Targeting Natural Resource Corruption

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The Impacts of Infrastructure Sector Corruption on Conservation

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Key takeaways

- Corruption early in the infrastructure lifecycle creates cascading negative effects and significant conservation impacts.
- Within infrastructure, the conservation impacts of grand corruption are greater than those of petty corruption.
- Anti-corruption strategies to increase integrity, transparency, and accountability can reduce these impacts but require complementary advocacy efforts and direct action.

How does infrastructure corruption influence conservation?

Infrastructure is key to national economic development strategies and provides necessary human services. However, infrastructure development and associated corruption have tremendous impacts on conservation efforts. This relationship can be overlooked due to the discrete and hidden ways corruption occurs and the fact that infrastructure sector corruption is often assessed in relation to economic inefficiencies and losses, rather than through a conservation lens. Understanding the relationship between infrastructure, corruption, and conservation facilitates the elaboration of effective anti-corruption responses and the improvement of infrastructure development and conservation outcomes.

Corrupt practices influence infrastructure throughout its lifecycle and disrupt and undermine measures that protect natural resource values. These practices reduce the social and ecological benefits that infrastructure provides and encourage unneeded or oversized projects and methods that are unnecessarily destructive to the environment. Corrupt actors, for example, may find that larger, consolidated projects are easier to profit from than smaller-scale, decentralized projects, which are less environmentally impactful (Transparency International 2008). Examples of corruption consequences for conservation are listed in Table 1.

Table 1: Examples of infrastructure corruption and potential conservation consequences

Examples of infrastructure corruption	Potential conservation consequences
» Political influence promoting an airport with low traffic demand in a high biodiversity region for the political gain of decision-makers and their agricultural industry supporters.	» Direct consequences include the unnecessary loss of natural habitat and disturbance to wildlife through increased noise and air pollution. Indirect consequences include deforestation to expand the agricultural frontier and the cutting of new roads for airport access.
» Bribing consultants for a favorable environmental impact assessment (EIA) of road feasibility in a biodiversity conservation priority area.	» Immediate impacts include deforestation, ecosystem fragmentation, and disturbance of animal migration. Long-term consequences include the loss of connectivity of natural ecosystems, mortality from road collision, and increase of land clearing.
» Collusion between officials and project implementers to circumvent environmental protections during dam construction and failing to construct a needed fish passage.	» Irreversible consequences may include the loss of fish and other aquatic species, and further impacts on the trophic chain.
» Contracting a relative to supply needed construction materials, resulting in illegally sourcing sand from protected areas.	» Immediate and long-term impacts include the destruction of ecosystem integrity of remote natural habitats (e.g., corals, seaweeds, and seagrass meadows) through erosion and the physical disturbance of benthic habitats, ecological communities, and food webs.
» Collusion between a port company and consultants to misrepresent a management plan for bilge water and other hazardous materials from the operation and washing of vessels at dock.	» A direct impact is pollution of the water body in the form of increased sedimentation and toxic materials released from bilge discharge. There is also the possibility of the increased spread of invasive exotic species, threatening marine organisms, food webs, and fish stocks.

Each phase of a project's development offers opportunities for corruption, grouped into two broad categories.

Petty corruption is smaller in scale (although generally more widespread) and consists of corrupt activities in the administration or implementation of a project—for example, low-level diversion of resources designated for infrastructure maintenance or demanding bribes from users. Petty corruption diminishes the value of projects by increasing costs or reducing service quality or access, but conservation impacts are typically indirect and difficult to identify apart from the impacts of the project itself.

Grand corruption concerns behaviors that affect the entire infrastructure development process, driving projects to be conceived and developed for private gain rather than for the collective benefit. Grand corruption influences the scope, scale, and design of a project, and conservation impacts cascade into the later lifecycle phases. The impacts can therefore be large and irreversible. Box 1 highlights three real-world examples.

Key definitions

Infrastructure: The integrated set of social, physical, and ecological components that provide services to meet human needs. Examples include transportation networks, dams, energy and communication networks, and ports.

