



THE ROYAL INSTITUTE OF
INTERNATIONAL AFFAIRS

Sustainable Development
Programme

INTERNATIONAL ENVIRONMENTAL CRIME

THE NATURE AND CONTROL OF ENVIRONMENTAL BLACK MARKETS



Workshop Report

Gavin Hayman and Duncan Brack

© Royal Institute of International Affairs, 2002

Cover photograph of Soldier at Koh Kong log rest area, Cambodia, 1997, courtesy of Global Witness

Sustainable Development Programme

Royal Institute of International Affairs

10 St James's Square, London SW1Y 4LE, UK

www.riia.org/sustainabledevelopment

The Royal Institute of International Affairs is an independent body which promotes the rigorous study of international questions and does not express opinions of its own. The opinions expressed in this publication are the responsibility of the author(s).

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted by any other means without the prior permission of the copyright holder.

Duncan Brack is Head of RIIA's Sustainable Development Programme and works on environmental policy. During his time with the Programme, first as a senior research fellow and latterly as Programme Head, he has published mainly on trade and environmental issues and international environmental crime.

Gavin Hayman is Lead Campaigner with Global Witness and Associate Fellow of the Sustainable Development Programme. He was responsible for some of the first investigations into black markets in ozone-damaging chemicals and now uses his experiences to look at the general problem of controlling international environmental crime.

Contents

1	INTRODUCTION.....	4
2	WHAT IS ‘INTERNATIONAL ENVIRONMENTAL CRIME’?.....	5
	2.1 ENVIRONMENTAL CRIME AS ENTERPRISE CRIME	6
3	WHO ARE THE INTERNATIONAL ENVIRONMENTAL CRIMINALS?.....	7
4	THE DRIVERS BEHIND ENVIRONMENTAL CRIME.....	10
	4.1 CURTAILED SUPPLY AND UNMET DEMAND.....	10
	4.2 INSTITUTIONAL AND REGULATORY FAILURES	15
5	A JOINED-UP APPROACH TO TACKLING INTERNATIONAL ENVIRONMENTAL CRIME.....	22
	5.1 IMPROVING NATIONAL ENFORCEMENT.....	22
	5.2 IMPROVING INTERNATIONAL COORDINATION.....	24
	5.3 NEW TECHNOLOGY	26
	5.4 COMPLIANCE ASSURANCE.....	27
	5.5 ‘LONG-ARM’ ENFORCEMENT.....	29
	5.7 ADDRESSING SUPPLY AND DEMAND FOR CONTRABAND	30
	5.8 LESSONS FROM OTHER INTERNATIONAL CONTROL REGIMES	34
6	PRIORITIES FOR ACTION.....	36
	APPENDIX 1: WORKSHOP AGENDA.....	39

1 Introduction

This paper summarizes the discussions and conclusions of a workshop on the nature and control of environmental black markets held at the Royal Institute of International Affairs, London on 27–28 May 2002. Thanks to generous support from the European Commission (DG Environment) and UNEP Ozone Secretariat, some eighty participants from over thirty different countries were able to attend.

Rather than simply collect and repeat what is known about the extent of the illegal activities in specific jurisdictions – a traditional indulgence of the regulatory community – the workshop was intended to provide a more systematic understanding of the driving forces behind international environmental crime. Efforts to tackle the smuggling of environmental contraband have been dogged by an ad hoc and unsystematic approach where individual enforcement agencies attempt to headhunt environmental criminals without reducing the size of the illegal market in which they operate. The failure of the international ‘war on drugs’ suggests that this policy is doomed: as long as demand and supply pressures that shape profit-making opportunities remain, other operators will expand their operations or new operations will enter the international market. Thus, the workshop raised the need to think beyond simply increasing enforcement effort to minimize overall levels of environmental harm by addressing the demand and supply of the contraband.

This paper is not a literal account of proceedings but rather an attempt to summarize and draw conclusions from the wide-ranging discussions held. It also tries to clarify elements of successful national and international regulatory strategies and draw lessons between the different areas of environmental regulation discussed.

The workshop’s agenda is attached as an appendix to this report, and the background paper prepared for the workshop, which summarizes what is known about international environmental crime, is available from the Sustainable Development Programme’s website (www.riia.org/sustainabledevelopment). Individual presentations by speakers at the workshop are available on CD (in Word and PowerPoint formats); please email your request to sustainable-development@riia.org.

2 What is 'international environmental crime'?

More than 250 international and regional environmental agreements have been developed in the thirty years since the first landmark United Nations Conference on the Human Environment in Stockholm in 1972. As these treaties have moved beyond simple pledges of mutual scientific cooperation to incorporate substantive control measures such as trade restrictions, so attempts at evasion have increased.

The very existence of national and international controls may serve to encourage unscrupulous individuals and companies to commit 'environmental crimes' and deliberately evade environmental laws and regulations in the pursuit of personal financial benefit. Where there is movement of goods across boundaries (i.e. smuggling, etc.) or a transboundary impact to offences, so it is possible to speak of 'international' or 'transboundary' environmental crime.

Five broad areas of offences have been recognized by bodies such as the G8, Interpol, EU, UN Environment Programme and the UN Interregional Crime and Justice Research Institute. These are:

- Illegal trade in wildlife in contravention to the 1973 Washington Convention on International Trade in Endangered Species of Fauna and Flora (CITES);
- Illegal trade in ozone-depleting substances (ODS) in contravention to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer;
- Dumping and illegal transport of various kinds of hazardous waste in contravention to the 1989 Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Other Wastes and their Disposal;
- Illegal, unregulated and unreported (IUU) fishing in contravention to controls imposed by various regional fisheries management organizations (RFMOs);
- Illegal logging and trade in timber when timber is harvested, transported, bought or sold in violation of national laws.¹

Other environmental offences may share similar characteristics with these five accepted categories. These include:

- Biopiracy and transport of controlled biological or genetically modified material (a possible offence under the 2000 Cartagena Protocol on Biosafety to the Biodiversity Convention);
- Illegal dumping of oil and other wastes in oceans (i.e. offences under the 1973 International Convention on the Prevention of Pollution from Ships (MARPOL) and the 1972 London Convention on Dumping);
- Violations of potential trade restrictions under the 1998 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
- Trade in chemicals in contravention to the 2001 Stockholm Convention on Persistent Organic Pollutants.
- 'Fuel' smuggling to avoid taxes or future controls on carbon emissions.

¹ Currently there are no binding international controls on the international timber trade, with the exception of endangered tree species covered by CITES.

Oil and waste dumping at sea and some fuel smuggling are already legal offences, whereas the others will only become so when the relevant multilateral environmental agreement (MEA) and its implementing legislation enter into force.

No study has attempted to draw lessons from this group of problems as a whole, nor to organize the various policy issues involved into a coherent framework for analysis: the workshop saw the beginning of this process.

2.1 Environmental crime as enterprise crime

In contrast to traditional predatory crime, which involves the involuntary redistribution of existing wealth through theft and robbery, etc., environmental crime involves the production and/or distribution of goods and services that are illegal by their classification.

Such 'enterprise' crime is more effectively conceptualized as a market than a form of social deviance: criminal activities are structured around multilateral exchanges involving producers, processors, retailers and final consumers where supply and demand for services interact in a free-market relationship. The traditional 'headhunting' approach adopted by law enforcement agencies to tackle predatory crime does nothing to address the supply and demand pressures that shape profit-making opportunities.

Although individuals may all benefit from a given environmental crime, the associated environmental damage implies that society overall is harmed: however, as society as a whole is often unaware of its victimization, so regulators may not set levels of enforcement effort and restitution properly. There may even be the tacit assumption among regulatory institutions that because such problems are not directly quantifiable, they are not significant.

3 Who are the international environmental criminals?

Most environmental crime seems to be committed by loosely organized networks of individuals with some specialist knowledge of the area in which they work who have often been overtaken by regulations. Activities are organized ‘in the sense in which informal unity and reciprocity may be found’ rather than ‘in the journalistic sense, for no dictator or central office directs work of members of the profession’.² In fact, this lack of a Mr Big may be more damaging for the environment: a single Mafia-type organization might exercise more restraint on exploiting endangered animals than small competing enterprises locked in a cut-throat ‘tragedy of the commons’. Complicated networks of interaction exist that link raw materials and producers to customers through a web of supplier relationships with the involvement of ancillary specialist services and other key actors such as legitimate business, government officials and consumers.

It is possible to distinguish different criminal constituencies among different areas of environmental crime and even within a specific area of environmental crime. Within the wildlife trade, for example, there are clear differences between (i) low-volume, low-value ‘tourist’ cases; (ii) high-volume, low-value opportunist smuggling; (iii) high-volume, high-value smuggling by organized criminal networks, and (iv) low-volume, high-value ‘smuggle to order’ operations for collectors and fanciers to focussing on the primate trade, for example, tourists tend to buy protected species randomly; ‘smuggling to order’ tends to involve high-value animals such as orang-utans or chimpanzees that make good tourist attractions; and professional smugglers tend to concentrate on supplying rhesus monkeys to the lucrative laboratory market by ‘laundering’ wild-caught animals through captive breeding facilities. Similarly, IUU fishing vessels pursuing the Patagonian toothfish – a deepwater fish in the Southern Ocean that is prized for its high-quality flesh – are differentiated by methodologies, perceptions of risk, operational incentives and geographic distribution between the expensive reflagged deep-water longliners of the largely Scandinavian-owned ‘Vikings’ and the shallow-water, expendable, floating rust-buckets of the so-called ‘Spanish Armada’.³

Where profits are high and risks low, as in many areas of environmental crime, it is clear that a specialism in avoiding controls (i.e. professional environmental criminals) will gradually develop. India’s most notorious poacher, Sansar Chand, for example, has so far evaded prosecution for involvement in over forty cases dating back to 1974. Such specialists know how to take advantage of paper controls and how to influence regulatory decisions to create loopholes that they can exploit.⁴

Restrictions or bottlenecks at certain points along international commodity chains allow for more classic ‘organized’ criminal involvement in environmental crimes – as, for example, with cross-border smuggling groups which specialize in avoiding border checkpoints. Thereafter, however, the illegal goods pass on to very different distribution channels. For example, Mexican and US organized smuggling gangs may move endangered parrots, ODS, narcotics and weapons together across the Rio Grande. Chinese nationals who specialised in ‘sanctions busting’ for South Africa’s apartheid regime also ran lucrative sidelines importing stolen vehicles from the United Arab Emirates and exporting

² M. McIntosh, *The Organization of Crime* (Basingstoke: Macmillan Press, 1975), p. 10.

