus on an issue, helping to reduce the chances of regulatory underlap.***

At the same time, this may displace or disempower the other institutions engaged on the issue. A hierarchical approach can make it more difficult for subunits of agencies and smaller offices to participate in policymaking and for their contributions, such as localized knowledge or specialized expertise, to be heard at the national agency or ministry level. This means the final decision makers may not have the benefit of local and special knowledge that would result in the best decisions. For instance, a fisheries policy made at a ministry level without adequate consultation with local agencies and enforcement officials may not take into account unique aspects of local

<sup>51</sup> Ibid.

fisheries or social dynamics that could affect implementation of the national policies.

Placing authority in the hands of one government unit comes with the risk of abuse and decisions reflecting primarily the concerns of that unit. Using the fisheries example, the national ministry may set policy to drive maximum yield of fish for consumption, while local concerns about overfishing or fishing by nonlocal fisherfolk go unaddressed. In contrast, it may be easier to oversee a centralized decision-making process than one that is more diffuse. Accountability is focused in one place, which allows stakeholders with limited resources to identify the institution that is ultimately responsible.

The collaborative approach to coordination is an alternative that comes in two common forms, as discussed in Figure 2.6. In the first form, the institution with primary responsibility for an issue drafts a policy, and the draft is reviewed by other relevant institutions. Each institution can raise concerns if the policy contradicts one of its existing policies or needs other revisions. For example, the fisheries ministry may draft a policy on excluding nonlocal fisherfolk from local fisheries and circulate the draft policy to police, customs, and immigration officials for their review and comment. This limited form of engagement may reduce policy conflict (for example, by ensuring that fisheries practices do not conflict with customs practices); however, it is unlikely to produce a sufficiently comprehensive policy approach that advances multiple goals (namely, adopting a unified system to manage and prosecute nonlocal fisherfolk) because it leaves each institution to advance its own policy.

An alternative version of the collaborative approach combines the expertise of multiple institutions to work together. Task forces and inter-ministerial working groups are typical examples. This form of **collaboration can produce a vibrant exchange of ideas, creative**

**new solutions, and meaningful coordination across agencies and sectors.** For example, an interagency task force on management and prosecution of illegal fishing by nonlocal fisherfolk could bring a unified approach to a problem touched upon by multiple agencies. Formally structured inter-agency relationships (rather than those created on an ad hoc basis) can enhance effectiveness of this approach; promulgating regulations or entering into memoranda of understanding often provide such efforts with clear mandates.<sup>52</sup> Another approach is co-management of resources between national and local authorities—an approach that Kenya took for fisheries management, where a purely national approach had proven unsuccessful.<sup>53</sup>

Such collaborative mechanisms are complex and will not bear fruit unless there is a real exchange of ideas and a common problem-solving approach. Too often, task forces fail because they are used for political gamesmanship or as vehicles for institutional power struggles.<sup>54</sup> In addition, competing interests between agencies can make finding common ground difficult, particularly if there is limited political will to forge a common position or approach. In addition, diffuse responsibility may mean that no single agency feels empowered or responsible for ultimately addressing an issue.

Environmental institutions have faced significant coordination issues in part because many environmental ministries were created after 1990, long after water, timber, and other resource ministries were created. It was difficult for some ministries to operate alongside long-established peer ministries, and some struggles resulted over financial and human resources and which ministry would take responsibility for overlapping issues. Over time, some countries created

52 Fulton and Benjamin 2011.

53 Bruch et al. 2005.

54 Wegrich and Štimac 2014.

**Figure 2.6:** Collaborative Approaches to Coordination

	<b>Strengths</b>	<b>Limitations</b>
<i>Traditional approach (one institution leading and consulting)</i>	<ul style="list-style-type: none"> <li>• Reduces policy conflict</li> <li>• Agency receives benefit of sister agency review and comment</li> </ul>	<ul style="list-style-type: none"> <li>• Unlikely to produce comprehensive policy approaches</li> <li>• Disempowers sister institutions</li> </ul>
<i>Pooling of expertise approach</i>	<ul style="list-style-type: none"> <li>• Synergies produced from interaction of multiple institutions working together</li> <li>• Diversity of voices and perspectives more likely reflected in final action</li> </ul>	<ul style="list-style-type: none"> <li>• Highly complex; requires open exchange of ideas and joint problem-solving</li> <li>• May be resource intensive and requires ongoing political support</li> </ul>

inter-ministerial coordinating councils or commissions responsible for coordinating on environmental issues to address such situations and improve overall coordination. For example, Burkina Faso has the National Council on Environment and Sustainable Development, which is charged with integrating environmental management into national and sectoral development policies as well as providing a framework for interagency coordination and coordination with nongovernmental stakeholders.<sup>55</sup>

In addition to being hierarchical or collaborative, coordination is done both horizontally (among national or sub-national institutions, or among the sub-components of a single institution) and vertically (from national to the various subnational entities as well as from international to national).<sup>56</sup> Coordination also occurs across or within sectors: protecting species may require horizontal coordination

across sectors such as tourism, public lands, international trade, and customs.

As an example, consider the coordination necessary to address water pollution from mines. Figure 2.7 demonstrates that coordination happens on several planes: across ministries; among several offices within the environmental agency; and between the ministry, national agency, and provincial authorities.

### **2.3.2 Horizontal Coordination across Institutions and Sectors**

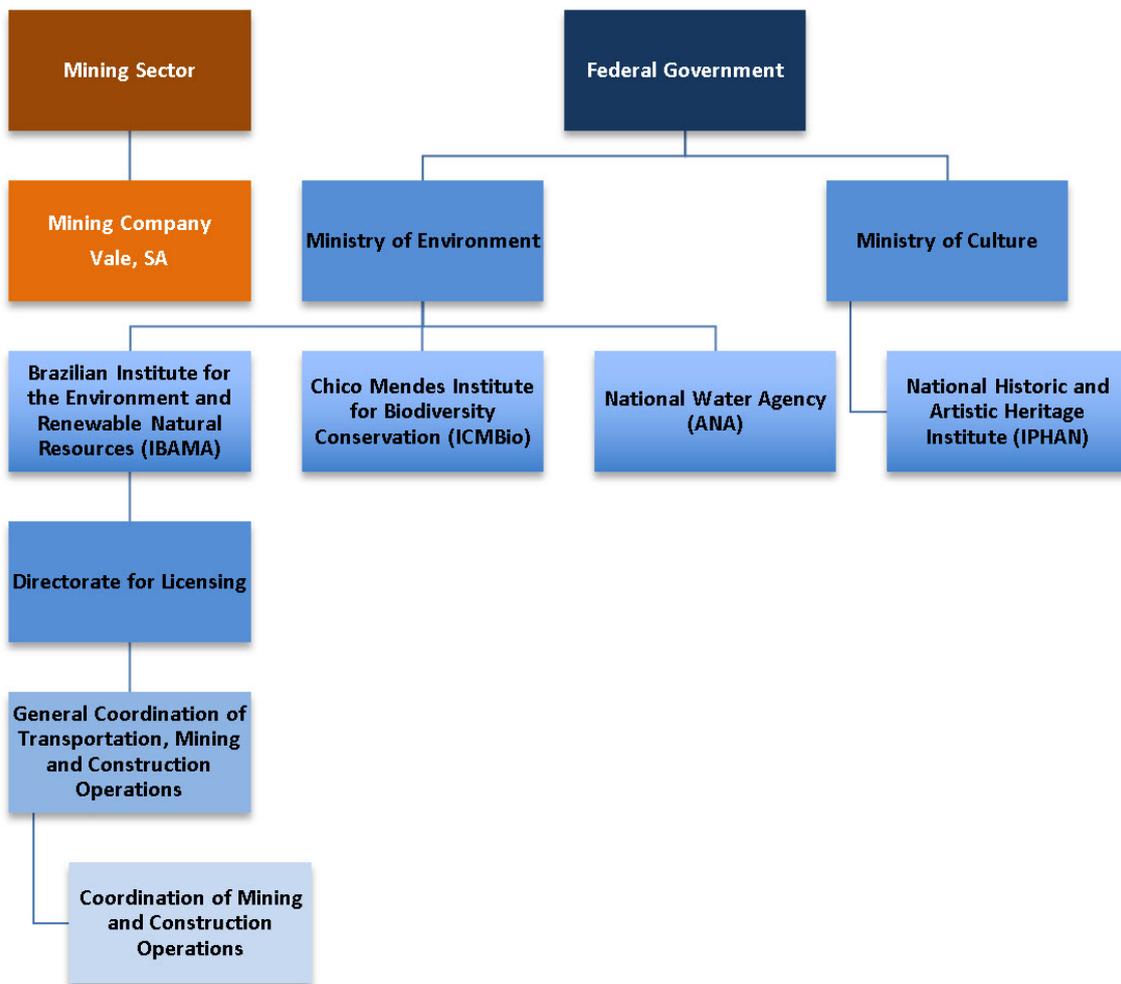
There are many examples of horizontal coordination across environmental institutions reflecting differing circumstances globally. As noted above, there is no single coordination approach because of the diversity of contexts and circumstances found in each country.

**Coordination across institutions can be facilitated by creating a framework for the interagency effort,** such as:

<sup>55</sup> GNNCSDS n.d.

<sup>56</sup> Wegrich and Štimac 2014.

**Figure 2.7: Vertical and Horizontal Coordination**



Source: Environmental Law Institute, with contribution from David Mendes Roberto Environmental Analyst on leave at IBAMA, Brazilian Institute for the Environment and Renewable Natural Resources.

Note: The environmental licensing process of the world's largest iron project, Carajas S11D in Brazil,<sup>a</sup> which is conducted by the mining company Vale, SA, entailed complex and coordinated steps. IBAMA, one of the main Brazilian environmental agencies, had the legal mandate to issue the license, but it needed reports from other institutions such as ANA and ICMBio because the project included the use of water resources and it is located in a federal area of conservation. IBAMA, ANA and ICMBio are all linked to the Ministry of Environment, illustrating a horizontal coordination. In addition, because the project affects an archaeological and cultural heritage unit, it also needed a report from IPHAN which is linked to the Ministry of Culture. The licensing process itself requires vertical coordination within Ministry of Environment.

a. Engineering & Mining Journal 2012.

- explicit consensus goals for the activity;
- clear delineation of responsibility for managing the activity, such as designating one participant to be responsible for convening the activity and documenting any results;
- comparable levels of responsibility within their respective organizations for participants; and
- empowerment of participants to act on behalf of their organization.

