

# The perils of payoff: corruption as a threat to global biodiversity

William F. Laurance

Smithsonian Tropical Research Institute, Apartado 2072, Balboa, Republic of Panamá

**Corruption is a worldwide phenomenon, particularly in many developing countries, which contain a large proportion of global biodiversity. Most alarming, from a biodiversity–conservation perspective, is the frequent corruption of government officials who manage valuable natural resources, such as timber, oil and precious minerals. A recent study by Joyotee Smith and colleagues describes rampant corruption in the timber industry of Indonesia, and shifts in the prevalence of different types of corruption as the country has become destabilized politically. By placing corruption into a conceptual framework, Smith *et al.* provide important insights into how developing nations and their natural resources can be besieged by corruption.**

Corruption afflicts all societies. One need look no further than the financial scandals engulfing US-based corporations such as Enron and WorldCom, where company executives defrauded investors out of billions of dollars [1,2], to be reminded that this is so.

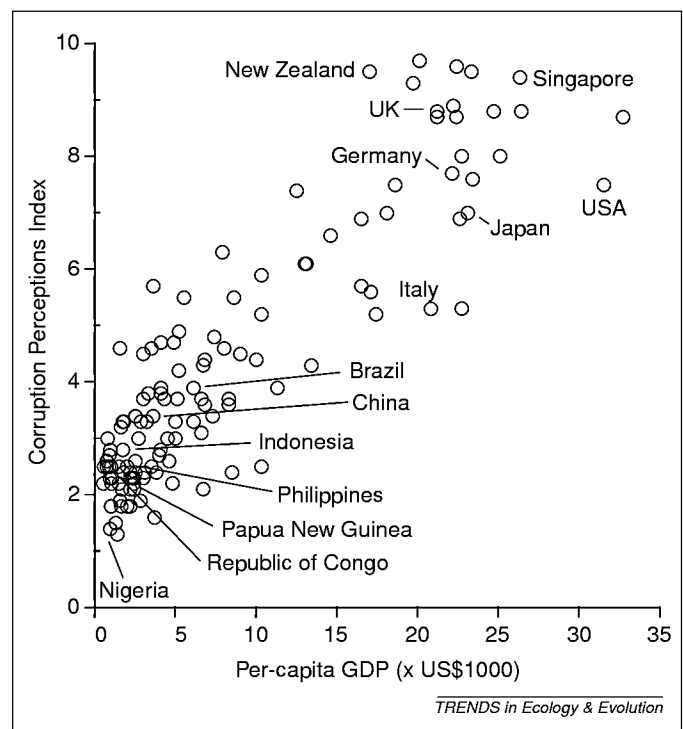
However, some societies suffer more from corruption than do others (Figure 1). Political corruption, where individuals abuse public office for financial or other private gain, is pervasive in many developing countries [3]. This often occurs because government officials in such countries are poorly paid, increasing the likelihood of bribery, particularly when officials control valuable natural resources, such as timber, oil, minerals and gemstones. Other societal phenomena that are common in developing countries, such as weak political institutions, poorly developed checks and balances among different government agencies, and widespread nepotism and political patronage, can also promote corruption. Given that developing nations usually rely heavily on the exploitation of natural resources for revenue and employment, corruption has a corrosive effect on governments and can seriously impede economic and social development [4].

Although corruption can reduce environmental pressures by hindering development activity, it is usually perceived as a threat to sustainable development. Corruption can have a significant impact on nature conservation by promoting overexploitation of forests, wildlife, fisheries and other resources, and by reducing the effectiveness of conservation programs [3]. Many ecosystems, such as species-rich tropical forests and coral reefs, which are largely confined to developing countries, and temperate

and boreal forests in Asia and South America, are highly vulnerable [3,5,6]. A new study by Joyotee Smith and her Indonesian and US colleagues [7] describes how pervasive corruption has promoted rampant illegal logging and destruction of tropical forests in Indonesian Borneo (Kalimantan). Conceptually, these authors break new ground by proposing that unstable governments are highly vulnerable to the most insidious forms of corruption.