³ ISOFISH, *The Involvement of Mauritius in the Trade in Patagonian Toothfish from Illegal and Unregulated Longline Fishing in the Southern Ocean and What Might be Done About It* (Hobart: International Southern Oceans Longline Fisheries Information Clearinghouse Occasional Report No.1, 3rd edition, August 1998).

⁴ Such as the CITES decision to set the minimum size of controlled ivory shipment to over 1 kilogram of ivory, which allowed traders to move hundreds of tonnes of illegal ivory in cross sections of tusks smaller than this to manufacture ‘hanko’ signature seals.

ivory and rhino horn poached under South African sanctions from countries such as Angola and the Far East.

Italy has an official term – ‘Ecomafia’ – for this adaptation of organized crime to environmental offences. Research by the Italian environmental NGO Legambiente points to the far higher than average incidence of recorded environmental crime in the traditional Mafia strongholds of Campania, Puglia, Calabria and Sicily. Operation Trash in Sicily in 1999 and 2000 also revealed extensive Cosa Nostra involvement with the export and/or dumping of hazardous waste shipments at sea. Another example may be the caviar trade out of the former Soviet Union, where poaching activity shows a high degree of territoriality, with gangs often turning their ex-Soviet military ordinance on each other or on enforcement officials who do their job too well.⁵ At other times, there may be clear indications of large vested interests. China’s leading protector of the Chiru – the endangered Tibetan antelope hunted for its super-fine throat wool – was gunned down outside his home in November 1998.⁶ Recent cases of tiger poaching in India, for example, have seen local tanners treating skins or their couriers represented by top Delhi lawyers, whose retention is clearly beyond their own financial means.

Law enforcement agencies that tackle conventional organized criminal gangs have become interested in environmental crime as a possible source of venture capital for more traditional exploits such as narcotics trafficking. Clear examples have yet to be uncovered, the other side of the problem has been identified. Drug money may provide capital for illegal logging and illegal fishing operations in Central America. ‘Backloading’ may also occur, where smugglers carry drugs to one destination and bring back wildlife, although in many cases wildlife and drugs are passing from South to North. In other cases, wildlife and drug-trafficking may be combined – although it is rare to use endangered wildlife, which has its own intrinsic value, as ‘mules’ for heroin or cocaine.

Environmental crime also leads to the erosion of state authority and creates a culture of lawlessness. The Honduran Mosquitia, including remote areas like the Sico-Paulaya valle in the Río Plátano biosphere buffer zone, have been abandoned to an increasingly ‘uncivil society’ with an endemically violent culture that is involved in illegal lobster fishing, illegal logging and drug-trafficking.

Some environmental crime, especially industrial activities such as logging, cannot easily be disguised and may be heavily reliant on corruption.⁷ This problem is not confined to developing countries, but the problems there are generally more evident and more serious as remuneration of enforcement officials and bureaucrats is often poor, civil society is weaker, and transnational companies that offer inward investment are proportionately more powerful. Allocation of licences to exploit resources such as timber can also be used as a mechanism for mobilizing wealth to reward political allies and engender patronage.

Protected by powerful patrons, such companies may evade national regulations with relative impunity. A judicial enquiry by Judge Barnett into corruption in the forestry sector in Papua New Guinea in the late 1980s described logging operations as ‘roaming the countryside with the assurance of robber

⁵ ‘A black market in animals worth US\$5m’, *International Police Review*, December 1999, pp. 6–8.

⁶ ‘China’s top Tibet antelope campaigner slain’, Reuters, 18 November 1998.

⁷ Corruption is different from facilitation payments. The former is a bribe to induce an official to do something that he (or she) should not do as part of his job (i.e. to award a contract without an open tender); the latter is a payment to encourage an official to do something that they should already be doing.

barons; bribing politicians and leaders, creating social disharmony and ignoring laws'.⁸ The highly quotable report was quickly suppressed, not least because it seriously implicated the then deputy prime minister in illegal practices, and Judge Barnett subsequently suffered a near-fatal stabbing outside his home.

Even in such highly corrupt situations, some rules must still exist, since if resources are available to all-comers, it is impossible to bestow patronage on specific individuals or sectors of society. Enforcement, however, becomes an instrument to control the flow of illegal rents and ensure the patronage of clients. As with narcotics, the ensuing corruption is a major externality of some environmental protection regimes.

Overall, in the absence of compelling evidence of the claimed scale of classic hierarchically structured organized crime groups in environmental crime, as opposed to their known involvement in some areas, is it important to avoid over-emphasis on headhunting individual criminals to the detriment of addressing the market in which they operate. This issue will be explored more fully in the next chapter.

⁸ G. Marshall (ed.), *The Barnett Report. A Summary of the Report of the Commission of Inquiry into Aspects of the Timber Industry in Papua New Guinea* (Hobart: Asia-Pacific Action Group, 1990), p. 36.

4 The drivers behind environmental crime

Controls that restrict the supply or demand of an existing environmental service will result in a missing market for that service. Unscrupulous individuals may seek to fill the gaps between the original market and the resultant one for personal profit by cutting corners, evading charges or bypassing access restrictions.

Superimposed on this missing market that drives environmental crime may be specific regulatory or institutional failures that serve to undermine resulting control systems. Regulatory failures involve inadequate regulations that fail to implement an environmental treaty properly, contain loopholes or fail to deter (or even punish) evasion of the rules. Even when the rules themselves are adequate, institutional failures such as inadequate resources, untrained staff or cumbersome administration may prevent the effective operation of environmental controls.

4.1 Curtailed supply and unmet demand

Supply and demand restrictions for environmental services may come about for a number of reasons. Supply may be constrained to conserve a scarce environmental good such as an endangered animal population or because of increased costs of complying with altered environmental regulations. Similarly, demand may be adjusted through policies such as taxation to compensate for an associated cost or externality related to the production or consumption of particular commodities.

If supply is restricted and demand remains, there is an incentive to violate the controls on the access of the controlled commodity. Hence, endangered animals are poached and hazardous waste is dumped into rivers. If demand is artificially curtailed, there is an incentive to avoid associated costs and taxes through turning to unregulated sources of supply. Hence, illegal forestry operations pay bribes to avoid taxes or ‘transfer price’ their products to avoid royalties. The result may be a very different level of environmental damage and resource utilization from that envisaged under ‘perfect’ implementation of environmental controls.

CITES

The poaching and smuggling of commodities such as ivory, rhino horn, tiger bones, sturgeon eggs, bear galls, wild-caught parrots and rare orchids directly threaten some or all of the populations of the species that provide them in the wild. Unfettered trade in derivatives from hundreds of other less charismatic species also serves to further deplete wild populations subject to many other pressures including the pervasive threat of habitat loss.

The wildlife trade flows predominantly from less developed to more developed countries (i.e. South to North). Major sources of demand are the exotic pet and flower trade, exotic curios, frivolous fashion demands (often underpinned by ignorance of the real nature of the commodity being traded⁹), the pet trade and collectors, ingredients for traditional medicines, and cultural materials (such as ivory for personal *hanko* seals in Japan and rhino horns for dagger handles in Yemen).

⁹ For example, trade in Shahtoosh shawls from the throat wool of the endangered Tibetan antelope (*Pantholops hodgsonii*) has become popular in the fashion industry under the misapprehension – perpetuated by leading fashion magazines – that the wool is painstakingly collected from bushes where the animals have rubbed themselves. In reality, the hair is so fine that it must be scraped off the hide of dead animals.

Values along commodity chains routinely increase by at least an order of magnitude and sometimes between twenty-five and fifty times.¹⁰ An African grey parrot exported from the Ivory Coast may be worth US\$20 at the time of capture, US\$100 at the point of export, US\$600 to an importer in the US or Europe and over US\$1100 to a specialist retailer.¹¹ Musk pods from the Siberian musk deer (*Moschus moschiferus*) may be worth some US\$2–3/g to a hunter, US\$7–8/g to a Russian middle man, US\$12–14/g to a European or South Korean trader and over US\$50/g to the European perfume industry.¹²

Traditional East Asian Medicine (TEAM) has attracted considerable attention as a major consumer of endangered species products, with a potential market representing over a fifth of the global population. Although animal ingredients amount to less than 10% of the TEAM pharmacopoeia and endangered animals constitute less than 3%, population growth and recent increases in disposable income in East Asia mean that demand is steadily rising and far outstrips supply. For example, the recommended daily dose of tiger bone – a popular treatment for rheumatism – is 3–6g; since an average adult tiger has a skeleton weighing only about 20kg, one animal represents an annual supply for 9–18 sufferers. Even if only 0.1% of the Chinese population used these products, the world's tigers would disappear within one year.¹³ The main argument for the CITES Appendix I trade ban on certain endangered species is the sheer extent to which demand exceeds supply and concern that any trade will provide for laundering of illegal material.

Unlike commodities such as narcotics, there is a finite stock of an endangered species. Thus, the more endangered it is, the more valuable a species may become: for example, speculative stockpiling of rhino horn in Taiwan in the late 1980s progressively increased the price of rhino horn worldwide from US\$1400/kg to US\$6000/kg wholesale. This encouraged a wave of poaching across Africa.¹⁴

The exact nature of this relationship between rarity and price varies. Demand for some luxury fashion items such as coats made from the wool of a threatened South American camelid called the vicuña, for example, can switch relatively easily to other premium wools such as cashmere. Demand for specific commodities in the TEAM pharmacopoeia may be less elastic because of the perceived importance of their use. Where demand does switch, it may generate new poaching problems elsewhere: for example, the trend towards using leopard bone rather than tiger bone in traditional medicine. Demand from collectors for commodities such as rare orchids would seem to increase in direct proportion to their rarity; so much so that early collectors often used to raze the local area where particularly rare specimens were found to prevent other collectors from obtaining samples.

The clandestine nature of the trade means that live specimens are frequently transported in terrible conditions and many die en route – thus illegal trafficking methods themselves may impose major

¹⁰ The value of narcotics such as heroin may increase by two orders of magnitude along the supply chain. That said, once ancillary costs and the threat of penalties are included, the profit rate in narcotics trafficking is more like 70%, which may equate well with some forms of wildlife smuggling.

¹¹ *Experience with the Use of Trade Control Measures in the Convention on International Trade in Endangered Species*. OECD Working Papers Vol. 5(47) (Paris: Organization for Economic Cooperation and Development, 1997).