Examples of coordination range from information sharing to creating formal standing committees to joint investigations and enforcement. In Thailand, for example, enforcement agencies coordinated environmental enforcement efforts through a memorandum of understanding among the relevant agencies. The memorandum of understanding was not enforceable and did not create legal obligations, but it has been helpful for the different agencies to have a common understanding on issues of common interest.<sup>57</sup> Similarly, agencies in Tanzania join together when conducting environmental inspections so that the collective experience of the agencies can be brought to bear.<sup>58</sup>

Other countries have created formal institutions for coordination. Since the early 1990s, Mauritius, pursuant to national legislation, has had an Environment Coordination Committee to coordinate the environmental activities of the relevant national agencies. The Committee consists of the minister responsible for the environment, representatives from enforcing agencies, environment liaison officers, the Director of the Department of Environment, and any other public officer designated by the Committee. The Committee is responsible for

a wide range of activities, including developing policies and administrative measures to ensure prompt and effective consultation and information sharing; advising the minister and the National Environmental Commission to avoid duplication of functions and ensure proper enforcement; and generally fostering cooperation and coordination among agencies.<sup>59</sup>

Many countries assemble coordinating committees for specific cross-cutting environmental issues, such as climate change, desertification, and species protection. In 2014, Serbia created the National Climate Change Committee and appointed the Minister of Agriculture and Environment to lead the Committee. The Committee, comprising representatives from relevant ministries, is charged with monitoring development and implementation of national climate policies and related sectoral policies and proposing ways to ensure consistency of policies with the national climate objectives.<sup>60</sup>

No matter the form it takes, coordination is imperative. As shown in Case Study 2.3, ***coordination can directly affect a government's effectiveness.***

### 2.3.3 Vertical Coordination within Institutions and Sectors

Vertical coordination within institutions and sectors varies widely depending upon local factors such as the degree of centralization or decentralization and whether the government system is unitary (meaning all power flows down from the central government to subunits) or federal (where provincial and state governments may be

57 UNEP 2014a.

58 Ibid.

59 UNEP 2006.

60 UNDP-GEF 2015.



### Case Study 2.3: Joining Forces to Prosecute Illegal Logging ... or Not

Virachey National Park is one of Cambodia's pristine conservation areas and one of only two Association of South East Asian Nations Heritage Parks in Cambodia. Despite being isolated and largely unexplored, it has also been plagued by illegal logging for decades.

After significant damage from illegal logging was discovered by the World Bank and global nongovernmental organizations in 2004, Cambodian agencies mounted a concerted effort to prosecute illegal loggers with international assistance. The Ministry of Forestry and Ministry of Environment, which were responsible for forests, collaborated formally and informally with the Ministries of Interior, Justice, and Defense. In addition, Cambodian officials enlisted the assistance of peers in Laos and Viet Nam. In the end, 11 police officers and government officials were convicted and sentenced to five years in prison. In addition, seven officials, including the governor of one of the largest provinces in Cambodia, were each sentenced in absentia to six to seven years in jail.

But in 2008, the World Bank and major international nongovernmental organizations pulled out of the Virachey effort. Since then, illegal logging has reached new heights, according to local press reports and several reports by international nongovernmental organizations that portray an active logging business that exports logs from the Park to neighboring Viet Nam.<sup>a</sup> When asked by reporters about illegal logging in the park, officials at the ministries in the capital, Phnom Penh, said it was a minor, sporadic problem or referred reporters to the provincial authorities and police, saying illegal logging was a local responsibility. The provincial police chief in turn said his officers only get involved when asked by the Forestry Department to intervene. In other words, interagency cooperation and lines of authority appear to have seriously degraded across agencies. According to research published in the journal *Science* in 2013, Cambodia experienced the fifth fastest rate of deforestation in the world in the previous 12 years.<sup>b</sup>

a. CHRTF 2015; Zsombor and Aun 2013; Global Witness 2015.

b. Zsombor and Aun 2013; Goncalves et al. 2012.

largely co-equal to and regulate in parallel with the national government).<sup>61</sup>

**Coordination within institutions is vital to ensure that information gathered in one office, such as permitting or inspections, is relayed to and acted upon by other offices, such as enforcement and regulatory development.** Larger countries frequently tinker with the allocation of powers and responsibilities between national, state/provincial, and local governments. In China, for example, the [unitary] national government has experimented both with devolving more power to provincial authorities and with developing new methods for coordinating between the subunits and with the national level. This approach seeks to develop an effective balance between local control and alignment with national goals.<sup>62</sup>

Governments often find benefits and risks in devolving power. Having a national agency responsible for permitting, for example, can help ensure consistency in permitting and enforcement across the country, which might not occur if provinces or municipalities issued permits. By contrast, local officials and stakeholders may not accept decrees issued from a distant national capital that they feel do not reflect local concerns and practices and may be more vulnerable to being influenced by local industry and economic interests. Indeed, many countries emerging from conflict have adopted, as a peacebuilding strategy, provisions in their constitutions that devolve or decentralize authority over natural resources and other issues.<sup>63</sup> **Close oversight and coordination by national officials can address many of the potential risks in devolving power to subunits.** As demonstrated in Case Study 2.4, failure of governmental units to coordinate and to hold each other accountable can be disastrous.

Despite the risks, devolving authority and power to subunits can result in better outcomes. As described in Case Study 2.5, vertical coordination using local beach management units in Tanzania allowed closer coordination with stakeholders directly involved in resource management to improve environmental results.



Flint River in Flint, MI

### 2.3.4 Coordination of Statutory and Customary Institutions

In many countries, more than one set of laws may apply—a governance arrangement known as legal pluralism. Laws can be statutes adopted by legislatures, customary laws from traditional authorities, religious laws from religious authorities, and other types of law. Customary laws have force formally or informally in many places, often reflecting the intersection of indigenous laws

61 Capano et al. 2012; Manglik et al. 2010.

62 Ibid., 7.

63 Bruch et al. 2017.

### Case Study 2.4: Poisonous Water in Flint, Michigan, United States

In 2016, then-U.S. President Barack Obama declared a state of emergency in the city of Flint, Michigan. For years, city residents had been drinking water with dangerously elevated levels of lead, which is hazardous to all and can cause serious neurological damage to children.<sup>a</sup>

In order to save money, Flint switched its water source from the nearby city of Detroit to a local river. Agents of each responsible institution failed to investigate subsequent clear signals of trouble with local water quality. The new water source had higher corrosiveness, which caused lead from the pipes to leach into the water supply. Local officials failed to test the water in homes in order to monitor lead levels. The Michigan Department of Environmental Quality failed to follow its own protocols to investigate the issue. The U.S. Environmental Protection Agency, which issued a memo outlining the corrosiveness problem, informed local officials that it was a draft memo and did not push aggressively for more investigation. The Michigan Department of Health and Human Services prepared and then dismissed a report revealing higher-than-usual lead levels in the blood of children who lived in Flint.

It was only when a local medical center reported double the number of children with high levels of lead in their blood that public attention caused a regulatory response. A panel subsequently issued a report concluding that state officials were “‘fundamentally accountable’ for the lead contamination of Flint’s water supply.”<sup>b</sup> This example illustrates the fact that even if several institutions detect a problem, without coordination and clear accountability action may not be taken to address the problem.

- a. DeLaney 2016.
- b. McWhirter 2016.

and institutions with statutory laws brought by colonizing powers.<sup>64</sup>

Legal pluralism is particularly important in environmental rule of law because many indigenous communities have complex traditional legal systems and customs governing natural resources important for livelihoods and food security, such as water, forests, land, and fisheries. In rural areas in many countries, customary and religious legal systems enjoy greater legitimacy than statutory law, and a growing

number of countries recognize this in their constitutions and environmental laws.<sup>65</sup> Religious laws can also help normalize and implement traditional environmental protection concepts. Islam, for example, has strong principles regarding prevention of waste and minimization of harm that can be incorporated into statutory provisions or referenced in customary law settings.<sup>66</sup> The ways in which statutory and customary laws interact are outlined in Figure 2.8.

64 Fajardo 2004.

65 Meizen-Dick and Nkonya 2007.

66 Ahmad and Bruch 2002.

### Case Study 2.5: Using Local Beach Management Units in Tanzania

With support from the World Bank, the Tanzanian government created local beach management units to improve local fisheries management. The project's goal was to stop detrimental fishing practices, such as using poison or dynamite, by increasing community involvement in surveillance and management of the fisheries. The local beach management unit members were not deputized or given legal powers, but identified suspects to enforcement agencies.

According to local fishery managers, these efforts have reduced illegal fishing practices such as using poison and dynamite. Studies also suggest that some local fisheries have improved. Researchers posit that this may be attributable to fisherfolk learning from each other through the local beach management unit process.<sup>a</sup> Thus, coordination with local communities can simultaneously improve enforcement and resource outcomes.

a. Eggert and Lokina 2010.

Legal pluralism can be critically important in extending governance authority in fragile and conflict-affected settings, engaging traditional institutions, and linking to statutory regimes.<sup>67</sup>

**Reliance upon customary institutions can enhance both management and enforcement,** which a national government may be unable to provide given limited resources.<sup>68</sup>

In newly independent Timor-Leste, for example, the new government relied upon traditional leaders and practices to manage natural resources by explicitly embracing the customary approaches and underwriting certain program expenses. This approach allowed natural resources to be managed in a way that maintained customary institutions respected by local people, gradually built legitimacy of state institutions, and ultimately enhanced the overall environmental rule of law.<sup>69</sup>

**Ensuring fair and just coordination between customary and statutory institutions is critical to ensuring environmental rule of law.<sup>70</sup>**

Studies of the interaction between these two systems in managing resources have noted that allowing customary and statutory law to apply in tandem can create uncertainty and different expectations in different communities.<sup>71</sup>

It is critically important to articulate clearly how the bodies of law relate to one another and which law applies under which circumstances. In addition, when statutory law incorporates customary rights over a resource, indigenous communities may still be at a disadvantage. Such communities are often unfamiliar with statutory law and lack ready access to the experts and courts that implement and enforce statutory law. As such, indigenous communities may not be able to use the statutory system effectively to defend or exercise their rights.

67 Meinzen-Dick and Pradhan 2016; Unruh and Williams 2013

68 Meinzen-Dick and Pradhan 2016.

69 Meinzen-Dick and Pradhan 2002; Miyazawa 2013.

70 Mapaire 2009.

71 Meinzen-Dick and Pradhan 2002.

**Figure 2.8:** Intersections of Customary and Statutory Law

<i>Laws operate in parallel</i>	Customary laws and institutions may operate in parallel to statutory law, such as when indigenous communities have their own legal systems that operate in conjunction with the national constitutional system. For example, indigenous governments may implement national environmental laws on tribal land.
<i>Laws operate separately</i>	Customary laws may operate in lieu of statutory law when certain groups remain sovereign or when there is a policy choice to embrace customary law. Land owned by indigenous people may be governed by customary law, for example, and be exempt from national statutes.
<i>Statutory incorporates customary</i>	National laws may incorporate the customary laws of indigenous communities and reflect their practices. Often statutory water laws incorporate traditional practices of communities toward the right to own or use water.
<i>Customary has targeted application</i>	Customary law may apply only to certain groups or resources within a country, such as Shari'a law applying in some countries to adjudicate issues within Muslim communities or tribal law governing indigenous peoples' right to fish.