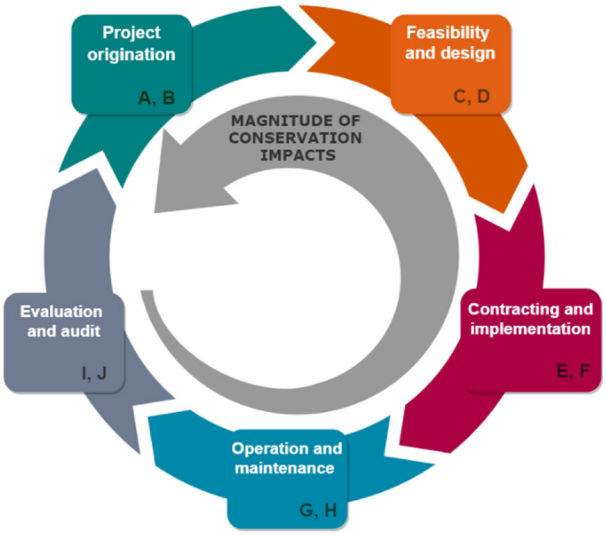
Infrastructure lifecycle: The series of stages within infrastructure-related projects, from conception and planning to design, execution, maintenance, and replacement or decommissioning. This includes the management of performance, risks, and costs throughout the process.

Corruption: The abuse of entrusted power for private gain. *Grand corruption* is the abuse of high-level power that benefits the few at the expense of the many (Transparency International). *Petty corruption* involves lesser economic value and usually relates more to public services and administrative processes that may be encountered in daily life. See further definitions here.

The infrastructure lifecycle and associated corruption risks

Examining corruption through a lifecycle analysis illuminates its connections to conservation outcomes. The infrastructure lifecycle refers to the process of infrastructure development from first conception through full implementation and operation. This lifecycle can be divided into five phases. These are depicted in Figure 1 and described below, along with examples of the types of corruption risks potentially encountered in each (drawn from Sohail and Cavil 2008 and Wells 2015). The black letters in each phase of Figure 1 correspond with the letters in the corruption risk descriptions below.

Figure 1: Infrastructure lifecycle and associated corruption risks



Box 1: Prominent Cases of Infrastructure Corruption and Conservation Impacts

The **Lesotho Highlands Water Project (LHWP)** was a multi-billion-dollar water transfer and hydropower project in Lesotho and South Africa. Multinational firms bribed the Chief Executive of the project to secure tenders, which set the stage for corruption throughout the project, including bribes and collusion to evade environmental regulations (Darroch 2007). The lack of environmental mitigation caused irreversible impacts, including erosion and the reduction of river flow. This led to reduced river ecosystem health, threats to critically endangered fish species, and impoverishment of rural communities (Darroch 2007, Transparency International 2008, and Pittock et al. 2009).

The **Southern Inter-Ocean Road Corridor (CVIS in Spanish)** was a Peruvian road prioritized under the Initiative for South American Regional Infrastructure (IIRSA). A coalition of political actors colluded to secure an accelerated schedule to avoid the social and environmental assessments required by national legislation. There was further evidence of bribes from Brazilian companies and inflated project budgets. The project contributed to the accelerated deforestation of the Peruvian Amazon, land trafficking, and mercury contamination from illegal gold mining in the highway's vicinity (Dammert 2018).

The dam breach in **Brumadinho, Brazil** was a direct result of corruption. The breach unleashed an avalanche of mining waste, killing an estimated 270 people, destroying natural habitats and wildlife, and polluting watersheds. The disaster is still being litigated, but environmental prosecution points to the collusion between the mining company and auditors to misrepresent the conditions of the dam and potential for a breach (Fernandes et al. 2016, Cionek et al. 2019, Angelo 2020, and CPI Bruma).

Case Study 1: The Amazon, WWF Brazil, and Transparency International Brazil

Context: The Amazon is home to 10 percent of the world's known plant and animal species and over 24 million people, including Indigenous peoples and local communities. Beginning in the early 1900s, large-scale infrastructure projects, including transportation networks and hydroelectric dams, were built to secure national sovereignty and enhance socio-economic development.

Challenge: Corruption in these infrastructure projects have produced large, unnecessary projects, a lack of environmental oversight, and insufficient mechanisms for relocation. These consequences can devastate Amazonian ecosystems, biodiversity, and endemic species and lead to human rights violations of the many people who live in the region. The push for post-pandemic economic recovery and the weakening of institutions have only increased the risks of corruption.

Corruption and lifecycle: The most significant corruption occurs in the feasibility and design phase when the value and cost of potential projects are evaluated and budgeted. Corrupt actors pressure decision makers to accept projects regardless of their social and ecological impacts in return for political and personal support. These decisions cascade through the lifecycle and further encourage corruption in EIAs, the distribution of compensation for affected populations, and the management of project royalties.