¹² V. Holmes, *On the Scent: Conserving the Musk Deer. The Uses of Musk and Europe's Role in its Trade* (Cambridge: TRAFFIC International, 1999).

¹³ J.A. Mills and P. Jackson, *Killed for a Cure: A Review of the World-wide Trade in Tiger Bone* (Cambridge: TRAFFIC International, 1994).

¹⁴ During 1989–91, the South African Endangered Species Protection Unit recovered 189 rhino horns all destined for the Taiwanese market, through domestic intelligence operations.

collateral damage on rare animal populations. For example, mortality levels of 80% were associated with the wild-caught bird trade from Africa to Europe in the late 1980s.

Because of its diverse origins, multiplicity of products, broad consumer base and innately clandestine, high-value/low-volume nature, illegal trade in wildlife is probably the hardest area of environmental crime to control. It is also the area where enforcement authorities have learnt to cooperate with the most success.

Montreal Protocol

The driving force for the smuggling of ODS was the differential phase-out schedules for ozone-depleting substances between developed countries (controlled under Article 2 of the Montreal Protocol) and developing countries (controlled under Article 5(1) of the Protocol). Manufacture of ODS for domestic consumption in the former stopped over ten years before it was to be phased out in the latter. The time period depends upon the precise control schedule: production of the main chlorofluorocarbons (CFCs 11, 12, 113, 114 and 115) for Article 2 markets was phased out in 1996, while manufacture will continue in Article 5(1) countries until 2010.

Although direct restrictions on supply were put in place, demand was generally left to adjust to market forces (apart from use bans for products such as aerosols). Although ODS replacements themselves were often cheaper, the significant capital costs involved in prematurely retiring ODS-dependent machinery meant that a significant latent demand for ODS remained to service existing equipment in developed countries. At the same time, such materials were cheaply and freely available on developing-country markets. This demand was further exacerbated because, despite numerous technical innovations, one critical application did not emerge: there was no drop-in substitute for CFC-12, the most widely used CFC in the mobile air-conditioning sector. Replacing CFC-12 in car air-conditioning initially cost around US\$250–500, while turning to the black market would cost around US\$50 for a recharge. This small retail demand was particularly high in the US (and Canada) because over 90% of automobiles are fitted with CFC-dependent air-conditioning, as compared to about 10% of European vehicles. In 1995, this meant that there were some 110 million cars using CFC-12 for their air-conditioning.

Dwindling supplies of ODS would result in prices rising rapidly in Article 2 countries, while cheap supplies were freely available in Article 5(1) countries. Unscrupulous entrepreneurs who can move ODS from one to the other stand to make a large profit: for example, a kilogram of CFC-12 bought wholesale from a Chinese broker in 1997 generally cost about \$2; smuggled into Europe, it was worth between \$10–15, and in the US, \$20–30.

Global price discontinuities were accentuated in the US through the introduction of an escalating excise tax from 1990 for ODS production and imports. Hence, smuggling for tax evasion began even before the actual phase-out of ODS. The tax provided a considerable additional profit motive for smuggling: in 1995, one container load of CFC-12 (30,000lb) on the world market cost about \$1–2/lb. Shipping costs and transportation to the US would cost an extra \$1–0.50/lb. The excise tax in 1995 added a further \$5.35/lb to the price, which along with a mark-up, meant that domestic wholesale prices were about \$8–9/lb and in retail \$10–11/lb. Therefore, a smuggler could sell his illegal material for about \$8/lb to undercut his competition and make a quick profit of over \$200,000–250,000 per container, doubling his initial stake. One of the first indications of the extent of the black market was the failure of CFC prices quoted to retailers to rise in line with these excise tax increases.

Inflated prices due to supply cartels and taxation have also driven ODS smuggling back into some net exporting countries, notably India.

Basel Convention

Illegal waste dumping has increased as regulations governing the safe and proper disposal of hazardous waste tighten, increasing handling charges and decreasing safe disposal capacity.¹⁵ As illegal dumpers do not have to connect buyers and sellers in a clandestine market, but simply lose the material somewhere, waste dumping is the least specialist environmental crime and, perhaps, the most common. Entry costs are minimal: in one New York police sting in 1992, undercover detectives, posing as illegal dumpers, went into the business of disposing of toxic waste from small businesses for \$40 a barrel but they found the competition so fierce that they had to lower their price.¹⁶ The cost of legal disposal of wastes handled was about \$570 per barrel; this provides an idea of the extent to which costs can be saved.

The increased cost of safe disposal has driven an export trade to many of the world's least developed countries, where regulations are negligible. In reverse of the usual 'environmental crime' problem, the focus of international concern in the waste trade has thus been the flow of material from North to South. Information from the late 1980s, when the export trade grew rapidly, shows that the average cost of disposal of one tonne of hazardous waste in an OECD country was between US\$100 and \$2,000, while in Africa it was between US\$2.50 and \$50.¹⁷

As most developing countries lack sufficient technical knowledge to identify hazardous materials, it may be tempting to avoid disposal charges altogether and pass off hazardous chemicals as innocuous materials like fertiliser or raw materials for recycling. At its acme, highly toxic materials from Northern industrial areas have ended up being dumped on unsuspecting villagers in remote developing countries. In November 1998, for example, the Taiwanese industrial company Formosa Plastics Corporation shipped some 3000 tonnes of mercury-contaminated incinerator ash to the outskirts of the Cambodian town of Sihanoukville, where it was unloaded at night and dumped in a nearby field.¹⁸ The townsfolk were initially delighted with their find and used the ash as fertiliser and the plastic sacks for storage. When a number of people became sick, rumours spread that the material was radioactive and uproar ensued. Some 10,000 inhabitants fled the town and eight people were killed in related incidents.

Illegal, unregulated and unreported (IUU) fishing

Global demand for fish products exceeds global supply. In the developed world, fish is increasingly seen as a healthy eating option; in the developing world, it is a vital and irreplaceable source of protein, especially for the poor.

¹⁵ This interaction between tightening regulations and crime was made very clear in a US court case in July 2000 where a Detroit-based company called Hi-Po was caught deliberately contaminating rivers with diesel fuel and other toxins with the aim of profiting by providing a clean-up service. If the regulations had not existed, the waste would not have been dumped in the river as a kind of environmental 'protection racket'.

¹⁶ *New York Times*, 13 May 1992.

¹⁷ K. Kummer, *Transboundary Movements of Hazardous Wastes at the Interface between Environment and Trade*, UNEP Environment and Trade Series No. 7 (Geneva: UNEP, 1994), p. 8.

¹⁸ 'Taiwan's Formosa apologises for Cambodia waste', Reuters, 30 December 1998.

World supplies/catches have stalled at about 100 million tonnes owing to the limits of ecosystem productivity and the legacy of past over-exploitation. Currently, about two-thirds of the world's fishing stocks are at, or beyond, their sustainable capacities.¹⁹ Yields have naturally declined under these circumstances, or else managers have acted to close fisheries or severely limit the allowable catches from them. Many fleets therefore face pressure to circumvent these restrictions to ensure adequate profitability or to move into new fisheries. The twin pressures mean that over-exploitation spreads from one stock to the next.

There are few new fishing frontiers. The signing of the UN Convention on the Law of the Sea in 1982 established the 200-mile exclusive economic zone, which led to some 40% of the world's oceans coming under direct regulatory controls of coastal states, and over forty regional fisheries management organizations now exist to regulate extraction in high seas areas. As a result, the misreporting of catches from controlled high seas areas or illegal catches from areas under state control increased.

Subsidies to modern industrial fishing fleets have served to promote massive over-capacity in the sector and to inflate demand for catches. This over-capacity was further extended by state-owned fleets of the former USSR, which proved to be capable of operating well beyond the point of zero economic rent as their costs were not compared to value at point of sale but to producing an equivalent amount of protein in a highly inefficient agricultural sector. In 1989, owing to the excessive number of vessels and government support for overcapitalized industries across the world, total global subsidies and expenditure on fleet support cost \$92 billion while the total value of fish extracted was only \$70 billion.

Superimposed on these general problems may be specific IUU fisheries for high-value premium fish such as the 'white-fleshed' cod family or tuna, or for mammals such as whales. High prices may generate incentives to continue to hunt stocks far beyond the point of diminishing returns. The Soviet whaling fleet, for instance, caught over 88,800 more whales in the 1960s and 1970s than were reported to the Bureau of International Whaling Statistics.

The few remaining relatively pristine stocks of premium fish are probably in the Southern Ocean. The most high-profile IUU fishery issue in recent years has been that for the Patagonian toothfish (*Dissostichus eleginoides*) in that region. Although protected under the 1982 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), stocks of toothfish have been successively plundered across the Convention's territory by a fleet of about seventy reflagged vessels. As regulations begin to be enforced in one area, so IUU operators have moved on, shedding identities and changing flag states as they go. In the peak year of 1997, IUU catches amounted to about 45,000 tonnes (over half of the world supply for the animal) and populations of the toothfish in many areas have fallen below 90% of their original abundance. As a single toothfish may be worth about US\$1000, and decommission programmes have led to a surplus of longliners on the world market, the IUU toothfish fishery continues.

¹⁹ About 44% are currently fully exploited, 16% are over-fished with another 6% depleted or economically extinct and 3% slowly recovering from depletion. Any future increases are predicted to come from aquaculture or from 'fishing down the food chain' which in itself may further limit the availability of larger fish. FAO, *World Review of Fisheries and Aquaculture. Fisheries Resources: Trends in Production, Utilization and Trade* (Rome: FAO, 1999).

Illegal trade in timber

Most countries charge a stumpage tax on forestry operations, based on the volume of timber extracted; these charges are often intended to reflect the value of log at the stump, i.e. its price on the market less the costs of extraction and a reasonable profit margin. There is a strong incentive to alter these charges by under-reporting harvests and under-grading the size and the quality of the timber harvested.

Companies may attempt to maximize their profits by extracting timber outside their agreed harvesting areas. The Cambodian forest sector saw all these problems in the 1990s: in 1997, authorized log production was about 450,000m³, while estimated total harvesting was an order of magnitude higher at 4,300,000 m³.

Logging companies may also inflate reported costs or practise nil-profit accounting to decrease local business charges. Transnational subsidiaries may also 'transfer price' timber shipments by under-selling and under-grading timber shipments to their parent companies; the real value of the goods will then be reaped higher up the corporate chain, often being deposited in tax havens. Transfer pricing on timber sales from Papua New Guinea in the 1980s was estimated at US\$5–10/m³, resulting in losses of up to US\$30 million per year.