Legal pluralism offers a chance to integrate traditional legal approaches with statutory approaches in an effort to draw upon the best practices of both approaches. Many scholars have noted that it is important for statutory institutions to provide oversight in the implementation of environmental laws by customary institutions to guard against discrimination against women, minorities, and disadvantaged populations.<sup>72</sup> These challenges can be addressed, though, and the strong weight of scholarship favors legal pluralism.

## 2.4 Capacity Development

Even the best written law or most carefully organized institution will not be effective without staff who have the necessary training and incentives to implement the institution's mandate. Staff shape the institutions in which they work, and the public and stakeholders often see staff as synonymous with the institution itself. Capacity gaps in institutions can erode confidence in the institution and undermine its decisions. Moreover, institutional capacity can be critical to effective legislation and implementation.

The vital link between developing the capacity of staff and institutions and achieving sustainable development was recognized at the 1992 United Nations Conference on Environment and Development, which

72 Ibid.

found that ***“the ability of a country to follow sustainable development paths is determined to a large extent by the capacity of its people and its institutions ....”***<sup>73</sup>

This conclusion was reiterated 20 years later at the United Nations Conference on Sustainable Development, which emphasized “the importance of human resource development, including training, the exchange of experiences and expertise, knowledge transfer and technical assistance for capacity-building” in meeting Sustainable Development Goals.<sup>74</sup>

Human capacity is reflected in a variety of ways: subject area knowledge, technical skills, managerial skills, diligence, professionalism, ability to interact with stakeholders, critical thinking, and many other aspects of working to meet institutional goals. A skilled and professional staff can be developed through several common-sense measures detailed below.

Publishing clear and specific skillsets for each position within an institution helps to ensure that staff who are hired have the abilities and training necessary to effectively carry out their responsibilities. It also allows managers to identify potential overlap between positions and to set clear expectations with employees regarding their duties. For example, a position description for an environmental inspector might set forth the necessary investigative skills and technical capacities needed for an inspector to adequately examine, manage, and understand highly technical data, while also detailing the inspector’s areas of responsibility, such as conducting field inspections and writing reports that can support enforcement actions brought by prosecutors.

Developing new skills in staff is also critical to meet the needs of environmental institutions.

Providing in-depth training for staff can be a significant commitment of resources; some countries (such as Ecuador) provide funding for higher education and in-depth training in exchange for a commitment by staff to return to the agency for a minimum amount of time after the training is complete.<sup>75</sup>

Many countries rely on secondment of staff between agencies and between countries to leverage existing skills in other agencies and help develop skills. Bringing in experienced staff from other countries to work side-by-side with in-country staff can help build capacity. Several programs, like the European Union’s Research and Innovation Staff Exchange, provide for exchange of staff between nations.

Once staff have obtained the necessary abilities, ongoing training allows staff to stay current in their required skills, learn general management skills, and stay abreast of new developments in their field of expertise. Institutions can lose public confidence if staff are not kept current on new issues in their field and new ways of accomplishing their duties. Staff training and development are sometimes portrayed as a diversion of scarce resources, but without them, staff capacity, efficiency, and morale suffer and undermine institutional performance. As shown in Case Study 2.6, ***even the most capable institutional actors cannot perform their duties without adequate training.***

An integral part of capacity for staff is the availability of adequate financial and technical resources for staff to accomplish their tasks. Having access to computers, software, internet, vehicles, office supplies, and other tools to perform their tasks is critical for staff to undertake their responsibilities.

Opportunities for staff to know and work with peers in other institutions increase

73 United Nations Sustainable Development 1992, para 37.1.

74 United Nations 2012, para. 277.

75 Pearson 2012.

coordination and knowledge sharing. As noted in the discussion of coordination above, staff can greatly increase their understanding of their field when they interact with peers in other agencies and institutions who may see different aspects of the same issue. Creating inter-agency working groups to address areas of common concern can facilitate the exchange of skills and knowledge and result in better coordination. For example, staff who meet with peers through an inter-agency commission on climate adaptation may learn from the experience of their peers and peer agencies on climate issues. Such meetings and interactions are valuable investments in program outcomes.

Staff capacity is the cornerstone of strong institutions necessary for environmental rule of law. Investing in staff skills through ongoing training also enhances team spirit within an institution, which attracts the most qualified candidates and encourages employee loyalty. In turn, building human capacity creates a respected and admired workforce, which strengthens confidence in government overall.

## 2.5 Information Collection, Management, and Use

Environmental rule of law is predicated upon accurate, reliable, and readily-available information and data. A core function of institutions is to collect, manage, and use data using standards and methods that ensure the accuracy, reliability, and availability of the information. Agencies use data to determine what should be regulated and how to determine whether the regulated community is in compliance. For example, setting standards for pollution control requires an accurate understanding of the risks posed by the compounds at issue, and enforcing these standards requires reliable emissions data from regulated facilities. Similarly, publicizing

enforcement actions can cause others to comply, which helps a culture of compliance to take root. Thus, the use and exchange of data and information underlie many elements of the environmental rule of law.

Failure to ensure data are sound can result in poor regulations and ineffective implementation. For example, Australia adopted a water reform framework in 1994 that sought to (1) increase the efficiency of water allocation and (2) match price with actual cost. However, a new initiative was introduced only ten years later to address issues left unresolved by the initial framework. The lack of progress was largely due to vague and poorly understood environmental costs and benefits, and this was aggravated by the fact that the public was not involved in initial debates on the reform. Further, lack of consensus on sustainable levels of water withdrawal led to ineffective implementation, resulting in challenges to the policy based on its questionable scientific foundation.<sup>76</sup>

Basing decisions on sound data allows institutions to explain their decisions and enhance public understanding. To accomplish this, ***the data used by agencies should be made available transparently***. Public access to environmental information can help the public understand environmental issues, track the performance of the agency and regulated community, and even see changes in environmental quality.<sup>77</sup> For example, when an agency attempts to reduce water pollution, making available information on the baseline water quality, the changes in water quality over time, and the enforcement actions taken with regard to water discharges can help the public understand the progress being made, or not made, with regard to pollution.

### ***Identifying what information should be collected, and how it should be managed***

<sup>76</sup> OECD 2012.

<sup>77</sup> This is examined in more detail in Chapter 3.

### Case Study 2.6: Judicial Education in Uganda

Many judges in Uganda attended law school or took office before environmental laws were enacted. When environmental cases started to be filed, some judges were unfamiliar with the new laws and most did not have copies of the relevant statutes. Many cases languished without being heard.

A national judicial education program—led by Green Advocates, a Ugandan nongovernmental organization, with support from the Environmental Law Institute and UN Environment—allowed judges to become familiar with this new area of law. Judges from other countries as well as subject matter experts taught the courses. The peer-to-peer exchange, as well as giving judges copies of Ugandan laws and decisions from sister courts, helped to significantly increase the number of environmental cases heard and decided in Uganda.

When the course started in 2001, each judge received a binder of cases. There was only one Ugandan case (which was included); so, most of the binder included cases from Kenya, Tanzania, India, Philippines, the United States, and other jurisdictions. Over five years, every judge and magistrate in Uganda was trained, and as judges became more familiar with Ugandan statutes and case law from other jurisdictions, they started deciding cases. By the end of the training, there were two binders: the original binder of cases from other jurisdictions, and a new binder of Ugandan environmental cases.

Thus, providing training and education empowered staff and institutions to enact and expand environmental rule of law.

**and used, is itself a significant action.** The gathering of information about a substance, practice, or resource shines light on the area and invites scrutiny by regulators and stakeholders. Information collection, however, requires the commitment of resources, particularly if data need be collected over significant time spans to be meaningful. In contrast, failing to collect information may mean certain risks or impacts will go unnoticed by institutions, perhaps endangering public well-being. Information collection and management should therefore be consistent with an agency's primary goals and should directly support the agency's priorities.

Similarly, **determining which institution (or institutions) should collect, manage, and use information is an important decision.** The

skills and reliability of the institution tasked with information collection and management should match the task put before it: the mining ministry may have little expertise in collecting ambient air samples outside of mines, while the environment ministry may have air monitoring expertise, even if it has not yet done so for mines. At other times, regulated entities may be tasked with submitting data, which can raise concerns about trade secrets and information reliability.

Some countries have opted to centralize environmental data collection and management in one independent agency or in one office within an agency, as with the Italian Ministry of Environment's reliance on

data from the Institute for Environmental Protection and Research.<sup>78</sup>

This allows the agencies and offices that use the information to be free from the duties associated with the information collection and management, and it centralizes expertise regarding information collection and management. Other countries have opted to have front-line offices that use data also be responsible for collecting and maintaining the information. This is often because specific expertise regarding the resource or industry is housed in the office. For example, the United States Environmental Protection Agency collects its own chemical testing data to aid in its regulation of the Toxic Substances Control Act.<sup>79</sup>

### 2.5.1 Information Collection

Often ***the very act of collecting information about an environmental issue can change behavior***. When regulators have required those who emit or dispose of pollutants to report their emissions and disposal data, dramatic decreases in emissions and disposals have been recorded. For example, when the Monsanto Corporation first reported, as required under the U.S. Emergency Planning and Community Right-to-Know Act, that its plants released more than 370 million pounds (more than 165 million kg) of toxic substances to the environment, the head of Monsanto expressed surprise and pledged dramatic cuts to emissions.<sup>80</sup> Information collection also helps to identify risks that should be addressed and verify whether environmental conditions are improving.

Institutions rely on information that may be generated by the institution itself, scientific organizations, the regulated community, the

public, and other institutions. For example, many sectors in many countries self-report their compliance data to agencies—the agency itself plays no role in the gathering of data (although it may check self-reporting and prosecute falsified data where found). In other instances, a wildlife management agency (for example) may rely on wildlife studies conducted by university researchers or on information gathered informally by wildlife specialists, local communities, or tourism operators. Increasingly, agencies are finding ways to use data collected by citizens—often referred to as citizen science—to make decisions and identify violations.<sup>81</sup>

***It is vital to have confidence in the quality of the data being relied upon by an agency.***

Clear data quality guidelines can improve the collection and generation of useful, sound data sets that meet minimum quality assurance standards. These guidelines allow other stakeholders to understand how the data were collected to ensure reliability and suitability of the data to the purpose for which they are to be used.

For example, the Canadian province of Alberta required certain regulated entities to submit greenhouse gas emission compliance data that were verified by third-party accountants or engineers.<sup>82</sup> Upon review of the submissions, provincial authorities identified numerous inconsistencies in interpreting verification requirements between firms and across disciplines. Greenhouse gas emissions calculation methods varied widely across industries, and accountants tended to use different methods than engineers. To address this, Alberta authorities convened a task force of stakeholders to produce a technical guidance that set forth common standards for auditing and disclosures. This allowed the reporting community and

78 European Environment Agency 2017.

79 USEPA 2018.

80 Percival et al. 1992.

81 Dickinson, Zuckerberg, and Bonter 2010.

82 Kuhn and Schuh 2013.

auditing professionals the flexibility needed while providing sufficient uniformity to assure comparability of data across sectors.