Anti-corruption responses: WWF Brazil and Transparency International Brazil's responses are rooted in three key anti-corruption concepts: integrity, transparency, and accountability. The organizations developed 5 anti-corruption pillars, each with a suite of specific measures (See full description in Portuguese and the executive summary in English). Examples include:

- Combat corruption in bidding and contracting by requiring a formal justification for project proposals;
- Maintain a transparent lobby registry to regulate lobbying and conflicts of interest;
- Implement integrity reforms like whistleblower protections in the public and private sectors;
- Strengthen participation and social control in the project planning phase;
- Improve impact management and environmental licensing.

Project origination

Project origination refers to formal and informal methods by which an infrastructure idea moves into a formal review procedure. This phase defines the project's purpose and often its scope and scale. The risk of grand corruption is greatest in this phase. The most significant conservation risks result from unneeded, oversized, or poorly located projects that do not serve socio-economic development needs and undermine conservation goals. These projects may result in land tenure violations, disregard for environmental regulation and planning criteria, exchanging protected area status for private gain, or unnecessary relocation of populations. Central actors include government ministers, senior civil servants, procurement officers, and outside consultants. Consultants may include designers, engineers, surveyors, or planners. They can be key actors in corruption risks because they develop the primary technical analyses that decision makers and outside observers use to evaluate the environmental and conservation impacts of a project.

Illustrative Examples of Corruption Risks:

A. Approval of unnecessary projects due to political influence for private gain.

B. Exerting political pressure to promote large, more destructive projects over more limited options in return for payments to election campaigns.

Case Study 2: The Balkans, WWF Adria

Context: The Balkans are home to some of the last free-flowing rivers in the world. These freshwater systems support a high concentration of biodiversity, including endemic species and unique ecosystems. The health of the freshwater systems is critical for the socio-economic wellbeing of nearby communities.

Challenge: Since 2009, the number of small hydropower dams has quadrupled. Deforestation for access roads and pipelines and the diversion and damming of free-flowing rivers have destroyed habitats in ecologically sensitive areas, reduced sediment transport, and negatively impacted fish migration. Some projects have left downstream residents without water.

Corruption and lifecycle: The main risk for corruption happens early in the infrastructure lifecycle. The boom in hydropower construction is driven by EU subsidies for green infrastructure and renewable energy sources (EuroNatur 2019). Conservationists argue that the ecologically destructive nature of dams and their minimal contribution to overall electricity generation demonstrate that hydropower is not green. Yet these subsidies encourage sector investment, and many of the concessions directly benefit high-ranking officials and those close to them, at the expense of nature and the wider population, raising concerns about grand corruption.

Anti-corruption responses: WWF Adria's anti-corruption activities are directed across the infrastructure lifecycle but are primarily focused on project origination and procurement activities to reduce the attractiveness of grand corruption. Responses include:

- Advocacy at the national, regional, and EU levels for elimination of hydropower subsidies;
- The promotion and facilitation of civil society organizations in transparent policy and planning processes; and
- Collaboration with watchdog organizations and independent investigative journalists to hold the government accountable.

Feasibility and design

Feasibility and design includes activities related to project assessment, design, and budgeting. This phase determines whether a project meets regulatory, budgetary, and design constraints. Substantial corruption risks exist at this stage, as bribes and other corrupt actions can subvert regulatory and budgetary safeguards. When reviewing EIAs, for example, project proponents and decision makers may collude to minimize or obscure potential impacts. Central actors include government ministers, senior civil servants, procurement officers, and outside consultants.

Illustrative Examples of Corruption Risks:

C. Manipulation of how ecosystem services or other natural elements are valued to promote approval of projects at odds with national conservation objectives.

D. Incomplete designs that leave room for later adjustments, thus creating the opportunity to excessively inflate costs and the size and scope of the project.

Contracting and implementation

Contracting and implementation refers to the legal and bureaucratic processes that move a project from design through construction. These processes include soliciting bids, awarding contracts, meeting regulatory compliances, and the bulk of procurement activities. There is a substantial risk for corruption in this phase, particularly in contract bidding and procurement. These activities primarily impact the value of the project, although conservation impacts increase when contractual changes lead to major design changes that are not vetted through oversight mechanisms. Central actors include procurement officers, consultants, and contractors.