In countries with few other resources, the standing capital represented by timber resources may prove an irresistible source of revenue for patronage among those charged with its management. Massive public losses of formal revenues may take place to allow for private gains by ruling elites who control the access to forest resources. For example, in the Cambodian forestry sector in the 1990s, resources worth over US\$500 million returned just US\$15 million to the central treasury (about 3% of real export value). Such anti-rational management can be shown to make sense if private payments to officials are included: about US\$200 million of Cambodia's undeclared revenues during the 1990s entered the country's 'shadow state' and networks of patronage. This, nevertheless, leaves an above-normal profit in forestry operations; it is these rents for which bribes are paid by timber companies. Client forestry industries then liquidate natural resources to generate revenue as fast as possible, assured of powerful political protection enforcement and formal revenue collection. Export restrictions may operate similarly: ruling elites may use them to drive a wedge between domestic customers and more remunerative international markets that can be sidelined by administrative patronage. Again, this was evident in Cambodia in the 1990s.

Illegal loggers may also target specific precious woods including mahogany, rosewood, ramin and teak where supply is greatly outstripped by demand but which nevertheless may be found in off-limits areas like National Parks. Often such illegal harvesting is laundered through legitimate concessions.

4.2 Institutional and regulatory failures

Attempts to implement and enforce the controls in MEAs will only be successful if every state in a management regime effectively implements and enforces agreed controls and if states attempting to free-ride on a treaty are prevented from benefiting from their non-compliance.

Gaps in the implementation and enforcement are a near universal theme of international policy discussion. It is mentioned, for example, in Agenda 21 (Chapter 8), the UNDP and the Global Environment Facility's Capacity Development Initiative, the European Commission's 6th community environmental action programme; ministerial communiqués from the meeting of environment ministers of the Americas in Montreal in March 2001, UNEP's February 2001 Montevideo III Programme, UNEP's February 2001 Guidelines for Compliance and Enforcement in MEAs, and the

G8 Ministers' Statement on Environmental Enforcement, International Cooperation and Public Access to Information in 1997 in Miami, USA.

Countries often sign up to controls but fail to pass adequate laws or assign sufficient funds for their effective implementation. Responsibilities for implementation of controls may be allocated to an agency that is already overloaded with work. Even where 'the rules on the books' are adequate, a basic lack of resources can cripple efforts to control environment crime. Bureaucrats and enforcement agents are often poorly trained, under-resourced and inefficient. Customs, police and other enforcement personnel may not be aware of the problem: customs tend to give a higher priority to other contraband such as drugs and arms while the police tend to focus on predatory offences such as robberies and violence. Enforcement agents 'on the ground' may have to endure hostile conditions or cover large geographical areas.²⁰ In addition, property rights for renewable resources may be unclear or confused, as may be their actual value; the authorities may therefore assign insufficient resources to their protection. Such capacity problems are becoming more evident given the increasing involvement of developing countries in many MEAs.

Penalties themselves are often inadequate and may be treated more as operating costs for unscrupulous entrepreneurs than as a serious deterrent to market entry. Even when deterrent penalties are allowed for in national legislation, they may not be applied by the judiciary, who are generally unaware of environmental crime and its consequences. A lack of awareness and cooperation among prosecutors and investigators may lead to loss of cases through technicalities. Furthermore, costs of enforcement tend to be 'sunk' and are rarely recovered on successful prosecution of offenders.²¹

Hard data on compliance and intelligence about trafficking routes and offences are lacking and, in many cases, are not being actively sought. In addition, as environmental crimes rarely have obvious victims, there is often nobody to complain to the authorities about illegal activities. Environmental crime is nearly always prosecuted by the state: if effective information and feedback on enforcement efforts are lacking, the authorities tend to assume that laws are being obeyed when, in fact, they are being openly flouted. Further, the clear link between investigative effort and the magnitude of problem discovered means that there are few incentives for institutions to look for trouble. Less investigation may automatically reduce the problems discussed! ODS trafficking is a case in point: smuggling was initially uncovered by accident when a customs agent had her car serviced and expressed surprise at the cost. The mechanic explained about the controls being imposed on CFC-12; shortly thereafter, the agent came across a shipment of CFC-12 without any accompanying documentation. Related chains of enquiry eventually led to major smuggling syndicates committing crimes worth hundreds of millions of dollars.

There is also a real question of whether the resources to enforce border controls will ever be enough given the increasing volume of goods and persons in transit. This problem of 'trying to promote legal cross-border economic flows while simultaneously enforcing laws against illegal flows has been an increasingly awkward and delicate task and a growing source of frustration for law enforcement

²⁰ This problem is especially common in fisheries and forestry operations. Data from the EU enforcement of its Common Fisheries Policy show that there are about 50,000 vessels spread across approximately 1×10^6 km² of sea, giving an average of 1 vessel per 20 km². EU enforcement authorities carried out a total of 20,357 inspections in 1990. Hence, the average chance of inspection is once every two years.

²¹ Data from the Brazilian forest sector for 1996 shows that only about 26% of the cost of enforcement actions was actually covered by the fines awarded. See Amigos da Terra, *Forest Management at Loggerheads. 1996 Update Report on Illegal Logging in the Brazilian Amazon* (São Paulo: Amigos da Terra, 1996).

bureaucracies'.²² Data from the US Office of Drug Control in FY 1999, for example, indicate that over 75 million passengers and crew arrived in the US by air, nine million arrived by sea and 395 million crossed land borders using some 200,000 ships, 900,000 aircraft, 153 million trucks, trains, buses and cars, and 16 million cargo containers.²³ London's Heathrow airport sees some 5 million shipments of airfreight, about 0.5 million tonnes, per year.

Non-compliance and free-riding

Signatories to an MEA must transfer the treaty's provisions into domestic law and apply sufficient resources for their effective administration and enforcement. This rarely happens. States often have little incentive (nor any mechanism) to police one another, meaning that implementation is left to national priorities at the expense of the big picture of the global control regime. In the worst cases, non-compliance with, and free riding on, treaty provisions may also undermine a treaty's sound implementation elsewhere. National data reports are often central to assessing compliance with international controls but they are often late, incomplete and 'sanitised'.

CITES

A necessary minimum for the correct implementation of CITES is that national Management and Scientific Authorities should be designated, trade in specimens violating the Convention should be prohibited and penalties and confiscation procedures specified. A large number of parties have been unable to fulfil these simple requirements: a 1994 study of over eighty parties to the Convention found that only one-fifth had adequate legislation for the implementation of CITES, while one-third were wholly inadequate.²⁴ A 2000 report to the Secretariat highlighted that only about 40% of national data submissions were on time while a significant number of parties failed to submit any annual report. The parties have also directly sanctioned several parties for non-compliance, including Bolivia, the Democratic Republic of Congo, Greece, Italy, Thailand and the United Arab Emirates.

CITES has also seen high levels of free-riding by non-signatories. For example, in the ivory market as the majority of the value was added to the product during its carving, so the carving industry tended to settle in the least restrictive conditions. As pressures were imposed to restrict ivory carving factories in Hong Kong, so the industry colonized Macao, then Singapore followed by Taiwan and finally the United Arab Emirates. Once carved, ivory was not subject to CITES procedures and could be relatively freely traded onwards.

Montreal Protocol

A number of former Soviet countries fell out of compliance with the Montreal Protocol because of the technical and administrative problems posed by economic transition. The only serious non-compliant ODS producer to date has been the Russian Federation²⁵, and a loophole in the Protocol (which has since been addressed) allowed the country to produce new material for its own consumption while

²² P. Andreas, 'Contraband capitalism: transnational crime in an era of economic liberalization', paper presented at conference on *International Organized Crime in the Global Century*, 2000, p. 4.

²³ National Drug Control Strategy. *Annual Report* (Washington, DC: The White House, 2000).

²⁴ Including Japan and Russia.

²⁵ Argentina, a much smaller producer, has also recently been in a state of non-compliance, but appears to be moving back into compliance.

exporting large volumes of (ostensibly) recycled and reclaimed ODS into the US and EU that could have satisfied its own domestic demand.

Certain developing countries also seem to have taken advantage of the restrictions on production of ODS being imposed on developed countries to steal market share and even to produce ODS for smuggling back into developed countries. China, for example, produced a volume of halons for its 'basic domestic needs' that was significantly in excess of the world market in developing countries. This excess production would only be economic if it was to be diverted on to developed-country markets after the halon phase-out.

China, India and Russia have not complied with Decision VI/19 of the Protocol requiring the location and capacity of ODS reclamation facilities to be reported, which would have made for more effective cross-checking of the large volumes of recycled and reclaimed material entering the world market.

In contrast to many other MEAs, submission of data reports to the Protocol Secretariat has been timely because of extensive financial support for administrative capacity-building under the Protocol's Multilateral Fund. Nevertheless, surprising discrepancies in quality exist, and figures for world production and consumption of ODS rarely balance.

Basel Convention

A 1996 study of the implementation of the Basel Convention showed that almost a third of its parties were without implementing legislation for the Convention, although most reported it was in the pipeline. Although two-thirds of respondents considered illegal traffic in waste to be a criminal offence, legislation to prevent, punish and mitigate illegal trade was missing in over half of the respondents.²⁶

Data reports are of the lowest quality of any MEA because the absence of an explicit definition of 'hazardousness' means that submissions cover different waste types and use different nomenclature. Only about a quarter of Basel signatories submit routine data reports. Trade data for 1997 for those countries that did submit records show a 10–15% difference between total quantities of hazardous waste reported as exported and those reported as imported.²⁷ Recorded imports from OECD countries to non-OECD countries were at least ten times higher than export data from OECD countries, which raises a substantial question mark over data integrity.

IUU Fishing

RFMOs are routinely undermined by inadequate implementation of treaty measures. The 'freedom of the high seas' means that fisheries regulation is exclusively a matter for the state that granted the ship right to sail under its flag.²⁸ As each flag state impacts on a shared stock of the resource, so the overall level of enforcement is that of the lowest common denominator, which may generate high levels of unreported and illegal fishing. Even if governments nominally agree to cooperate, individual operators may reflag to a non-signatory country and fish without restrictions.

²⁶ And the respondents are likely to be the more diligent countries.

²⁷ Basel Secretariat, 'Hazardous Waste by Numbers', press kit for the 10th Anniversary Meeting of the Basel Convention, Fifth Meeting of the Conference of the Parties, 6–10 December 1999.