Just as standardized data collection procedures are critical, so are uniform data reporting forms, formats, and methods. If data are reported in a variety of formats and units, then it is difficult for other institutions and the public to access and assess the information. The data may not yield useful comparisons to regulatory standards, between facilities, and across sectors.

**Standardization of reporting formats greatly increases institutional efficiency** by avoiding the need for tedious translation across systems or conversion into another format, such as moving data from spreadsheets to databases or from paper documents to an electronic database.

**Because information use is the basis of many environmental decisions, it is important that the information be verifiable and that the manner in which it was collected be carefully documented.** This allows stakeholders to have confidence in the data, or challenge potential inaccuracies, and for reviewing courts to ensure that the data are sufficient to meet courts' evidentiary standards. Courts may require a showing that the information is reliable and has been managed so as to retain its accuracy—that it was not subject to manipulation or alteration.

Many countries require use of specific data collection and reporting protocols by agencies and the regulated community. Countries also provide individual criminal penalties for submission of false or inaccurate information (perjury, fraud, and misrepresentation) in order to ensure data integrity.<sup>83</sup> In order to be enforceable, the reporting protocols must be sufficiently detailed that the regulated community has clarity on how to comply.

Agencies increasingly rely on electronic reporting of data to avoid many of the pitfalls outlined above. Some agencies request data be submitted using a specific electronic format, such as an Excel spreadsheet, while others create an online portal through which data can be submitted directly and securely to the agency. For example, after 40 years of relying on paper reports, the U.S. Environmental Protection Agency and States are moving to submission of discharge monitoring reports for water pollution via secure, online portals.<sup>84</sup> Many agencies believe that moving to electronic reporting will improve data quality and decrease the staff time and resources devoted to data management.

### 2.5.2 Information Management

Information that is used for rulemaking and enforcement purposes should be available to the public in an easy and transparent manner. **If information is not readily available, it can undercut public confidence in the reliability of the government decision or action.** In addition, the laws, regulations, cases, and policy documents upon which agencies and courts rely and with which regulated entities are expected to comply must also be easily accessible. It is often difficult for stakeholders to access these documents, which undercuts the rule of law by making the law difficult to understand and to comply with. One remedy for this problem is ECOLEX, discussed in Case Study 2.7. Another example is InforMEA, an integrated information system hosted by UN Environment that allows parties and the public to access harmonized information about multilateral environmental agreements.<sup>85</sup>

Although environmental information should be accessible, environmental information that is confidential or privileged has to be protected.

83 Reitze and Hoffman 1995.

84 U.S. Environmental Protection Agency 2015.

85 See <https://www.informeaa.org/>.

Environmental agencies have systems in place to protect information that should not be disclosed to the public. Some environmental information may be exempt from disclosure because it contains information about vital public infrastructure, such as water supply systems, contains sensitive personally identifiable information, or contains information deemed confidential business information under relevant law. Procedures to ensure that critical information is not disclosed can enhance regulated community willingness to submit business information that may contain trade secrets. Many countries interpret these exceptions narrowly to avoid overly broad claims of confidentiality.<sup>86</sup>

A clear set of criteria can provide a consistent framework for determining whether information is public information, confidential business information, or otherwise protected by law from disclosure. Freedom of information laws often contain detailed criteria and procedures for claiming information as confidential and for challenging such claims, including administrative mechanisms to review such claims. In general, information is presumed to be publicly available unless explicitly protected from disclosure. For example, such laws generally treat information on pollution levels and releases as subject to public disclosure, even if release of this information might embarrass companies or government officials. To be exempted from disclosure requirements, business and trade information usually must be shown to have independent economic value because it is secret and not discernable through other means.

Information management that is coordinated across agencies and other institutions helps to avoid duplicative collection of information. Governments can enact policies to require inter-agency sharing of information to

maximize coordination and efficiencies and to help avoid bureaucratic infighting over information. In addition, coordination of the technical specifications of information management systems across agencies eases information management within and across institutions. Some options are adopting consistent information management platforms (such as the same software system) and agreeing to a common set of identifiers (such as using one identification number for the same facility across agencies and media). If each agency manages information using proprietary systems, it can be difficult or impossible to share, integrate, or correlate data. For instance, if facilities or companies are identified using a variety of different names or addresses, agencies may not notice that a particular facility or company is repeatedly violating the laws managed by different agencies.

The use of inter-agency working groups, ministry-level policies, or cross-ministry institutions may help ensure efficient data management. For example, at the request of G7+ (a group of conflict-affected countries), UN Environment, the World Bank, and GRID-Geneva teamed to create Map-X, Mapping and Assessing the Performance of Extractive Industries.<sup>87</sup> This geospatial data platform provides open and free access to financial, environmental, and social information about timber, mining, and agricultural concessions on a single open-source platform. The maps show multiple layers of environmental, social, and economic data, including areas of environmental degradation, natural resource concessions, and conflict. The geographic location of protected areas and indigenous lands can be shown, for example, to highlight places where natural resource concessions might be problematic. The system allows both in-depth examination of a single concession as well as cross-sectoral

86 UNECE 2014.

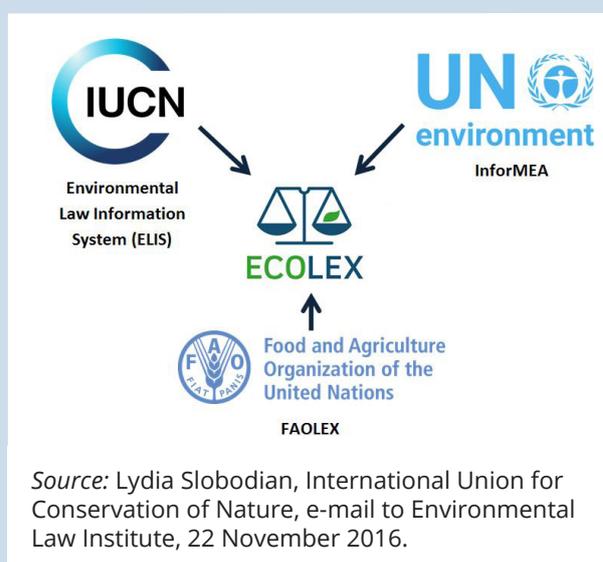
87 See <https://www.mapx.io/>.

### Case Study 2.7: ECOLEX

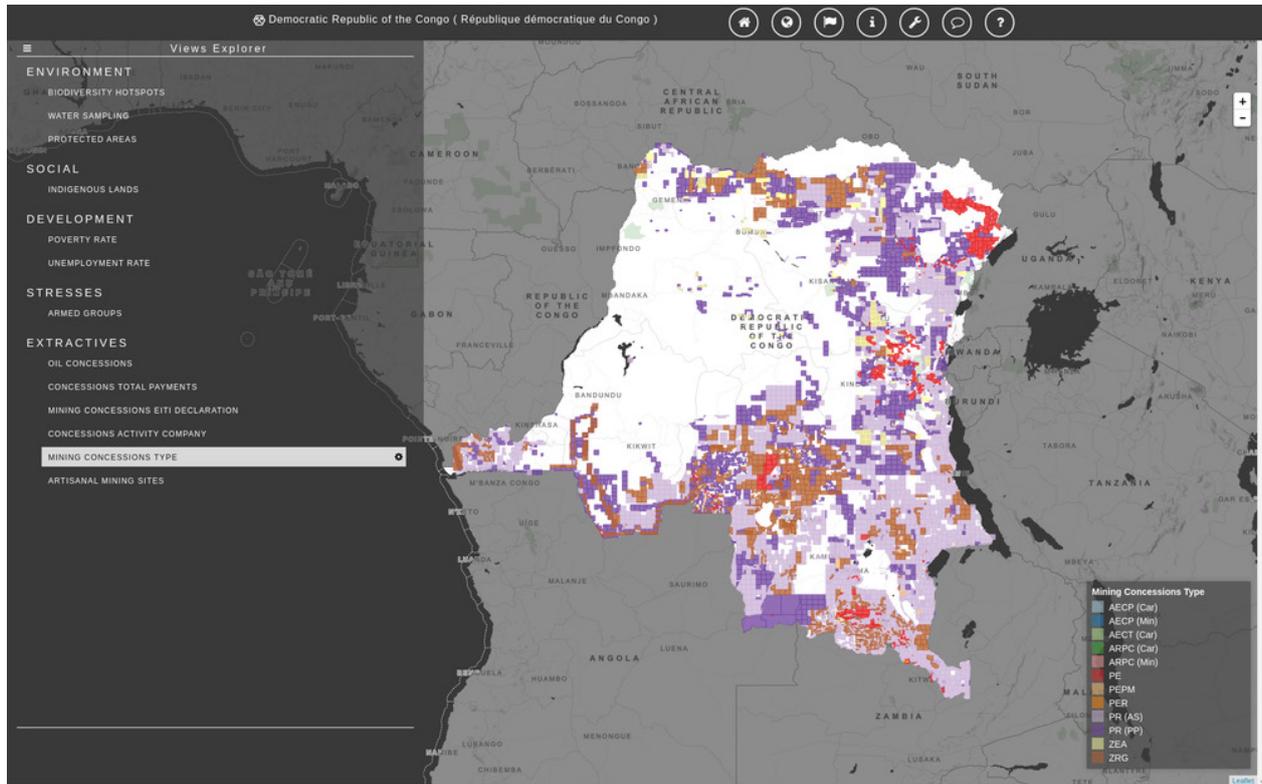
ECOLEX ([www.ecolex.org](http://www.ecolex.org)) is an information service on environmental law, operated jointly by the UN Food and Agriculture Organization, the International Union for the Conservation of Nature, and UN Environment. Its purpose is to build capacity worldwide by providing a comprehensive global source of information on environmental law free of charge to everyone. It was created in response to two issues: first, there is limited knowledge about the existence and location of environmental laws; and second, even when this information is available, access is limited. This is particularly the case in developing countries and countries with economies in transition, where government officials, practitioners, environmental managers, non-profit institutions, and academia lack easy access to the legal information they need for developing the necessary legal tools to promote environmental management.

The International Union for Conservation of Nature's Environmental Law Centre created a pioneering, comprehensive information system of environmental law in the 1960s, which was showcased for the first time at the United Nations Conference on the Human Environment in Stockholm, Sweden, in 1972. This system evolved into a large set of references to treaties, national legislation, soft law, and legal literature linked to documents collected by the Environmental Law Centre. In 2001, the International Union for the Conservation of Nature, UN Environment, and the UN Food and Agriculture Organization signed a partnership Agreement to integrate their data. The result was ECOLEX. ECOLEX was designed to be the most comprehensive global source of information on national and international environmental and natural resources law. Today, it includes materials from over 180 countries, including 2,100 multilateral and bilateral environmental treaties, 113,000 national legal instruments, 1,500 court decisions, 10,000 decisions by treaty governing bodies, and 37,000 bibliographic references to the law and policy literature. ECOLEX makes environmental legal information accessible to the public, supporting the role of lawyers and other relevant stakeholders in strengthening environmental rule of law.