## Logging and corruption in Indonesian Borneo

Timber is a multi-billion dollar business in the tropics [8]. Corruption is considered to be so endemic in the tropical-timber industry [9–12] that the relationship has been described as ‘symbiotic’, with each activity feeding the other [7]. Corruption enables loggers to ignore environmental regulations, flout timber quotas, log outside designated harvest areas, and evade timber taxes and export duties. In Indonesia, illegal logging and timber



**Figure 1.** The prevalence of corruption in developing nations. Shown is the relationship between per-capita gross domestic product (GDP), which is an index of economic development [24], and Transparency International’s Corruption Perceptions Index [19], in which lower scores indicate increasingly pervasive corruption. The relationship, for 130 countries, is highly significant ( $r = 0.893$ ,  $P < 0.0001$ ; Pearson correlation).

Corresponding author: William F. Laurance (laurancew@tivoli.si.edu). Available online 17 June 2004

### Box 1. Two forms of political corruption

Smith *et al.* [7] draw a fundamental distinction between collusive and non-collusive corruption. In non-collusive corruption, a government official demands a bribe for a legal activity, such as obtaining a logging or mining permit. In this case, the bribe is being coerced by the official, and the cost of the bribe is in addition to official costs levied by the government (such as taxes, royalties and export fees). Thus, non-collusive corruption increases the price of natural-resource exploitation for the private sector.

Collusive corruption occurs when the briber and government official conspire (or collude) to rob the government of revenues. The bribe is essentially an insurance policy taken out to avoid paying penalties for illegal activities. For example, in return for a bribe, a government official might allow logging outside authorized areas, overlook tax evasion, or allow timber to be exported without permits. By defrauding the government, collusive corruption reduces the costs of natural-resource use and thereby tends to promote over-exploitation. Collusive corruption is also more difficult to detect and eradicate, because it is highly decentralized and because neither the briber nor the bribee has an incentive to report or protest.

According to Smith *et al.* [7], strong, centralized governments that are effective in controlling the exploitation of natural resources tend to promote non-collusive corruption. Bribes are usually paid to the central government or high-ranking officials, who might use some of the funds to help maintain their hold on political power. Collusive corruption is more decentralized and thrives under weak, fragmented governments. In this case, bribes are paid to local officials or fiefdoms.

exports lead to massive losses of Government revenue, estimated at US\$4 billion annually by the Indonesian Ministry of Forestry [13].

Smith *et al.* [7] draw a fundamental distinction between two forms of corruption, collusive and non-collusive (Box 1), both of which are rife in Indonesia. Moreover, they assert that the relative importance of the two forms changed dramatically when the Central Government became unstable and fragmented following the decline and departure of former President Suharto in 1998. Non-collusive corruption, they argue, thrived under the strong, heavily centralized Suharto dictatorship, which ruled Indonesia from 1967 to 1998. Large-scale logging concessions (long-term leases) were granted to Indonesian-Chinese conglomerates in return for massive funds that enriched Suharto's family, provided patronage for his political and military allies, and funded Government projects, such as the environmentally destructive transmigration programs that relocated millions of Javanese to Borneo, Sumatra, New Guinea and other Indonesian islands [14]. During his Presidency, Suharto is believed to have misappropriated US\$15-35 billion, the most by any political leader in history [15].

As the Suharto regime declined and collapsed, the importance of collusive corruption rose sharply. In Kalimantan, timber entrepreneurs bribed local authorities to issue excessive numbers of short-term logging contracts, and also paid off the military and police, provincial forestry officials, district Government officers, and local tribal leaders. Border patrols and Malaysian officials were also bribed to allow illegal log exports into Malaysian Borneo. Bribes and unofficial payments far exceeded timber taxes paid to the Government. Under this

### Box 2. Strategies for fighting corruption

Anti-corruption strategies are diverse and involve actions directed at the international, national, civil and business communities. At the national level, a key step is ratification of international anti-corruption agreements, such as the OECD Anti-Bribery Convention and the Criminal Law Convention Against Corruption. Following ratification, enactment of legislation is essential to bring the force of law into anti-corruption measures; to provide for legal definitions of corruption, illicit lobbying, conspiracy, election fraud, money laundering and other prohibited activities; and to stipulate fines and prison terms for violators [22].