²⁸ As the 1982 UN Convention on the Law of the Sea (UNCLOS) states in Article 92(1), 'ships shall sail under the flag of one state only and ... shall be subject to its exclusive jurisdiction on the high seas'.

Some registries are ‘professional’ non-joiners of RFMOs and often franchise out the operation of their registries to extra-territorial companies where enforcement of international norms by these ‘flags of convenience’ (FOC’s) would actually deter business. In 1980, the International Transport Workers’ Federation estimated there were some 11 registries that could be regarded as FOCs; by 1999, this had risen to 27 registries, comprising some 1,400 industrial fishing vessels or about a tenth of the world’s fishing fleet by tonnage.²⁹ Of these 404 are registered in Belize, 393 in Honduras, 214 in Panama and 108 in St Vincent & Grenadines. The main beneficial owners are Taiwanese and EU companies (169 and 168 vessels respectively). Of the European beneficial owners, 116 are Spanish.

With regard to poaching of the Patagonian toothfish, large volumes of the IUU catch by reflagged vessels were landed in states such as Mauritius and Namibia that were not signatories to CCAMLR. Similarly, large volumes of IUU catches from Atlantic tuna have been landed in Belize, Honduras, Panama and Equatorial Guinea in defiance of controls imposed by the International Convention for the Conservation of Atlantic Tuna (ICCAT).

Illegal trade in timber

The absence of agreed international controls on forestry means that national controls are not reciprocated or respected by trading partners. Hence, once illegal timber has left one country, it is impossible to sanction it elsewhere. As a result, although crude calculations suggest that, for example, about 60–70% of the tropical timber imported into the EU may be sourced illegally, importers currently lack either a mechanism or any incentive to identify and impound illegal shipments of timber.³⁰

There are also examples of more obvious free-riding, where the timber industry from one country makes direct territorial incursions across neighbouring borders that may lack adequate surveillance. In one memorable case from 1987, two Malaysian timber companies were reported to have cut a 50km swathe into the Indonesian side of Borneo.³¹

Forestry legislation in producer countries is perhaps the most confused and complex of all environmental controls, often based upon regulations instituted in colonial times that are quite unsuited for controlling modern industrial timber extraction. A 1998 review of Cambodian forest legislation by the legal firm White & Case, for example, found it was ‘difficult to obtain, difficult to analyse, provides few objective standards for forest protection and provides no integrated guidelines or standards for forest management’.³²

Trade reporting is also poor. A 1999 report by the International Tropical Timber Organization: remarked: ‘Production statistics ... are often weak or non-existent. The primary problem in many producer countries is the lack of a comprehensive forest outturn measurement system as well as any kind of regular industrial survey to obtain production figures.’ Consumer countries themselves are

²⁹ International Confederation of Free Trade Unions and Greenpeace International, *Troubled Waters: Fishing, Pollution and FOCs. Major Group Submission for the 1999 CSD Thematic Review: Oceans and Seas*, 1999.

³⁰ *EU Illegal Timber Imports*, EU Forest Watch July/August 2001 special report (compiled by Forests Monitor on behalf of Fern).

³¹ ‘Planning to cut deforestation in Indonesia down to size,’ *Financial Times*, 20 September 1988, p. 40.

³² White & Case, Report to Senior Officials of Royal Government of Cambodia and International Donors, Summary of Recommendations, 1999, p. 1.

usually unable to distinguish the processing of types of timber and ‘many make errors or omissions in providing trade data ... [and] also have serious problems in their customs statistics’.

Legal loopholes and regulatory failures

The *realpolitik* of negotiating and implementing treaties and the way in which institutions divide up problems among themselves, ignoring the bigger picture, often mean that the forces generating or facilitating environmental crimes are not always properly addressed. Regulations imposed by MEAs or their implementing legislation may also contain loopholes that directly facilitate illegal traffic or allow for laundering of contraband.

Trade permitting systems themselves are prone to fraud and if not administered with due care may serve more as a laundering facility than as an effective check on contraband. CITES has perhaps the most complex administrative and permitting system of the various MEAs, which has provided many opportunities to subvert and abuse agreed controls. Mismanagement of the permitting system has sanctioned activities that should not have been allowed under a strict interpretation of the Convention; as a result, there may be little need to smuggle animals directly when permits can be doctored or fraudulently declared to give shipments a false legitimacy. It is a simple matter, for example, to misdeclare lesser-known endangered species, especially if there are many ‘look-alike’ species or if illegally caught specimens can be labelled as ‘captive-bred’. Smuggled derivatives can also be passed off as coming from pre-Convention stockpiles or from non-controlled populations.

The CITES Ivory Trade Quota System, for example, was undermined by both a lack of producer control on the number of trade permits issued and the registration of ‘bad’ stockpiles from illegal sources. The Ivory Trade Review Group’s report in 1989, just before the African elephant was put on Appendix I, estimated that 80% of the ivory permitted to be traded under the system at that time was illegally obtained.

This problem of providing false legitimacy to contraband through inadequately policed licensing systems is also apparent in forestry and fisheries controls. IUU fish from high seas areas under the control of an RFMO are often declared as having been caught elsewhere on the high seas; this, for example, allowed the widespread laundering of Patagonian toothfish from CCAMLR waters. The classic example of laundering in the forest sector is the ‘logged out’ concession that exists only to launder poached logs from elsewhere (such as nearby national parks). In addition, both industries allow for easy laundering of illegal material in secondary processing sectors, as different types of, say, sawnwood and fish fillets appear very similar to the untrained eye.

One obvious weakness in the Montreal Protocol was that it did not provide for a common licensing system in the original agreement. Each party was thus left to try to impose its own trade controls on ODS in an information vacuum. As a result, national permitting systems for transshipments in countries such as the US and the EU were used as a ‘revolving door’ to facilitate laundering of contraband on to domestic markets. One of the first indications of a problem was the large volume of transshipment imports of CFC-12 to EU from Russia and the absurdly large amount of transshipment exports of CFC-12 from the US to tiny Caribbean islands such as the Dutch Antilles.³³ As with a

³³ CFC-12 exports from the US in 1994 and 1995 to the Dutch Antilles (which would have a consumption cap under the Protocol of about 90 tonnes of per year) amounted to about 4,000 tonnes. As US Assistant District Attorney Tom Watts-Fitzgerald commented at the time, this volume of trade would be ‘enough to put a dome over it and cool it until the next century’.

widely used CITES loophole, contraband could also be passed off as originating from pre-existing stockpiles, something which went unmonitored in almost all Article 2 countries. Controlled ODS were also easily mislabelled as other pressurized gases under less trade restrictions such as HCFCs or as falsely recycled, reused and reclaimed material that was allowed to be freely traded under the Protocol.

The Basel Convention's failure to specify a clear definition of hazardous waste allows for easy misdescription of waste shipments. One widely used trick is to upgrade the reported value of a waste shipment to avoid the implication that the material is a liability to be got rid of as soon as possible: shipments are also bogusly described as raw materials or as commercial products such as fertilizer. 'Sham' recycling operations also provide a convenient cover for dumping wastes: for example, waste shipments of supposedly non-hazardous plastics and paper for recycling from both Europe and the US to China have contained high levels of hospital waste including infusion tubes and syringes.³⁴

The Convention's failure to specify clear responsibilities and mechanisms for restitution in cases of suspected dumping means that illegal traders can avoid sanction if they avoid having a legal presence in the country where the waste is dumped.

Breakdown of the state

The workshop focused on a number of cases where civil strife and breakdown of government have created conditions that allow illegal trade to flourish. Beyond simply rendering a government incapable of fulfilling its treaty obligations, ruling elites may actively abet such disorder to preside over massive public losses for their private gain.

Revenues from illegal logging, for example, may exacerbate national and regional conflict. In turn, the state of emergency from such conflicts may allow for the sidelining of formal state revenues which would be impossible in peacetime. Examples include the Thai–Cambodian timber trade funding the genocidal Khmer Rouge; the Democratic Republic of Congo, where the world's largest timber concession (about 33 million hectares) funds the incremental cost of Zimbabwe's standing army in the country; and Liberia, where almost US\$100 million in revenues and direct logs-for-arms swaps help fund Charles Taylor's ambitions of regional destabilization. In each case, this 'conflict timber' has been routinely imported on to Northern markets and is perhaps the most devastating form of environmental crime.

³⁴X. Wang, 'The international control of transboundary illegal shipment of hazardous wastes: a survey of recent cases that happened in China', *Proceedings of the Fourth International Conference on Environmental Compliance and Enforcement, April 22–26 1996*, Vol. II (Chiang Mai, Thailand), p. 679.

5 A joined-up approach to tackling international environmental crime

The workshop explored in depth the various policy options for tackling environmental crime. There was unanimous agreement that both national and international enforcement efforts are currently inadequate as compared with the magnitude of environmental and economic losses imposed by transnational environmental crime. Imaginative national and international enforcement programmes are necessary, and adequate resources need to be made available to enable them to succeed.

Actionable intelligence needs to be collected and disseminated and enforcement targeted at weak points in global commodity chains. Such targeting may involve the use of innovative ‘long-arm’ enforcement methods to assist compliance. Non-compliance by parties and loopholes that facilitate laundering of contraband must also be eliminated.

UNEP’s 2002 ‘Guidelines on Compliance with and Enforcement of MEAs’ also raise many of the suggestions below and propose a series of options to strengthen MEA implementation and enforcement. UNEP is now seeking extra-budgetary resources to run a programme to foster their implementation and use; so far, only the Belgian government has responded.

An emphasis purely on enforcement of existing regulations may ignore (or tacitly condone) the context of the wider system that may generate such opportunities to offend. Thus, in addition to simply improving front-line enforcement, a joined-up approach to tackling international environmental crime must address the supply and demand pressures that shape an illegal market. These are factors that enforcement agents can rarely address themselves, yet they routinely have to deal with the results; therefore, enforcement agents and government officials engage in dialogue to share their experiences to maximize the efficiency of global environmental controls.

5.1 Improving national enforcement

A number of measures could help improve the effectiveness of domestic enforcement programmes. These include:

- a clear national control regime;
- effective national capacity building;
- targeting flagrant violators;
- increasing sanctions and introducing probation penalties;
- improving case processing times;
- encouraging compliance through positive incentives;
- involving supply and processing chains in the enforcement process.

National legislation often needs to be reformed to include clear definitions of illegal activities, establish significant deterrent sanctions and specify enforcement responsibilities at every stage of a commodity chain. Adequate resources must be committed to ensure effective enforcement. In cases where tax evasion occurs, improved enforcement may yield an immediate increase in revenues.