Illustrative Examples of Corruption Risks:

E. Collusion among officials and/or between bidders, resulting in the selection of a company with a poor environmental record that otherwise would not have been selected under a fully competitive process.

F. Bribery of officials to approve contracts, resulting in circumvention of environmental protections or conservation agreements.

Operation and maintenance

Operation and maintenance is how the project is managed following construction and whether it delivers the anticipated value at the projected monetary, social, and environmental costs. Corruption in this phase limits the efficacy and value of the project and potentially impacts conservation by undermining conservation safeguards. For example, maintenance tasks like treating for invasive species, which are less critical to the infrastructure functioning but important for conservation, may be neglected. Inspectors of runoff, pollution, or utility use may demand or accept bribes in lieu of enforcement. Central actors include inspectors, officers, consultants, and contractors.

Illustrative Examples of Corruption Risks:

G. Embezzlement or misappropriation of funds designated for operation and maintenance.

H. Collusion to accept substandard work or materials.

Evaluation and audit

Evaluation and audit consists of a systematic review of the project development process from origination through operation. This review assesses whether the development process conformed to norms and best practices to deliver high-quality, low-impact infrastructure. Corruption distorts this review to mask earlier corrupt behaviors or poor performance. This can impact conservation outcomes indirectly by preventing reforms that would mitigate future bad projects. Central actors include procurement officers and consultants.

Illustrative Examples of Corruption Risks:

I. Corrupt selection of biased or unqualified consultants.

J. Payoffs or incentives to misrepresent of data or other findings.

Anti-corruption approaches: Integrity, transparency, and accountability

Strong planning practices can ameliorate many negative infrastructure impacts, helping ensure that:

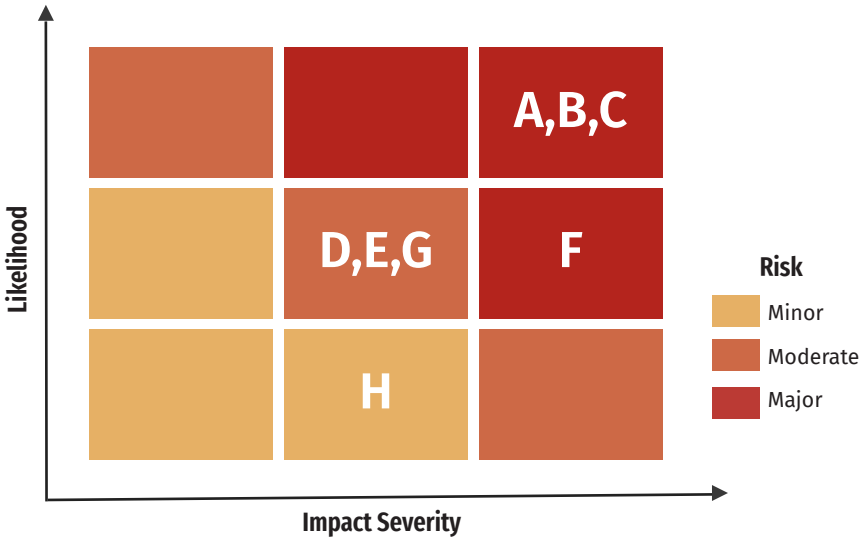
1. The "right" infrastructure is selected, meaning it meets national strategic objectives and social and environmental criteria, rather than advance personal or party interests;
2. The selection and execution processes, including environmental safeguards, are carried out in a fair and transparent manner;
3. The project is executed as approved and contracted; and
4. The desired services are provided, and obligations are met, including those for conservation.

Integrity, transparency, and accountability in these planning processes, tailored to the local context, can limit opportunities for corruption (see, for example, TNRC, Transparency International). The concepts are interdependent, and a robust anti-corruption strategy requires all three.

Integrity refers to behaviors that are consistent with ethical principles. It applies to the public and private sectors, and to groups and individuals. Upholding standards for honest and open conduct builds trust and facilitates working relationships. Commitments to integrity, if accompanied by efforts to normalize related behavior changes among infrastructure decision makers (Burgess 2019), can help ensure

that safeguards in infrastructure development are observed to limit environmental impact and conservation losses. Transparency International promotes the use of an Integrity Pact, in which participants agree not to offer or accept bribes in public contracting. In both case studies (see below), whistle-blower mechanisms allow people to raise concerns about integrity, usually anonymously, when they believe they can't do so openly.