Anti-bribery legislation is meaningless without improved enforcement. To date, 35 countries have imposed criminal penalties for bribery in foreign business dealings [23]. Chile and Korea, for example, have recently created anti-corruption task forces that will specialize in preventing, detecting and prosecuting acts of corruption, and in protecting whistle-blowers [22].

Education is equally vital. Brazil, for example, plans to hold national and regional anti-bribery events to improve awareness in the private sector and civil society, and will host the 2005 Global Forum in Fighting Corruption [22]. Local chapters of civil and business organizations, such as Transparency International (<http://www.transparency.org>) and the International Chamber of Commerce (<http://www.iccwbo.org>), are helping to promote intolerance of bribery via outreach and educational activities in many countries [23]. However, there is still a dire need to improve codes of conduct, public transparency and anti-corruption practices among leading multi-national corporations [20].

anarchic situation, illegal logging skyrocketed and far outstripped sustainable timber supplies. The area of forest logged grossly exceeded that authorized, and logging in national parks became rampant [7]. With logging occurring in concert with rapid conversion of forests into oil-palm plantations, deforestation in Indonesian Borneo reached catastrophic proportions [16,17]. From 1985 to 2001, 56% of lowland forest in protected areas was destroyed, along with most of the lowland forest outside the protected areas [16].

### Corruption and conservation

The study by Smith *et al.* is important because it suggests a fundamental relationship among government stability, bribery, and severe overexploitation of natural resources [7]. Under the Suharto regime, rates of forest destruction in Indonesia were high ( $\sim 1$  million ha  $y^{-1}$ ), but both accelerated to a break-neck pace ( $\sim 2$  million ha  $y^{-1}$ ) following the collapse of the Central Government [18]. In our increasingly overpopulated and conflict-worn world, such destabilizing transitions in governments could become more common, as evidenced, for example, by the chaotic breakups of powerful, centralized control in Indonesia, the Philippines, the Soviet Union, Iraq and many countries in sub-Saharan Africa.

From a conservation perspective, what is most alarming about such destabilizing transitions is that they can be accompanied by a breakdown in the control of natural-resource development [7]. This fuels collusive corruption and a 'looting mentality', whereby rapacious overexploitation of resources becomes the norm. If the conceptual model of Smith *et al.* is valid [7], then conservationists and resource managers should be keenly aware that political



**Figure 2.** Anti-corruption campaigns are playing a prominent role in the national politics of some developing countries. The sign indicates 'yes' to employment and social security, and 'no' to corruption in Panama. Copyright W.F. Laurance.

transitions (particularly those that result in a sudden breakdown of centralized control) could have severe environmental consequences.

What can be done to combat corruption (Box 2)? The solutions will not be easy, particularly for collusive corruption, which is inherently insidious and difficult to root out. Transparency International (<http://www.transparency.org>), a nongovernmental organization that studies corruption and its consequences, argues that wealthy nations should provide practical aid to developing-country governments that attempt to curb corruption (Figure 2). In addition, donor nations and international financial institutions should take a hard line with intractably corrupt governments, reducing or even halting support [19]. Equally important is that rich nations must work far more actively to enforce international agreements, such as the Anti-Bribery Convention of the Organisation for Economic Cooperation and Development (<http://www.oecd.org>), to curb bribery by multinational corporations [20]. Far too often, resource-exploiting corporations proffer bribes in the developing world, rationalizing that 'this is just the way that business is done here' and 'if we don't give bribes, we'll lose out to our competitors'. According to Transparency International's Bribe Payers Index [21], which assesses the propensity of companies to bribe in emerging markets, multinational firms in Russia, China, Taiwan and South Korea are considered the worst offenders, closely followed by those in Italy, Malaysia, Japan, USA and France.