Lack of specialist knowledge and training may be most efficiently addressed by training programmes using a cascade approach of training-the-trainer, followed by refresher courses, and a combination of the appointment of specialist prosecutors to cooperate with investigating officers. Front-line agents

and specialist enforcement personnel should be put into early contact with each other and with their opposite numbers in other countries: regularly updated national and international directories of enforcement expertise may facilitate contact.

Criminal profiling is vital for focused enforcement efforts. Risk analysis involves compiling records on importers and exporters and integrating this with actionable intelligence and enforcement actions to allow for the profiling of contraband, trafficking methods and likely countries of origin. This process is reiterative: seizure and confiscation statistics from subsequent enforcement interventions should then be analysed and the results fed back into the system to adjust profiles.

Clear processes can be set up to allow field observation and intelligence from industry informants, the public and NGOs, to be relayed through appropriate government and enforcement agencies. Established networks of local and international NGOs already exist, and can be further promoted and developed.

Special enforcement units have had a positive record in gathering intelligence, performing market surveillance, pursuing allegations of corruption and prosecuting complex corporate investigations. South Africa's Endangered Species Enforcement Unit is a good example. The Unit was founded by experienced officers from the rangeland crime division who were familiar with the need to penetrate networks, go undercover, gather intelligence and conduct sting operations. Specialist units are likely to be most effective when run on a 'stovepipe' arrangement, in which they are connected into the legal and administrative structure at a level sufficient to bypass regional and local 'regulatory capture'.

The model of bypassing existing bureaucracy can be taken further to create 'super-ministries' such as the Kenyan Wildlife Service, whose broad remit and responsibilities, including almost all aspects of national park management, cooperative wildlife management elsewhere, research, tourism and infrastructure, allows for joined-up policies on wildlife protection. The result is a 24-hour operations room, a host of specialist units, a paid informer pool and a network of honorary wardens to gather intelligence and a highly motivated, well-paid staff.

Dedicated funding is necessary for long-term planning. The Kenyan Wildlife Service, for example, received dedicated funding over a ten-year period, which allowed for targeted investment in compliance programmes and long-term structural reorganization to improve enforcement efficiency.

Multi-agency partnerships may also be necessary. The UK Metropolitan Police's 'Operation Charm' has linked with the Traditional East Asian Medicine community and wildlife conservation NGOs to educate traders and increase public awareness of the endangered species trade through widely publicized enforcement actions, public information packs and new forensic resources. Operation Charm operatives have also been part of a wider UK initiative called the Partnership for Action Against Wildlife Crime (PAW), a 'virtual' enforcement think-tank composed of the UK CITES Management Authority, the Home Office, UK police forces, Customs & Excise and NGOs. Working groups in data management, legislation and policy, DNA and forensic analysis and the media have been established, as has a standing Police Wildlife Liaison Officer Conference. The Partnership has also produced a number of publications including *A Guide for Wildlife Law Enforcement in the UK*, which provides accessible and practical enforcement advice, contacts and a directory of resources.

Whether it is better to have a specialized unit or a multi-agency partnership, or simply to provide general training to all enforcement agents, probably depends on the size of the available resources. Multi-agency partnerships often lack dedicated budgets and tend to be highly dependent on the goodwill of the participants involved. When a small amount of dedicated resources is available, it may

be better to concentrate these resources in a specialist unit to prevent dilution and loss of enthusiasm. Where larger funds are available, it may be possible to integrate environmental crime into the basic curriculum of law enforcement agencies and customs and to take a phased approach to capacity-building through clustering and training-the-trainer programmes.

Use of criminal sanctions and strict liability

The use of criminal sanctions as a deterrent against some of the more serious forms of environmental crime has gained widespread acceptance and has been central to getting more serious resources assigned to tackling environmental crime by law enforcement organizations.

The latter point is important. Penalties not only determine the deterrent effect of legislation but also serve to specify the seriousness with which offences are pursued by enforcement agents. The workshop itself coincided with the launch of a campaign by UK wildlife protection NGOs to increase the upper limit of penalties for wildlife smuggling to five years' imprisonment, which would then make smuggling an arrestable offence under UK law. This would enable more effective targeting and sanction of repeat offenders.

Waste dumping, especially with 'knowing endangerment' – endangering the health of others by knowingly violating environmental laws – tends to command the most serious penalties of between ten and fifteen years in jail. Poaching charismatic animals also routinely attracts criminal penalties as severe as ten years in jail in some range states, although wildlife trafficking outside range states tends to be treated more leniently.

Where there are difficulties with pursuing criminal prosecutions – for example, it may be difficult to prove intent to violate laws or to acquire evidence of guilt to the criminal standard of 'beyond reasonable doubt' – strict liability procedures may prove more effective. These sanction a company or individual for failure to exercise due diligence and operate irrespective of fault or intention.

5.2 Improving international coordination

In addition to the obvious requirement that states should comply fully with an MEA control regime, it is also crucial for the regime itself to provide information that is useful for enforcement personnel. The Montreal Protocol, for example, only instituted a formal international licensing system in its 1997 Montreal Amendment – a decade after controls began.

National intelligence on environmental crimes needs to be collated and disseminated more efficiently to allow for coordinated enforcement actions between jurisdictions. Actionable information is often withheld in order to avoid embarrassing the countries involved or because of the perceived confidentiality of national enforcement processes. Information may be sanitized or sidelined into ritual exchanges at meetings rather than presented in an actionable way.

Workshop participants also called for more international research on international trafficking routes. NGOs may be very valuable partners in this area. Trade Record Analysis of Flora and Fauna in Commerce (TRAFFIC), for example, acts as an occasional independent monitor, clearing-house and international research organization for information on the wildlife trade (and some fisheries and forestry issues). TRAFFIC, which is supported by the IUCN, WWF and others, is the most developed attempt to provide sustained intergovernmental support and intelligence. Other NGOs such as the

Environmental Investigation Agency have also provided extensive investigations into trade routes of particular forms of environmental contraband.

A number of workshop participants suggested that a formal supranational clearing-house for information may improve the transparency and efficiency of national crime-fighting efforts: two suggestions were the much-discussed issue of a World Environment Organization (possibly modelled on the World Trade Organization), or placing a unit under some existing international structure such as UNEP or the International Chamber of Commerce. Other participants emphasised the need to improve existing arrangements and suggested that intelligence-gathering, information exchange, guidance (such as codes of best practice) and training could all be coordinated and delivered more effectively through the good offices of the MEA Secretariats themselves, UNEP and transnational enforcement facilitation organizations such as Interpol and the World Customs Organization. Extensive networks of environmental enforcement practitioners have also been established under the International Network for Environmental Compliance and Enforcement (INECE) and the European Network on the Implementation and Enforcement of Environmental Law (IMPEL). A number of similar regional networks are also being established.

Workshop participants highlighted the fact that two central measures to improve coordination would be the identification and dissemination of single liaison points within all relevant organizations – such as MEA Secretariat enforcement coordinators, or national enforcement coordinators – and the direct involvement of enforcement officials in MEAs themselves in discussions and negotiations.

Directories of enforcement contacts need to be put on the Internet, as should timely and relevant enforcement information; many RFMOs, for example, run web directories of ships that are officially authorized to fish in their waters and also provide a rogue's gallery of IUU vessels.

Formal Memoranda of Understanding (MOU) may help to facilitate and regularize enforcement contacts. The WCO signed MOUs with the CITES Secretariat in 1996 and the Basel Convention Secretariat in 1999. Interpol signed MOUs with the CITES Secretariat in October 1998 and with the Basel Convention Secretariat in 1999. Interpol has had a working party on environmental crime with sub-groups on wildlife crime and hazardous wastes (the latter also covers other forms of pollution, including ODS) for several years, although it has subsequently deprioritized environmental crime as issues such as the 'war on terror' have come to the fore.

There are also a number of relatively simple mechanisms, like Interpol's 'Eco-message' form for reporting or soliciting information on environmental violations involving transboundary collaboration. One proponent of forms mentioned that they often show that apparent first offences are part of larger series of environmental abuses. Apart from being useful for direct enforcement, the ecomessage forms over time will provide information on global trafficking patterns for more detailed risk assessment and enforcement targeting.

International enforcement efforts should be targeted at weak points in the commodity chain – this is especially important for exhaustible commodities such as endangered species, timber and fish, where stock protection is paramount: sanctioning people further down the chain will not avoid environmental damage. Therefore, development assistance may be necessary to help those states that bear the burden of management for the common good. Similarly, capacity-building efforts should be internationally mobile and target resources where they are most needed.

Enforcement responsibilities also need to be clearly apportioned between jurisdictions: for example, the Basel Convention's new Liability Protocol clarifies the liabilities and sanctioning strategies in cases of international waste dumping.

Regional enforcement cooperation agreements that allow for shared jurisdictional competence may help overcome the limitations of partitioning of enforcement responsibilities between separate jurisdictions, especially where cross-border gangs are active and able to take advantage of territorial divisions. Perhaps the most innovative model here is the 1996 Lusaka Agreement on Cooperative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora, which makes extensive provision for shared, cross-border investigations into transnational wildlife poaching gangs in central and eastern Africa. The region's first multinational taskforce was constituted in 1999, with diplomatic status conferred on members to facilitate their work. Europe's Europol police may assume a similar role for policing environmental crimes in that region, although at present, their mandate extends only to atomic and radioactive waste.

Finally, in promoting international cooperation, it is also important to understand the culture and the 'standard operating procedures' of different national and international organizations to ensure a complementary fit between the contributions of different agencies. For example, Interpol passes information amongst its members that often names suspected criminals directly, whereas the WCO does not pass such information between its member agencies.

5.3 New technology

Information integration and synthesis are lacking. As one workshop participant put it, 'we don't know what we know'. Trade record analysis and the integration of data from different national and international authorities with 'drill down' software that checks for irregularities and discrepancies should be central to any form of intelligence-led policing. Simple and cost-effective systems versions of such software now need to be developed explicitly for developing countries. Internet access is often necessary for quick and regularized exchange of enforcement information, but many government departments are not Internet-enabled or else restrict access to high-level officials who may fail to transmit information down the line.

There are many new technologies that can make a big difference to the burden of national and international enforcement. Compliance and inspection methodologies such as Vessel Monitoring Systems and fine-scale satellite monitoring of forestry concessions have the potential to move the marginal benefit curve of monitoring downwards by lowering costs and offering economies of effort on monitoring.