The need for such services is illustrated in the constantly growing number and variety of requests for data and for assistance in locating information on specific environmental law topics, which the three partners receive from governments, academia, nongovernmental organizations, companies, and members of the public. ECOLEX performs a critical function by providing ready access to environmental legal documents and informing the public of their contents.



**Figure 2.9:** Sample of MAP-X for the Democratic Republic of the Congo



Source: <https://www.mapx.org/>.

and cross-pollutant comparisons. Having a unified platform also reduces the chance that one ministry will grant a concession that overlaps with a concession granted by another ministry. As illustrated in Figure 2.9, this project is being piloted in the Democratic Republic of the Congo and requires significant standardization to ensure the accuracy, verification, and interoperability of data.

### 2.5.3 Information Use

Information is used to support environmental rule of law in numerous ways: to determine what risks to regulate and where to focus enforcement resources; to verify compliance

status; and to prove noncompliance or harm in court. Increasingly, agencies rely upon the availability of large amounts of data to search for violations and evidence of environmental harm that was not possible before, such as by analyzing data from many different public sources to identify noncompliance. In addition, new sources of data are available, such as satellite data and data submitted by citizens using their mobile phone cameras and sensing devices. Increasingly, data analytics are used to prioritize environmental compliance and enforcement efforts, informing agency decisions regarding which facilities to inspect.<sup>88</sup>

<sup>88</sup> Paddock and Wentz 2014.

It is essential to transparently document the information relied upon and how it was relied upon. This facilitates public review and comment upon the information use and bolsters confidence in institutional decisions. If an institution deems information not reliable or not suitable for use, it is also important to document these decisions so that they can be understood by stakeholders and defended if challenged.

Perhaps equally as important as using information is identifying the existence of information gaps. One of the main distinctions of environmental rule of law from other areas of law is the need to make decisions to protect human health and the environment in the face of significant uncertainty and data gaps. Instead of being paralyzed into inaction, careful documentation of the state of knowledge and uncertainties allows the regulated community, stakeholders, and other institutions to more fully understand why certain decisions were made. Identifying these gaps can also spur data generation. Thus, **identifying information gaps and requesting additional information can be important tools to help manage uncertainty.**

## 2.6 Investigation and Enforcement

Fair and consistent enforcement of law acts as a deterrent, builds confidence in institutions, and provides a level playing field for all. **By creating a clear expectation of compliance as well as swift and just consequences for noncompliance, environmental rule of law can take root and protect people from the adverse impacts of violations of environmental law.** Creating these expectations and consequences also has an important leveling effect within sectors by ensuring that noncomplying regulated entities

do not gain a competitive advantage over those entities that do comply.

Despite the proliferation of environmental laws worldwide, many countries struggle to effectively monitor, investigate, and enforce them. Sometimes the laws themselves do not provide sufficient direction, authority, or mechanisms for implementation. There is often a lack of resources, political will, or capacity to investigate and enforce.<sup>89</sup> There are three key approaches that countries can take to cope with these challenges and improve environmental investigation and



Young diamond miners in Sierra Leone

89 INECE 2009, 8.

enforcement: (1) embedding investigative and enforcement programs within an overall culture of compliance; (2) tailoring investigation and enforcement programs to optimize use of the available resources and institutions; and (3) using enforcement and inspection policies.

### 2.6.1 A Culture of Compliance

Creating a culture of compliance with environmental regulations is a significant step toward creating effective environmental rule of law. **Compliance becomes part of the culture when social values and business practices incorporate environmental standards as part of the everyday way of doing business.** As discussed below, creating such a culture starts with a robust enforcement and compliance program that deters and punishes noncompliance and then becomes a system of practices by government and the regulated community that help to ensure environmental standards will be met, or exceeded, in the ordinary course of business. Practices that spur the formation of such a culture include broad understanding of the applicable environmental requirements, clear policies relating to enforcement, incorporation by the regulated community of environmental requirements into planning and operations, and common expectations across government, business, and the public that laws and regulations will be respected by all.

Data from researchers and experience around the world with enforcing laws both suggest that compliance is often contingent on a belief that the regulator will detect and punish violations using penalties that outweigh any benefits gained from noncompliance. Compliance is also contingent on a belief that peers will comply or else be similarly punished. For example, a survey of environmental compliance officials at

233 firms in the United States found that 89 percent could identify some enforcement actions against other firms, and 63 percent reported having taken some compliance-related actions in response to learning about such cases.<sup>90</sup>

The researchers concluded that “[d]eterrence signals both reassure ‘good apples’ that free-riders will be punished and reminds them to make sure that they are responsible corporate citizens with no need to fear the social and economic costs that can be triggered by serious violations.”<sup>91</sup>

Inspection and enforcement actions consistently produce improved environmental performance at not just the targeted facility (specific deterrence), but can also produce significant spillover effects on other firms (general deterrence).<sup>92</sup>

For example, a study of air emissions from 521 U.S. manufacturing plants showed that compliance increased in surrounding facilities after a single plant inspection.<sup>93</sup> Case Study 2.8 shows how undertaking high-profile inspection and enforcement activities can greatly increase their impact.

If achievement of environmental standards depends solely upon enforcement programs that catch and punish noncompliance, then it might be said that a culture of **noncompliance** exists: the norm for stakeholders is to not comply in the hope that they will not be caught. This norm may exist because the ramifications of being caught are insignificant or because stakeholders do not know what is required of them. By contrast, a culture of compliance takes root once stakeholders have incorporated environmental standards and goals into their ways of operating and of doing

90 Thornton, Gunningham, and Kagan 2005.

91 Ibid., 283.

92 Silberman 2000; Gray and Shimshack 2011; Shimshack 2007.

93 Gray and Shimshack 2011.

### Case Study 2.8: High-Profile Inspection Efforts in Viet Nam

Viet Nam, facing challenges in compliance with its Law on Environmental Protection, took a different approach to dramatically raise the profile of its environmental enforcement program. In 1997, Viet Nam's Ministry of Science, Technology, and Environment undertook a large-scale inspection of over 9,000 facilities across 61 provinces and cities and ultimately found that about half of them were out of compliance. The Government of Viet Nam reports that the massive ramp-up of inspections raised awareness, resulting in increased reporting on environmental impacts, installation and construction of treatment facilities, and requests for regulatory guidance.

Thus, undertaking efforts that increase awareness of inspections and enforcement can result in greater compliance efforts by the regulated community.

business. When compliance is a routine matter, companies will consider what environmental impacts may occur and what regulations might apply when designing any new process or considering changes to existing operations that might affect the environment instead of waiting for an environmental inspector to arrive or a citizen to complain.

Governments can help foster a culture of compliance to take root within a sector or country by making clear what is expected of the regulated community, swiftly and publicly responding to noncompliance, and modeling responsible behavior itself. In particular, the following steps can help build such a culture:

- publicizing rules and regulations that apply to sectors and to the regulated community;
- setting clear policies that explain the penalties that will apply to any violations and how they will be calculated;
- applying a strategic focus on certain sectors using compliance assistance and detailed inspections and enforcement to help compliance take root uniformly across the sector;
- engaging in clear communications with stakeholders and the regulated community about the risks of noncompliance and publicizing any enforcement actions taken;
- using metrics to demonstrate progress toward a culture of compliance; and
- fighting corruption wherever it appears.



As Viet Nam's iconic Halong Bay has witnessed increased tourist traffic, authorities have pursued an array of efforts to minimize environmental impact

Although traditional enforcement methods are a necessary baseline for building such a culture, many additional techniques have arisen that help businesses incorporate environmental standards into their operations. These techniques help ensure that rules and regulations are regularly complied with and even exceeded. They include:

- *Pollution inventories*, by which businesses identify and tally the pollutants they are emitting and then report this information publicly;
- *Publishing information on companies' environmental performance*, including innovative approaches like AKOBEN discussed in Case Study 2.9;
- Cleaner and more modern *production techniques* that meet or exceed environmental standards and that may require fewer resources, such as water and energy;
- *Environmental management systems*, such as the International Organization for Standardization 14000 standard to systematize and improve companies' environmental performance;
- *Supply chain management* to ensure that environmental standards are being met both for materials being procured and materials being produced; and
- *Negotiated agreements and government-industry partnerships* that allow business and government to agree to specific environmental goals and that may provide flexibility to businesses on how to meet regulatory requirements.<sup>94</sup>

The techniques outlined above all have in common an attempt to mainstream environmental standards and management techniques into business processes. While building a culture of compliance takes time and effort, it can greatly improve environmental performance and reduce the amount of continuing government effort expended in enforcement.

### 2.6.2 Tailored Enforcement Solutions

**Enforcement solutions tailored to the sector and country context are more likely to succeed in establishing environmental rule of law.** Although much experience has been gained by agencies worldwide as they implement environmental law, there is no single solution for creating inspection and enforcement systems. A wide variety of factors affect what will work in the myriad circumstances around the world, such as climate, culture, economics, geography, legal systems, and legal traditions. As noted by experienced environmental enforcement officials, “[i]t is crucial ... to consider the institutional settings within any particular country studied, and good practices suggested for improving enforcement should be adapted to the particular circumstances of individual countries.”<sup>95</sup>

Countries use a wide variety of enforcement systems, with some centralized, others decentralized, and yet others sharing responsibilities between national and subnational authorities. Some countries—such as Sweden and Switzerland—have a decentralized system of environmental enforcement that relies on local and provincial institutions to take the lead in enforcement, with general coordination and priority setting coming from the national

94 Keene 1999.

95 UNEP 2014, 7.

environmental ministries.<sup>96</sup> Others—such as Singapore and France—put central control of environmental enforcement at the national level. And still others have a system that provides for concurrent authority to enforce environmental laws at both the national and subnational levels; this is particularly common in federal countries such as Mexico, Brazil, and India.

Enforcement systems are also differentiated by whether enforcement is conducted from a stand-alone office or is combined with programmatic actions of the same agency. Some agencies combine enforcement and regulatory development activities in the same office, while others separate regulatory development and enforcement into separate offices. While it can be instructive to learn from the practices and experiences of other nations, each country's solution ultimately depends on its own institutions, capacity, culture, and objectives.

Innovative methods of compliance and enforcement can be used to create tailored enforcement systems, often at a relatively low cost. Next generation compliance systems using new technological tools—such as satellite data and remote sensing, electronic reporting, and data analytics—allow regulators to detect potential violations more readily.<sup>97</sup> Innovative reporting and ranking systems require companies to self-report monitoring and compliance data and then give companies ratings in terms of their environmental performance, as illustrated in Case Study 2.9. These practices and others are detailed in helpful case studies and facilitated peer-to-peer discussions of best practices at international organizations such as the International Network for Environmental Compliance and Enforcement and UN Environment.