For those concerned with nature conservation, the collapse of Indonesian governance offers sobering lessons for the future. As human populations continue to expand exponentially in the developing world, competition for land and natural resources (and the inevitable conflicts and volatility that this engenders) will only increase. Under these conditions, collusive corruption is expected to thrive. Determined efforts will be needed by all nations to fight corruption and slow rampant overexploitation of

natural resources. For their part, wealthy nations must strive to become part of the solution, rather than part of the problem.

#### Acknowledgements

I thank Joyatee Smith, Raphael Didham, Robert Ewers, Rhett Harrison, Kenneth Feeley, William Allison and three anonymous referees for commenting on the article.

#### References

- Bryce, R. (2002) *Pipe Dreams: Greed, Ego, and the Death of Enron*, PublicAffairs Publishing
- Hill, P. (2004) WorldCom founder indicted in fraud. *The Washington Times*, 2 March, A5
- Smith, R.J. *et al.* (2003) Governance and the loss of biodiversity. *Nature* 426, 67–70
- Kaufmann, D. (1997) Corruption: the facts. *Foreign Policy* 107, 114–131
- Myers, N. *et al.* (2000) Biodiversity hotspots for nature conservation. *Nature* 403, 853–858
- Roberts, C.M. *et al.* (2002) Marine biodiversity hotspots and conservation priorities for tropical reefs. *Science* 295, 1280–1284
- Smith, J. *et al.* (2003) Illegal logging, collusive corruption and fragmented governments in Kalimantan, Indonesia. *Intern. For. Rev.* 5, 293–302
- Pleydell, G. and Johnson, S. (1997) Tropical timber trade trends: 1987–1996. *ITTO Tropical Forest Update* 7, 13–15
- Palmer, C. (2001) *The Extent and Causes of Illegal Logging: An Analysis of a Major Cause of Deforestation in Indonesia*, Centre for Social and Economic Research on the Global Environment
- Contreras-Hermosilla, A. (2001) *Forest Law Enforcement*, World Bank
- Sizer, N. and Plouvier, D. (2000) *Increased Investment and Trade by Transnational Logging Companies in Africa, the Caribbean and the Pacific*, Joint report of World Wide Fund for Nature-Belgium, World Resources Institute, and WWF-International
- Laurance, W.F. (2000) Cut and run: the dramatic rise of transnational logging in the tropics. *Trends Ecol. Evol.* 15, 433–434
- Anon. (2002) Corruption: a threat to sustainable development. *The Jakarta Post* 6 June ([http://202.58.67.35/HeadlineNews/02\\_11.asp#Story\\_06](http://202.58.67.35/HeadlineNews/02_11.asp#Story_06))
- Ascher, W. (1999) *Why Governments Waste Natural Resources*, John Hopkins University Press
- BBC News (2004) *Suharto Tops Corruption Rankings*, 25 March (<http://news.bbc.co.uk/1/hi/business/3567745.stm>)
- Curran, L.M. *et al.* (2004) Lowland forest loss in protected areas of Indonesian Borneo. *Science* 303, 1000–1003
- Holmes, D. (2002) *Deforestation in Indonesia: A Review of the Situation in Sumatra, Kalimantan, and Sulawesi*, World Bank
- Barber, C.V. *et al.* (2002) *The State of the Forest: Indonesia*, Joint report of the World Resources Institute, Global Forest Watch, and Forest Watch Indonesia
- Anon. (2004) *Global Corruption Report 2004*, Transparency International, Berlin (<http://www.globalcorruptionreport.com>)
- OECD, (2003) *Business Approaches to Combating Corrupt Practices*, Organisation for Economic Cooperation and Development
- Anon. (2002) *Bribe Payers Index 2002*, Transparency International
- OECD (2003) *Steps Taken and Planned Future Actions by Participating Countries to Ratify and Implement the Convention on Combating Bribery of Foreign Public Officials in International Business Transactions*, Organisation for Economic Cooperation and Development
- OECD, (2003) *Fighting Corruption: What Role for Civil Society? The Experience of the OECD*, Organisation for Economic Cooperation and Development
- CIA (2003) *The World Factbook*, Central Intelligence Agency, Washington, DC (<http://www.cia.gov/cia/publications/factbook/geos/gb.html>)