Forensic science could also play a vital role in gathering evidence and identifying illegal materials; for this to be the case, it is important to treat environmental crime scenes much as other crime scenes and allow for detailed investigation. DNA fingerprinting and more traditional skills such as anatomic and morphological biology have proved vital in distinguishing contraband such as shahtoosh and toothfish fillets from look-alike products. DNA test kits can also be made available to enforcement operatives to enable simple point-of-contact tests.

Microtaggant and chemical tracers, barcodes, radio frequency identification (RF/ID) tags and transponders may allow real-time inventory and monitoring of shipments. Some of these tracking techniques, especially UV-dye or transponder tracing, have also been used to track contraband in undercover operations and detect where such materials are laundered into legitimate commerce.

However, despite the enormous potential of new technology, systems will only be invented if policy needs for their use are clearly identified. Given that barcoding and central registry are routinely used to track sale of merchandise in high-street shops, its international use for much more valuable items such as tropical logs should not be considered so unusual. The fact that technological developments currently precede policy rather than being driven by it gives some indication of the skewed international perspective. International centres of excellence in developing new enforcement methodologies and environmental forensics should be developed to assist this process.

5.4 Compliance assurance

As non-compliance and inadequate implementation of MEA provisions are, perhaps, the biggest facilitators of environmental crime, thus, measures need to be written into environmental treaties to encourage compliance.

First, there is a significant need to increase the transparency of national reporting in many MEAs to allow assessment of how effectively treaty measures are being incorporated. This, of course, is a sensitive area, as states tend to be innately opposed to passing over any of their sovereignty to an external or international body. To address this INECE's Environmental Compliance and Enforcement Indicators project has begun to develop diagnostic tools to assess the quality of implementation and enforcement practice in partner countries to this.

Secondly, there needs to be a way to reward compliance and deter non-compliance. In many cases, the reward will be an improved environment. However, if states bear very different costs and see quite different benefits from any proposed measure (as in almost all real cases), the political will for implementation and compliance will vary widely. States with high costs and low benefits may well downgrade their implementation efforts, and this may result in significant costs elsewhere, for example, by allowing laundering of contraband.

Thus, it is necessary that compliance procedures allow for the independent assessment of problems and for their amelioration. Such measures should provide an opportunity for amicable settlement and assistance with capacity-building. In particular, states getting the benefits of control measures should be compensating those bearing the costs. Environmental issues are also underpinned by major equity issues between North and South. The North's greater financial resources, technical capacity and contribution to past and/or present pollution may oblige it to play a leadership role, and bear the lion's share of the costs, in tackling global environmental change – the concept of 'common but differentiated responsibility'. The Multilateral Fund of the Montreal Protocol is perhaps the best example of success here – contributions from Article 2 Parties amounted to about US\$1.3 billion at the end of 2001.

CITES has seen the most developments in terms of compliance assistance; not least because of the relatively flawed nature of its Appendix II listing procedure, which leaves range states operating national controls independently without international assistance. In the absence of information to the contrary (and bearing in the mind the minimal information on species' status within most developing countries), exporting-country institutions made non-detriment findings for exports relatively freely. Developed-country authorities have then had no reason to refuse an import. Thus, despite having the effect of moving around a lot of papers and occupying lots of bureaucratic time, trade in most species under CITES has been relatively unrestricted.

The review of significant trade imposed under Article 4 of the Convention has partially addressed this problem by providing expert advice on species status through its periodic review of heavily traded species. The process then enlists consumer states in observing global trade quotas, which also relieve range states of the burden of making non-detriment findings on a case-by-case basis. The 1992 US Exotic Wild Bird Conservation Act introduced the concept of ‘reverse listing’, meaning that a species is protected unless it can be proved that trade will neither deplete the species nor harm the welfare of individuals in trade. The EU’s new wildlife control legislation system has altered the standard operating procedures of the Convention to require an import quota for any shipment of Appendix II species into Europe, thereby, requiring harder evidence that a given export will not have a harmful effect on the population of the species in question.

In addition, the CITES Secretariat now runs a Legislation and Compliance Unit, where legal and enforcement professionals provide real-time enforcement assistance to the parties and assessment of national compliance efforts. Activities include a rolling programme of assessing national legislation, issuing CITES Alerts to member states detailing actionable intelligence, cross-examination of permits and certificates, information outreach and national missions for needs assessment or information verification.

Measures to deter persistent non-cooperation and free-riding are also needed, especially for treaties where non-compliant states will directly benefit from the efforts of others – as with a global pollution externality or with a shared stock of a resource.

A number of the major RFMOs run schemes to detect and sanction reflagged vessels that may be free-riding on catch controls. These mostly involve a register of non-contracting party vessels sighted in controlled waters, which face direct inspection if they put into the ports of contracting parties. Landings or transshipments from such offenders are banned unless the vessel can prove that controlled species on board were not caught in the regulatory area. In addition, some RFMOs also impose trade sanctions on non-compliant states on the basis that they could not be landing and exporting certain fish products unless they were dealing in IUU fish caught from the controlled area.

Trade measures have proved an essential component in addressing non-compliant states. CITES, for example, has seen action under Article 14(1), which allows parties to undertake stricter domestic measures than are formally required under the Convention to allow for targeted trade sanctions on non-compliant states including Bolivia, the United Arab Emirates (twice), Thailand, Italy, Greece and the Democratic Republic of Congo. Sanctioned parties must then agree a compliance plan with the Secretariat or a deputation of other parties in return for a phased withdrawal of sanctions.

Parties have also imposed trade controls on non-members to prevent them from free-riding on the treaty and to encourage wide buy-in to MEA measures. Perhaps the most significant example here was the Montreal Protocol’s trade restrictions on ODS and ODS-containing products under Article 4. Although castigated as ‘trade war by environmental decree’ by some developing countries, Article 4 – in conjunction with the Multilateral Fund – has helped drive the near global ratification of the Protocol. The Protocol was also one of the first treaties to include a specific non-compliance procedure – although slow to address Russian non-compliance, the model has been successful in expediting reporting requirements and promoting open dialogue and has since been widely copied.

It is worth noting that in almost all cases, non-compliance procedures still remain the creatures of the national parties – no MEA has delegated direct sanctioning authority to an extra-territorial body. Such measures rely almost uniformly on a decision by the parties to an MEA.

Trade measures have also been used – albeit controversially – to impose conditions on states undermining the spirit, if not the letter, of an MEA. The most famous example is perhaps the US imposition of trade sanctions on Taiwan in August 1994 under the Pelly Amendment to the Magnuson Fisheries Act. Taiwan cannot legally accede to membership of CITES because of Chinese non-acceptance of its UN membership, and although the country used CITES-equivalent documentation in its formal wildlife trade procedures, it had failed to ban the sale of contraband such as tiger bones and rhino horn domestically. Taiwan almost immediately amended its law and launched a crackdown on medicinal products containing endangered species. Similarly, the threat of a US trade embargo under the Pelly Amendment caused Japan to withdraw its reservation filed on the Appendix I listing of sea turtles in August 1994, although Japan had a legal right to file this reservation.

Conditionality on development assistance has also been used to generate domestic impetus for policy reform. This is not always an extraneous linkage of issues: proper management of natural capital such as the forest sector may be vital for state revenue and macroeconomic stability in disparate developing countries. This strategy is something of a high-risk poker game but it may be one of the few ways to deal with regulatory capture often seen in the forest sector. The activities currently taking place under the World Bank-funded Forestry Reform Project in Cambodia provide a useful model, not least because of the establishment of a Forest Crime Monitoring Unit involving an independent monitor – the development and anti-corruption NGO Global Witness – to increase the monitoring system’s transparency and credibility.

5.5 ‘Long-arm’ enforcement

Extra-territorial and reciprocal enforcement legislation that may allow for the effective sanctioning of environmental criminals outside the boundaries of a single nation-state was discussed at a number of points in the workshop. Some of the best examples have arisen from efforts by certain states to sanction beneficial owners of reflagged fishing vessels and thus, to deter their nationals from free-riding on fisheries agreements to which the state is party. In March 1998, the Norwegian government, for example, imposed the requirement that all Norwegian-registered companies or vessels operating in waters ‘outside the jurisdiction of any state’ must obtain a one-year registration. Removal from the register, ‘for contravening conservation or management measures laid down by regional or sub-regional agreements’, also invalidates access to all quotas in domestic or cooperative fisheries.

US Lacey Act Amendments of 1981 contain a different sort of long-arm measure which makes it unlawful to ‘import, export, sell, acquire, or purchase fish, wildlife or plants taken, possessed or sold in violation of State or foreign law’ in the US. Thus, it provides for extra-territorial action, but instead of making it an offence to violate US national law elsewhere, the Act allows for laws violated elsewhere to be prosecuted in the US. Such ‘reciprocal enforcement’ measures may form the basis of future enforcement cooperation on issues such as forestry and fisheries as well as wildlife.

Money laundering legislation may also provide for long-range sanctions on environmental criminals; as one participant put it, finance may be the ‘soft underbelly’ of trafficking organizations. The chief obstacle, however, is the collateral damage to licit finance. Nevertheless, the stricter controls in money transfers as part of the war on terrorism may provide for significant new controls in this area.

In common law legal systems, tort law may also be an important extra-territorial measure. Torts are injuries or ‘wrongs’ that are prosecuted in a civil court by private action – thus, the problem of relying on the state to enforce environmental crime may be partially circumvented as victims may claim redress directly from those who have wronged them. Claims and sanctions can proceed even in the

defendant's absence, provided that the malfeasant has material assets in the jurisdiction of prosecution. Legal precedents also exist to sanction companies or individuals for double standards in their international behaviour or where liability has curtailed because of a lack of a significant presence in a country where an offence was committed. One of the most famous examples is the sanctioning of the UK-owned Thor Chemicals in London over its notoriously lax procedures in its South African mercury recycling plant, which caused widespread local pollution that may have killed three plant workers in 1992.

Some environmental crime issues may also be inseparable from human rights abuses, especially with place-based operations that directly impact on the health and well-being of local populations. This may activate a host of other mechanisms to sanction offences. Similarly, natural resources that are used to fund conflict – as with Liberian or Congolese conflict timber – are an issue for international security and may see the UN Security Council make direct interventions to restrict trade and impound assets. That said, such sanctions need effective targeting and implementation mechanisms if they are to be more than symbolic.

Plunder of natural resources during conflict may also constitute a war crime under the definitions laid out in the Nuremberg Trials. This may open other avenues for international sanctions to be imposed on those trafficking in those resources at the expense of their real owners.