96 OECD 2018.

97 Paddock and Wentz 2014; Hindin et al. 2016; Baptista 2016.

### 2.6.3 Inspection and Enforcement Policies

Adopting and publicizing clear and focused inspection and enforcement policies help direct scarce enforcement resources. They also help educate the regulated community and public about enforcement priorities, thereby encouraging compliance and building legitimacy. Inspection policies that clearly identify how inspections are to be conducted, including specification of available methods of investigation and how inspection results are to be documented, are particularly helpful. Enforcement policies may outline how authorities are focusing their resources, such as using risk-based enforcement to target those facilities that pose the highest risk to public health and the environment and choosing to focus resources on a few high-priority sectors each year. ***Policies that spell out the objectives and methods of an enforcement strategy help focus staff and the regulated community on the most important issues.***

Inspection and enforcement policies provide standard protocols for inspectors and investigators to follow nationally and across sectors. They are particularly useful when inspections and enforcement are decentralized as they help to ensure consistent priorities and approaches across a country or sector. They also help to instruct the regulated community on how to demonstrate compliance. The World Bank has reported that many national regulatory bodies fail to publish inspection criteria and enforcement guidance, meaning businesses lack clarity on what rules they should be following.<sup>98</sup>

For example, Malaysia adopted standard operating procedures applicable to all enforcement officers. These procedures are comprehensive and cover: development of

98 World Bank 2011.

annual inspection programs; prioritization of sectors to be the focus of enforcement efforts based on previous compliance and non-compliance; procedures to be followed during inspection and investigation; methods for sampling and collecting evidence; guidance on recording statements; procedures for issuing detention orders and prohibition orders to stop specific pollution; and preparation of documents for referring matters to the Attorney General for prosecution.<sup>99</sup>

As the Malaysia experience illustrates, focusing enforcement efforts on particular sectors is a common strategy. Using this approach, enforcement agencies announce that two or three sectors will receive heightened enforcement scrutiny in the coming year. This allows inspectors to focus their resources instead of trying to cover all sectors. In addition, the added attention to a sector can cause companies to refocus attention on compliance. For example, every three years the U.S. Environmental Protection Agency announces its National Enforcement Initiatives to focus resources and attention on several areas of significant noncompliance where federal efforts may help to change behavior.<sup>100</sup>

## 2.7 Environmental Auditing and Institutional Review Mechanisms

Environmental auditing provides an independent third-party review of the environmental performance of an industrial facility, an agency, and even an entire government program. Auditing of companies and facilities can identify noncompliance and motivate efforts to return to compliance. Auditing of agencies and programs can

deter corruption and misconduct, identify institutional shortcomings, critically analyze government operations and programs, and evaluate the effectiveness of regulatory approaches to environmental problems.

Many countries seek to improve compliance by **encouraging environmental management or compliance audits by the regulated community**. These audits are usually conducted by an independent third-party auditor hired by a company to review a company's or a facility's environmental management systems and compliance with laws and regulations. This can help the company to proactively identify and correct shortcomings in its environmental compliance program.

Some countries have policies that encourage companies to self-report the environmental audit findings; in return, companies receive reduced or deferred penalties provided they come into compliance. Under Mexico's voluntary Environmental Auditing Program, for example, organizations are voluntarily evaluated by independent auditors for compliance with environmental laws and regulations.<sup>101</sup>

Organizations agree to correct any violations by a certain date in exchange for a commitment by the Mexican Attorney General for Environmental Protection not to take enforcement action until after that date. If the organization meets the compliance requirements, it receives certification as a Clean Industry; if it goes beyond the requirements to achieve certain pollution prevention and eco-efficiency guidelines, then it receives a certification of Environmental Excellence.

Government agencies and programs themselves also strongly benefit from audits. There are over 193 national auditing

<sup>99</sup> UNEP 2014, 7.  
<sup>100</sup> USEPA 2018.

<sup>101</sup> Blackman et al. 2009; INECE 2015.

### Case Study 2.9: The Power of Information in Ghana

The AKOBEN program is an environmental performance rating and disclosure initiative of the Ghana Environmental Protection Agency. Under the AKOBEN initiative, the environmental performance of the 16 largest mining and 100 largest manufacturing operations is assessed using a five-color rating scheme that indicates environmental performance ranging from excellent to poor. These ratings are performed by the government and annually disclosed to the public and the general media, and they aim to strengthen public awareness and participation.

AKOBEN ratings are derived by analyzing more than one hundred performance indicators that include quantitative data as well as qualitative and visual information. These ratings measure the environmental performance of companies based on how well their day-to-day operations match their compliance requirements.

The Ghana Environmental Protection Agency and companies also assess community complaints. Companies can address community complaints and are required to preserve a comprehensive record of the complaints and responses. The Agency can verify these complaints by conducting field visits, holding discussions with companies and communities, and collecting samples for technical review and analysis. The Agency also collects data for the social responsibility evaluation by reviewing a company's social responsibility policy, reviewing it for creating a checklist of commitments and recommended activities to compare against what the company has actually done.

Company executives observe that the ratings system has improved company performance, while some nongovernmental organizations complain that few companies are ranked highly and that the results are not publicized adequately.

Limited evidence suggests some improvement in environmental performance by participating companies.

Rating Level	Performance	Implications
<b>RED</b>	<b>POOR</b>	Serious Risks
<b>ORANGE</b>	<b>UNSATISFACTORY</b>	Not in compliance
<b>BLUE</b>	<b>GOOD</b>	In Compliance
<b>GREEN</b>	<b>VERY GOOD</b>	Applies Best Practices
<b>GOLD</b>	<b>EXCELLENT</b>	Committed to Social Performance

agencies—often called Auditors General or Courts of Accounts and generally referred to as supreme audit institutions—that perform financial and other audits to help governments and stakeholders gauge both financial and substantive performance of institutions and programs. These organizations, sometimes referred to as institutional review mechanisms, usually take one of three forms:

- *Napoleonic*, used in many Latin American countries as well as France, Italy, Portugal, and Spain, in which the court of accounts sits in the judicial branch and reviews government compliance with laws and regulations as well as ensuring that public funds are spent appropriately;

- *Westminster*, predominant in Commonwealth countries, in which the office of auditor general is an independent agency that reports to the legislature and issues periodic reports on government performance; and
- *Board system*, widely used in Asia, which is also independent and analyzes government spending and reports to the legislature.

Auditing is often thought of as an examination of the financial aspects of government programs and institutions. This is a critical function of auditing institutions, particularly as financial audits help identify corruption and waste of government resources. With respect to environmental rule of law, performance auditing is also critically important. Performance auditing is a specific form of auditing that reviews the economy, efficiency, and effectiveness of the implementation of laws and regulatory programs and seeks to determine whether that implementation is meeting the ultimate statutory goals. Environmental performance audits usually examine one or more of the following aspects of governmental environmental performance:

- performance of environmental programs;
- impacts of other government programs on the environment;
- effectiveness of environmental management systems and environmental reporting;
- merit of proposed environmental policies and programs; and
- performance of government laws and regulations in addressing cross-cutting environmental issues.<sup>102</sup>



Performance audits can be targeted (such as examining the effectiveness of a single regulatory program) or broad (such as examining how to integrate climate resilience measures across the government). For example, Colombia's audit agency found that the government's system of charging companies for discharging effluent to waterways was ineffective.<sup>103</sup> It found that discharge data often did not match the amount charged for the discharge and did not discourage water pollution. The agency recommended better data collection and more water quality sampling to improve the program. Similarly, the Lesotho supreme auditing agency examined the Department of Soil and Water Conservation's soil erosion efforts and found, in part, that public information campaigns were airing at times most citizens were not watching or listening to TV or radio and that more outreach needed to be done for communities without electricity, and therefore without access to TV and radio.<sup>104</sup> Case Study 2.10 shows how **performance auditing, while difficult, can yield important insights across institutions.**

Performance audits can examine domestic implementation of international agreements

102 INTOSAI 2016, 10.

103 INTOSAI 2016.

104 Ibid.

as well. UN Environment and the International Organization of Supreme Audit Institutions have prepared extensive guidance on auditing government adherence to and implementation of multilateral environmental agreements.<sup>105</sup> In addition to examining whether a government has adopted implementing legislation and regulations and the effectiveness of such efforts, the guidance notes that multilateral environmental agreements are an important source of criteria to use in environmental auditing as they provide agreed-upon benchmarks and good practices for environmental governance.

It is critical that audits be done by independent authorities, either within or external to institutions that implement government programs. ***Independence of the auditor and auditing institution help to assure reliability and confidence in the audit results.*** In addition, auditing institutions need adequate capacity, resources, and political support to achieve their missions, similar to the needs for environmental institutions discussed in Section 2.4 above.

## 2.8 Leadership

Good leaders create better environmental institutions by directing and inspiring action, building morale, and modeling compliance with law, transparency, and accountability so that these values flow through an organization. ***Leaders take the intent and directives of environmental law and translate them into action*** by envisioning and setting a direction to be followed, giving guidance and support to staff, coordinating among staff to increase productivity, and building team spirit within an organization.

Leaders exist throughout agencies, across sectors, and throughout society. Leaders can

be managers within companies who nurture a culture of compliance by establishing policies and holding staff accountable for results. Leaders can be agency staff who identify regulatory overlap or underlap to supervisors and help guide regulatory programs to better results. And leaders can be community members who speak up when seeing environmental harm and who seek justice.

Leadership means acting directly to implement environmental rule of law or creating the conditions under which environmental rule of law can be implemented in a meaningful and efficient manner. Leaders enunciate a vision that inspires others toward a common goal and then reinforce that vision by acting with integrity toward achieving that goal—as former UN Secretary-General U Thant did with his vision of “One World”.<sup>106</sup> Leaders like Goldman Prize winner Zuzana Čaputová see an ongoing threat and use environmental law to bring justice to their community: Ms. Čaputová saw a landfill affecting local public health in Slovakia and mobilized local institutions to close down the landfill.<sup>107</sup>

Institutions lead other institutions, just as people lead other people. The way an environmental agency conducts its business sends clear messages to the regulated community and other constituencies about the agency’s expectations for their behavior. Thus, while independent auditing and review bodies are essential, the strongest force for institutional integrity comes when institutional leaders comply with the law and adhere to the highest ethical standards.<sup>108</sup>

This section examines three aspects of leadership critical to achieving environmental rule of law: (1) political will to ensure that environmental laws apply to all, (2) leadership

<sup>106</sup> Thant 1994.

<sup>107</sup> Goldman Environmental Foundation 2017.

<sup>108</sup> Langseth et al. 1997.

<sup>105</sup> UNEP 2010.