Figure 2: Example of a Risk Assessment Matrix based on infrastructure lifecycle



Transparency is the characteristic of open processes for disclosure of publicly relevant information, rules, plans, processes, and actions. A transparent working environment allows outside observers acting in the public interest to understand what decisions are being made, when, and why. In this way, transparency supports civic participation and accountability, helping ensure that community goals and values are furthered and that projects are not built to serve corrupt purposes. Two key challenges, however, are translating highly technical language so that it is understandable to the general public (CoST Assurance Approach), and ensuring that participation comes at a stage in the process before key decisions are made.

Accountability refers to both the obligation to inform and justify public decisions and the enforcement of rules against corrupt actors. It depends on a transparent environment in which information is readily available and understandable. With enabling institutional norms, the media, civil society, and academia can all work to hold decision makers to account (CoST Accountability Guidance). For example, officials can blacklist firms with a history of corrupt practice or train and empower community groups to serve as project monitors, with any reported violation fully investigated. Accountability actions can target behavior throughout the infrastructure lifecycle.

What can I do?

Conduct a Risk Assessment

The first step to develop an anti-corruption strategy is to undertake a corruption risk assessment (Johnson 2015, UNDOC 2019). A risk assessment helps prioritize the most relevant threats, identify where these threats are within the infrastructure lifecycle, and determine which anti-corruption strategies to use. Not every project or organization is positioned to address all corruption risks. Resources should be allocated to address those risks with the most significant impacts and highest likelihood of occurring.

The output of a risk assessment example is shown in Figure 2, using the example corruption risks from the previous section. The risks with the largest potential to negatively influence conservations outcomes (A,B,C) occur early in the project lifecycle.

Types of Responses

Based on the project or office capacities and the completed risk assessment, anti-corruption measures can take a variety of forms. The two broad categories are advocacy or direct action (although many possible groupings exist, e.g., Kingsford Owuso et al. 2019).

Advocacy includes targeted questions to demand transparency from decision makers and allow for objective third-party review of planning documents and project justifications. Questions can include "Is the project needed?"; "What are the criteria used in the EIA?"; "How are local communities included in determining project goals or assessing project alternatives?"; or "How does the project align with national or government strategic goals and conservation objectives?"

Other advocacy work can mirror that of the case studies, including efforts to change legal and regulatory frameworks, regulate lobbying, and strengthen public participation in decision making. Advocating for the required consideration of Nature-based Solutions (IUCN) in project selection can also help to ensure the inclusion of conservation values in infrastructure development and can mitigate some of the conservation impacts of corruption later in the infrastructure lifecycle.

Direct anti-corruption actions take many forms and can target corruption throughout the infrastructure lifecycle. Where public authorities are willing to partner and demonstrate commitment, initiatives to improve policies and procedures to increase oversight or strengthen investigations may be feasible. Report cards can be collaboratively developed or confrontationally publicized to encourage improved transparency and accountability. Rigorous anti-corruption training initiatives for the public and private sector can build integrity (e.g., training tools by U4, GIACC, or Anti-Corruption Authorities). Awareness-raising, education programs, and mechanisms to provide information in accessible language for communities can build their capacity to demand accountability (e.g., resources from TAI and GIZ). And as noted above, integrity pacts and whistle-blower mechanisms can also enhance integrity and accountability.

Corruption risks and potential responses depend on specific conditions and contexts. Whether and which advocacy or direct anti-corruption measures are appropriate will depend on local circumstances and the values of those involved. Collaborating with other conservation and development partners may be particularly productive given the varied complexities and scales. This overview can serve as a starting point for addressing the challenges of infrastructure corruption and improving conservation outcomes.

Further reading

- Infrastructure and Corruption: Wells (2015) "Corruption in the construction of public infrastructure: Critical issues in project preparation"
- Corruption and Conservation: Tacconi and Williams (2020) "Corruption and Anti-Corruption in Environmental and Resource Management"
- Infrastructure and Conservation: Laurance et al. (2015) "Reducing global environmental impacts of rapid infrastructure expansion"

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About Targeting Natural Resource Corruption

The Targeting Natural Resource Corruption (TNRC) project is working to improve biodiversity outcomes by helping practitioners to address the threats posed by corruption to wildlife, fisheries and forests. TNRC harnesses existing knowledge, generates new evidence, and supports innovative policy and practice for more effective anti-corruption programming. Learn more at tnrcproject.org.

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