### Case Study 2.10: Performance Auditing Suggests Key Reforms in Indonesia

The Audit Board of the Republic of Indonesia was charged with assessing the effectiveness of water resources management activities for the Citarum River. From 2009 to 2012, the Audit Board met with a variety of agencies, experts, and stakeholders to assess the river basin's water management. The Audit Board used advanced technologies, including geographic information systems and water sampling, to assess land use and land cover and to identify likely sources of water pollution.

In completing the performance audit, the Audit Board encountered several difficulties, notably grappling with the diversity of institutions involved in the river's management, the complex roles these institutions played in water management, and the difficulty of synchronizing the wide variety of regulations that applied to river management.<sup>a</sup> After many consultations and convening meetings with the diverse set of authorities and stakeholders, the agency recommended that the national government implement new regulations already authorized under existing legislation to better address water quality and undertake planning to address domestic sewage treatment and disposal, particularly in urban areas. The auditing agency's independence from existing institutions and its ability to undertake a broad review of the river's management allowed it to make comprehensive recommendations, free from existing institutional politics or priorities.

a. ASOSAI Working Group on Environmental Auditing n.d.

in fighting corruption, and (3) management techniques to inspire good performance.

#### 2.8.1 Political Will

Environmental rule of law takes root when leaders demonstrate clear and firm political will to implement environmental laws, even in the face of opposition and disagreement. Political will means the firm commitment to implement a policy, especially one that is not immediately popular. Enacting environmental legislation can be difficult and can require many compromises to agree to a final law in the legislature. But the real challenge arises when these laws are implemented through regulations, policies, and actions that

directly affect stakeholders' livelihoods, lands, properties, and profits. ***Often environmental rule of law falters at this critical juncture because of a lack of political will to stand behind implementation of the law through clear regulations and policies that are enforced equitably and consistently.***

A growing body of case studies and quantitative analyses highlights the importance of leadership in environmental policy and governance. The importance of leadership is supported by many large-N studies which find that the presence of a leader has a high to moderate or mixed positive influence on environmental

governance outcomes.<sup>109</sup> Correspondingly, absence of leadership has been connected to ineffective management outcomes,<sup>110</sup> as well as inertia in addressing new problems.<sup>111</sup> Political will is closely related to leadership, although many factors can influence the political will of a particular leader, just as political will is but one of many factors influencing governance outcomes.<sup>112</sup>

Fundamentally, though, it must be recognized that laws do not enforce themselves; people enforce laws. As noted in Chapter 1, there are many reasons that people may not comply with a law, and reasons that governments may not enforce a law. Environmental rule of law thus depends on leadership and political will.

Political will requires vision as well as courage. In the early 1970s, political leaders in the U.S. Senate recognized that industrial and motor vehicle pollution were unsustainable and were causing increasing levels of public discontent. They worked across political parties and with the executive branch to create a system of environmental laws that became a model for modern environmental law.<sup>113</sup> Their vision of a cleaner environment coupled with a commitment to finding a system that would work despite opposition and several missteps along the way led to dramatic improvement in environmental conditions in the United States and widespread public support for environmental regulation.

More recently, then-President Ellen Johnson Sirleaf of Liberia repeatedly showed her political will in reforming forestry governance. Under Charles Taylor, timber had helped finance civil war in Liberia; the UN Security Council imposed a ban on Liberian timber in an effort to end the conflict, and sustained

the ban until the country had reformed the laws and institutions governing forestry.<sup>114</sup> Following her election, President Johnson Sirleaf instituted a code of conduct for public servants, declared a no-tolerance policy towards graft, and vowed to be transparent about her own finances. She cancelled all of the existing timber concessions (a review had shown that not a single concession was legal) and pushed through the National Forestry Reform Law and implementing regulations. The Security Council lifted the ban in 2006.

President Johnson Sirleaf continued to exert her political will to fight corruption in the forestry sector in subsequent years by concluding a Voluntary Partnership Agreement with the European Union to ensure that all logs, timber, and timber products exported were legal; adopting a regulatory and institutional infrastructure to ensure timber legality; and cancelling private use permits that had been illegally granted.<sup>115</sup> Notwithstanding the vested interests (domestic and international), the limited institutional resources, and the many competing priorities facing her as she led the rebuilding of her country after a brutal civil war, President Johnson Sirleaf showed great resolve to ensure that Liberia's forestry sector was governed and administered according to the rule of law.

The international community also plays a critical role in fostering and building political will across nations. When political pressure builds domestically that may undermine environmental initiatives, peer pressure from other countries, regional bodies, and international organizations can help reinforce the need for responsible environmental action.

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109 See, e.g., Pagdee, Kim, and Daugherty 2006; Evans et al. 2015.

110 Fabricius et al. 2007.

111 Scheffer, Westley, and Brock 2003

112 DFID 2004.

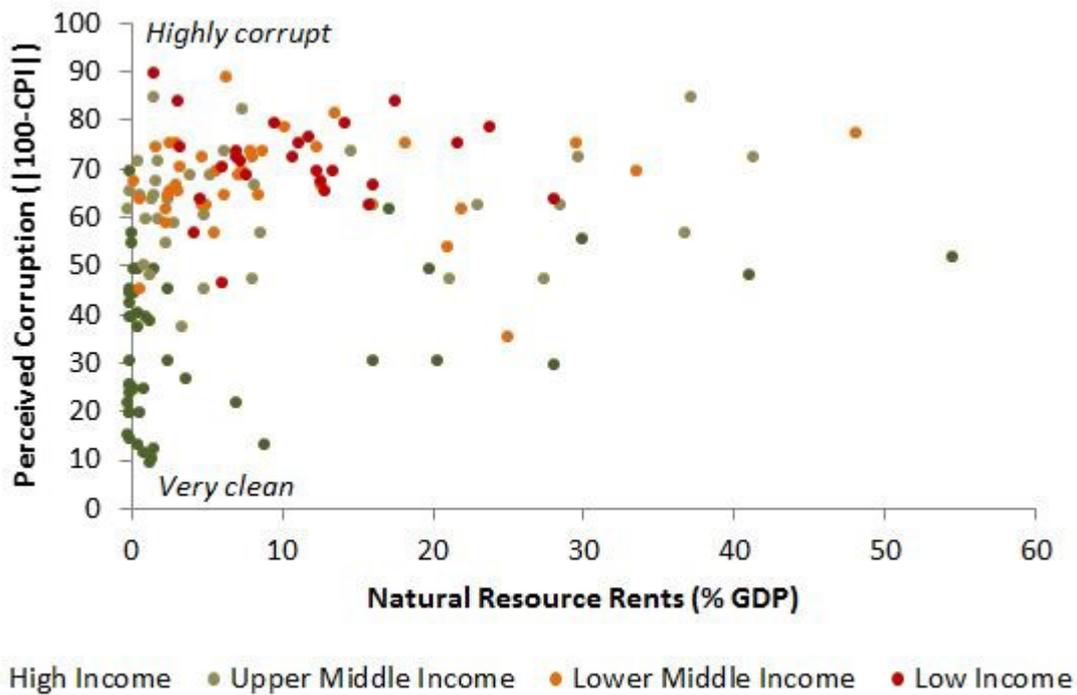
113 Lazarus 2008; Billings 2015.

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114 Altman, Nichols, and Woods 2012.

115 Ibid.; Beever 2015.

**Figure 2.10: The Corruption Perception Index and Natural Resource Rents**



Source: Environmental Law Institute, based on data from the World Bank (at <http://data.worldbank.org/indicator/NY.GDP.TOTL.RT.ZS>) and Transparency International's "Perception Corruption Index."

Note: The scale of perceived corruption is based on the Perception Corruption Index (CPI). For the purposes of this chart, Perceived Corruption =  $(|100 - \text{CPI}|)$ . The chart only includes countries with data available from both the World Bank and Corruption Perception Index databases.

### 2.8.2 Anti-Corruption Measures

Corruption is an issue in all countries, regardless of how developed their institutions are. Countries that are heavily reliant upon natural resources as a source of gross domestic product are particularly at risk from corruption because the government usually controls access to many of the resources.<sup>116</sup> Studies that have compared countries with similar social and economic conditions find

that natural resource wealth greatly increases the likelihood that corruption will be rife.<sup>117</sup> Figures 2.10 and 2.11 illustrate this correlation. Having government officials responsible for great wealth, particularly when government pay may be meager, creates conditions that are conducive to graft and corruption. In fact, some scholars believe that the connection between natural resource wealth, rent seeking, and corruption is the root cause of

<sup>116</sup> For a review of the literature, see Paltseva 2013.

<sup>117</sup> These same findings have been made when comparing resource-rich and resource-poor regions within the same country. See Paltseva 2013.



Ellen Johnson Sirleaf, the  
24th President of Liberia

the resource curse discussed in Section 2.1.2.1 above.<sup>118</sup> In addition, several scholars point to the fact that corruption directly impacts the environmental health of the public.<sup>119</sup> Rather than imposing its costs equally across society, corruption can act as a regressive tax and discourages the poor from seeking access to basic public services, such as water.<sup>120</sup>

Countries that are industrialized are also vulnerable to corruption, as the cost of compliance with environmental regulation can be significant and the pay and resources available to environmental regulators can be minimal. Accordingly, measures to fight corruption, which are discussed below, can reduce the potential for graft and bribery of

officials such as inspectors, enforcers, and permitting officers.

***Transparency and accountability are the primary tools for preventing and punishing corruption.***<sup>121</sup>

As corruption thrives when there is no oversight, transparency regarding contracting, inspections, and enforcement fosters a culture of compliance within an institution and the regulated public.<sup>122</sup> Transparency increases the chance for detecting illegal behavior. Ensuring that instances of good ethical conduct are rewarded, and instances of poor ethical conduct are publicized, can also help to end corruption. A number of studies show the impact of institutional transparency on lowering corruption, empowering local voices, increasing citizen engagement, and improving budget utilization.<sup>123</sup> Studies have even found “a clear correlation” between increased transparency and human development indicators.<sup>124</sup>

Many countries publish standards for ethical conduct that staff pledge to uphold upon taking office. For example New Zealand’s Standards of Integrity & Conduct—issued by the State Services Commissioner under the State Sector Act 1988, section 57—declares that government employees must be fair, impartial, responsible, and trustworthy. The code of conduct’s implementation guidelines suggest policies and procedures to ensure that government organizations meet expectations in each of these four areas.<sup>125</sup> Ensuring that such standards are publicized, adhered to, and enforced can build a culture resistant to corruption.<sup>126</sup>

121 For a review of the theory and emerging evidence on transparency in the management of extractive resources and their revenues, see Epremian et al. 2016.

122 Fasterling 2012.

123 Gaventa and McGee 2013.

124 de Renzio et al. 2009.

125 New Zealand State Services Commission 2009.

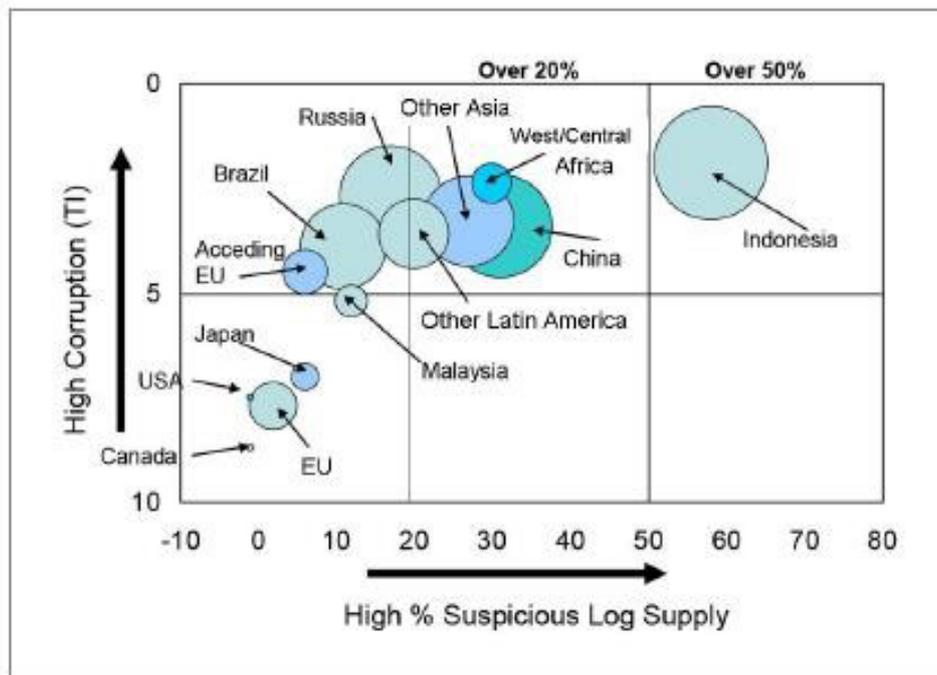
126 Whitton 2001.

118 Pendergast et al. 2011.

119 Welsch 2003; Damania 2002.

120 Kaufmann, Montoriol-Garriga, and Recanatini 2008.

**Figure 2.11:** The Relationship between Corruption and Illegal Logging



Source: Transparency International 2010.

Note: Bubble size represents the volume of suspect round-log supply, including imports.

Independent auditing and institutional review mechanisms, like those described above, also play important roles in detecting, investigating, and deterring malfeasance. The International Network of Supreme Auditing Institutions has published extensive guidance on undertaking comprehensive auditing to detect and deter corruption in the environmental context.<sup>127</sup> Whistleblower protections are also effective. Such protections ensure that those who report instances of corruption are protected from reprisals and often provide rewards to those who identify illegal behavior that is substantiated, as discussed in Chapter 4.

### 2.8.3 Pay and Personnel Management

Sound personnel management practices—ranging from timely and fair performance reviews to adequate pay—build dedicated work forces that implement environmental rule of law. **Pay is widely recognized as a determinative factor in public-sector performance and as a key component of institutional capacity-building.**<sup>128</sup>

Pay impacts motivation, work effort, recruiting, and retention rates. Although pay is not a primary determinant of corruption, evidence indicates it plays a role, particularly

127 INTOSAI 2013.

128 Stajkovic and Luthans 2003.

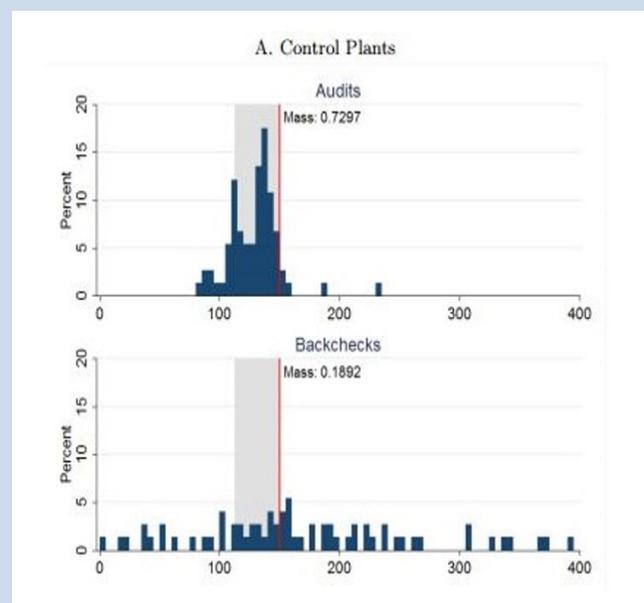
### Case Study 2.11: Structuring Pay Incentives to Reduce Misreporting of Pollution in Gujarat

In 2009 and 2010, the Gujarat Pollution Control Board in India used a third-party audit system for plants with high potential to pollute as part of its regulatory program. Under this system, auditors visited the plant and took samples three times over the course of a year, then submitted an audit report to the Pollution Control Board that could serve as the basis for regulatory action. The audit system incorporated several safeguards by requiring auditor accreditation, limiting an auditor from accepting consultancy work from the plants they audited, limiting the number of audits undertaken in the year, and granting authority to decertify auditors found to be inaccurate.

Despite these safeguards, an experiment designed to measure the effects of the auditors' pay incentives revealed striking results. In the first year of the experiment, auditors were randomly assigned to a group of plants (the "treatment group"), paid through a central account, and informed that their audits could be subject to verification. In the second year, auditors assigned to the treatment group were informed their pay for an audit would be scaled based on its accuracy. The "control group" of auditors continued to be paid by plants directly and was not told that their audit could be subject to backchecks.

The control group systematically underreported pollution readings, compared to the results as measured by backchecks. Notably, auditors in the control group systematically and incorrectly reported many pollution readings to be just below the regulatory standard (i.e., in compliance). In the treatment group, on the other hand, the changes in pay incentive structure resulted in the audits reporting results consistent with backchecks by the end of the experiment. More remarkably, the plants that were subject to increasingly accurate audit reports responded by significantly reducing their pollution emissions.<sup>a</sup> Thus, performance-based pay incentives not only improved employee performance, they improved environmental outcomes.

a. Duflo et al. 2013.



Readings for Suspended Particulate Matter SPM, mg/Nm<sup>3</sup>, Midline

Source: Duflo et al. 2013.

in petty corruption.<sup>129</sup> Evidence suggests that bribery can become endemic in countries that have undercompensated public servants.<sup>130</sup>

Performance-based pay means that compensation is tied to certain performance measures, such as the number of inspections conducted. This compensation method can provide a strong incentive to align employee motivation to performance outputs. To work successfully, the metrics used must be clear, measurable, and attributable to the employee being reviewed.

Performance-based pay has to be used with care in the context of environmental regulatory and enforcement institutions where environmental outcomes, such as reduced pollution, can be difficult to tie to the performance of a particular employee. Metrics such as number of permits issued, inspections conducted, and enforcement actions taken are often used. It is important to note, however, that these are not direct proxies for environmental outcome. As noted in Case Study 2.11, performance-based pay can create important incentives and disincentives alike. As a result, it is important to consider both quantitative metrics (such as those above) along with more qualitative considerations (such as citizen satisfaction surveys) to more completely understand performance.

Another effective management tool is the use of competitive, transparent processes for filling positions. These processes increase the likelihood that the best staff have been hired, free from favoritism and undue influences. This builds public confidence in the institution and attracts qualified staff.

Conducting performance reviews at least annually and providing periodic constructive feedback to staff can also be effective management tools. Staff who are

underperforming can be given clear, concrete examples of ways they can improve, while staff who are performing well can be praised and told how they are excelling. This helps ensure staff accountability and builds morale.

## 2.9 Opportunities and Recommendations

Effective institutions are essential in overcoming the implementation gap in environmental rule of law. To be effective, institutions need adequate resources, clear mandates, effective coordination, reliable data, and sound leadership.

**Many countries have environmental laws and institutions in place but have yet to realize their full potential.** Often, these laws and institutions were modeled on those in other countries, and they have not been adapted to reflect local culture, practices, and resources, or fully fleshed out to provide sufficient direction, authority, and mechanisms for implementation. Many opportunities exist to strengthen institutions to make them more effective and legitimate, thereby strengthening not only environmental rule of law, but social inclusivity, cohesion, and stability.

As an initial step, **polymakers can evaluate the current mandates and administrative structure of environmental institutions to identify regulatory overlap or underlap.**

Supreme audit institutions or other independent oversight bodies can be tasked with examining the overall effectiveness of existing efforts and with recommending ways to better tailor the country's environmental institutions to existing environmental, economic, and social priorities. Convening stakeholders from government, communities, regulated parties, and academia can yield further insights into whether the risks are being identified and prioritized appropriately

129 Mookherjee et al. 1995; Rijkeghem et al. 2001.  
130 Gorodnichenko and Peter 2007.

and whether effective means are being used. This can help policymakers better target scarce resources and engender confidence and trust from the public.

Because there is significant competition for scarce government resources, **innovative policies can increase environmental impact without increasing spending**. For example, many countries have required the regulated community to publicly disclose emissions and waste disposal data, which motivates companies to reduce environmental impacts. Other nations rank polluters based on performance criteria to spur the private sector to comply with or even exceed compliance requirements. Announcing enforcement priorities can bring public attention to areas of potential noncompliance and encourage the regulated community to take corrective action before inspectors arrive.

Leaders and staff who demonstrate integrity in managing environmental institutions **engender a culture of compliance** that can spread beyond the institution. Corruption within an institution undermines goodwill and compliance efforts. Common sense management techniques, such as adequate pay, performance reviews, and meaningful performance measures, can boost staff morale and deter corruption, which in turn can result in better environmental outcomes.

International institutions, nongovernmental organizations, and bilateral agencies build capacity, share information, and finance many domestic efforts to implement and enforce domestic environmental laws. They are often crucial partners in investigating transnational environmental crime. **The international community's efforts to coordinate, train, and provide resources are essential to fostering improved implementation of environmental rule of law.**

Although they are often viewed as mundane tasks, **investing in information collection**

**and management systems** is vital to building strong institutions. Putting in place data quality guidelines and standardized data collection systems can help streamline information collection and management, reduce burden on both the regulatory and regulated communities, and increase data reliability and accessibility.

The form of a country's environmental institutions should, over time, come to match the contours of the country's local institutions. Often this can mean looking for opportunities to **engage with customary institutions to strengthen environmental rule of law**, particularly in rural areas. Communities possess vast amounts of knowledge and have developed customs over centuries to manage natural resources. Opportunities to rely on these practices and customs can be explored to strengthen environmental outcomes and public engagement.

Effective institutions are the engines that drive environmental rule of law around the globe. This chapter has outlined principles for sound design and maintenance of institutions to help achieve optimum performance. Because each country context is unique, and because circumstances and best practices are continuously evolving, the best institutions embark on a process of constant learning and reexamination of their goals and methods to ensure they are delivering sound environmental rule of law.