5.7 Addressing supply and demand for contraband

Enforcement may remove people from an illegal marketplace and deter entry but it does nothing to address the supply and demand pressures that create the illegal market-place to start with. For example, by the time a smuggler has been caught with a tiger skin, it is already too late for that particular animal. Even when deterrent legislation involves the death penalty (as it does for poaching pandas in China), illegal activities may continue, driven by very different perceptions of risk and different time horizons between regulators and regulated.

Addressing illegal demand

ODS crime is the one area in which demand will eventually disappear of its own accord. In all other areas, public education is needed, as are programmes to substitute demand for legal alternatives and/or through direct interventions in the marketplace such as subsidies or buy-outs.

There is, of course, a danger in eliminating demand for products such as endangered species or tropical timber because the opportunity costs of preserving those resources may be relatively high. Hence, it may be important to channel demand into legal (and sustainable) production to provide an incentive for conservation. Supply-side policies therefore need to increase sustainable supplies for such markets. For endangered species, farming, ranching and captive breeding programmes – allied to 'sustainable use' policies of making market access conditional on good husbandry – have helped ease pressure on wild populations.

Many of CITES' greatest conservation successes have come from harnessing international markets to generate income for species protection - as have some of its greatest failures - sustainable leather supplies from ranches eliminated poaching from wild populations; live shearing of vicuñas has encouraged campesino farmers to invest in the animal's protection rather than shoot it because it was a competitor to domestic alpacas and llamas. Vicuñas are now being reintroduced across extensive parts of their old range. Similarly, sport-hunting quotas for leopards turned the animals from

a livestock-eating liability into an asset. Conversely, this pro-trade logic also led to some of the CITES community's greatest embarrassments. In the 1980s, an institutionally entrenched dogma of a sustainable ivory trade aided widespread laundering of contraband and halved African elephant populations.

The success of such efforts depends on the degree to which demand can be channelled to support a legal, controlled market and the extent to which consumers can be educated to use selective purchasing to discriminate against contraband. These topics are discussed in separate sections below.

Unlike many other instances of international environmental crime, the problem of illegal trade in ODS will, in due course, solve itself, as all ODS-using equipment is eventually replaced by new machinery using non-ozone-damaging replacement chemicals – though, at current rates, not before significant further damage to the ozone layer is caused. The replacement process can be accelerated, however, by applying use controls in particular sectors, and instituting ODS sales bans, stockpile bans, and/or import bans (for recycled and/or virgin material because there was no independent verification of the real origin of the material) in industrialized countries. This implies additional costs to industry as equipment is retired before the end of its working life, but is probably the easiest option to implement and enforce.

There is no demand for hazardous wastes to be reduced unless a waste stream contains valuable secondary elements that it may be profitable to recycle. There may be an incentive to export wastes from countries with high costs of disposal to those with lower costs, due to population density, land and labour prices, air quality etc. Only far-reaching measures, such as the Basel 'Ban Amendment' – which will prohibit all export of hazardous wastes destined for final disposal from Annex VII countries (OECD, EC and Liechtenstein) to non-Annex VII countries – will change this state of affairs. The Amendment, when ratified, may therefore increase the incentive for illegal trade, though at the same time, by reducing overall volumes, it should make concealment more difficult and detection easier.

A number of OECD countries have suggested that exports from the North to the South could have been restricted more easily under the right for any country to ban imports unilaterally. However, many developing countries – which were the main proponents of the ban – felt that they lacked the capacity to police such provisions and that the emphasis on exports in the Amendment places the responsibility more directly on the OECD, which has the greatest capacity to monitor trade.

Public education and professional due diligence

The general public and industry should be encouraged in a 'duty of care' culture and their help enlisted in detecting and eliminating contraband. The wildlife protection NGO WildAid, for example, launched a very successful series of public advertisements and short films to create awareness about the impacts of the wildlife trade among consumers in Asia who are traditionally thought of as uninterested in such issues. A major campaign targeting the ethical and health aspects of eating sharkfin soup, for example, saw a 50–70% decrease in demand in some markets.

Public education should also go hand-in-hand with an emphasis on solving poverty that drives crime. Wildaid has also done extensive work through its 'Surviving Together' campaign to foster the legitimacy of protected areas with their local residents and to ensure that resources devoted to conservation serve to enrich rather than deprive local communities by providing alternative employment programmes.

A duty of care culture can also be fostered through ‘soft’ regulatory mechanisms such as due diligence schemes – often used in the antiques trade – which may assist formal liaison between traders and law enforcement. Similarly, professional ethics can be encouraged. Operation Charm, for example, has enlisted leading members of the UK TEAM community to declare their resolve not to buy endangered species and encourages participating pharmacies to display a sticker in their window and provide related information.

Due diligence may be reflected in industry certification procedures such as adherence to International Standards Organization programmes like the ISO 14000 standards or the European Eco-Management and Audit Scheme which classify an organization or company in terms of its ability to manage all aspects of its business in an environmentally sound manner.

Lateral thinking is also necessary to engage insurance companies and banks to require them to assess the legality of operations as part of their financial due diligence procedures. Investors, banks and export credit agencies that have funded illegal activities or activities without due diligence could perhaps be targeted by money laundering or proceeds of crime legislation: this approach may be particularly appropriate to the forestry sector where high rates of non-performing loans are often seen because investments are given with minimal oversight. Due diligence procedures imposed by insurance companies concerned over potential clean-up liabilities have been one of the major drivers in ensuring compliance with US Superfund hazardous waste legislation.

Certification systems and conditional market access

Attempts to order global supply chains to prevent laundering of contraband or the loss of environmental bads, or to harness demand for exhaustible commodities to direct resources to conservation all require accurate chain-of-custody tracking systems for accounting and inventory control. Market access should be made conditional on goods possessing adequate detail of their legal status. An example may be the Catch Documentation Scheme launched by CCAMLR to identify legal catches of toothfish; although some jurisdictions have been slow to deny their markets to undocumented toothfish, a price difference between documented and undocumented catches is now clearly evident in the world market.

Both timber and fisheries lack any existing systems that focus on legality of material alone but both sectors do see market-driven labelling schemes such as the Forest Stewardship Council and the Marine Stewardship Council which identify *sustainability* of production, and this should imply legality as well.

Legality certification requires an effective means of both issuing and verifying the licences or certificates, implying separate systems for administration and monitoring. Such systems will require significant investment in new monitoring capacity as the commodity chain provided by articles such as shipping waybills lacks adequate information. Such procedures may involve the use of tagging, bar-coding or transponder technologies and registers of approved traders and processing facilities. Currently, there are no generic legality certification tools, although some chain-of-custody standards such as an ISO 9000 mark exist. When the Swedish flat-packed furniture giant IKEA wanted to make sure that all its timber was legally sourced, it had to go out and develop its own systems to this end.

There must also be a legal framework, which allows material lacking a valid licence to be seized at the border, or when put on sale. Action by customs and other enforcement agencies in consumer/importer countries, for example, will depend on the development of a mechanism for detecting illegal products, and, in many countries, new legislation making it illegal for products produced illegally overseas to be

imported or put on sale. This is a particular problem for areas of criminal activity where a global MEA is not in existence (such as fishing or logging), and there may be a case for the negotiation of global agreements on illegal activity (possibly starting at a smaller, regional, scale). In April 2002, the UK and Indonesian governments signed a joint MOU on Cooperation to Improve Forest Law Enforcement and Governance and to Combat Illegal Logging and the International Trade in Illegally Logged Timber and Wood Products. This begins the process of collaboration on policing trade between a tropical timber producer and consumer, which may serve as a framework for future cooperative efforts between other parties. Consumers, retailers and importers of the products need to be educated to look for and demand the licence or certificate, and to refuse products which lack it. Central and local government procurement programmes can also play an important role in leading these markets and rewarding compliance.

For industrial commodities such as timber and fish, private transnational industrial surveillance companies can also be used to monitor trade flows, with the additional advantage that they will lose a lucrative contract if irregularities are demonstrated. The surveillance company SGS, for example, has been called in to monitor customs departments and to increase revenue collection from the forest sector in Cameroon, Ghana, Indonesia and Malaysia.

Trade tracking may also involve a considerable expansion of the WCO's Harmonized System of customs coding, which has, so far, failed to keep up with an ever-expanding body of environmental controls: new forms of generic classification of materials as 'environmentally controlled' may be appropriate.

Addressing illegal supply

The supply of contraband can be adjusted by market intervention, such as subsidizing alternatives, and altering the management structures or property rights that govern resource access. Supply businesses need to be given incentives to comply with international controls: monopoly and cartel arrangements may play an important role in ensuring that those already in the market-place have a vested interest in keeping competitors out. Supplies of look-alike commodities also need to be addressed to prevent laundering: trade controls may be central components in such strategies.

In a number of cases, it has been possible to launch a direct buy-out of production capacity to eliminate potential sources of illegal supply. For ODS trafficking, this solution has been highly desirable, as it has served to reduce legitimate pollution by developing countries as well. In March 1999, the Protocol's Multilateral Fund agreed a US\$150 million programme to help finance China's CFC production phase-out over the next ten years; a US\$60 million programme to reduce halon production began in 1998. In November 1999, the Fund Executive Committee adopted a similar package, worth US\$82 million, for the Indian CFC sector. A special World Bank initiative raised money to phase out Russian production by the end of 2000.

Surplus capacity in the forest and fisheries sector can be addressed by similar means. Much illegal logging stems from over-allocation of logging concessions and processing licences, frequently associated with corruption. In the Indonesian forestry sector, for example, processing capacity is almost double the size of legal supply. Conditionality on forest-sector reform for aid disbursement has now begun to move from getting 'laws on the books' to addressing such issues.

Government subsidies for the fishing industry have resulted in massive over-capacity. As mentioned earlier, taking fish out of the seas cost the world money by the end of the 1980s. Subsidies fell to \$54 billion in 1992, and possibly as low as \$14 billion in 1997, as a result the general deregulatory drive in

many Northern economies and the collapse of the Soviet Union, which was previously one of the biggest source of subsidies. However, there are obvious political problems involved in reducing payments in some countries where fishing is the main source of employment in disaffected and isolated coastal communities. Nevertheless, the downward trend must be maintained.

Decommissioning programmes should genuinely remove capacity and not simply encourage fishermen to move elsewhere (often to where controls are not yet in place) or create a surplus of very cheap, old boats at the bottom end of the world market. The IUU fishery for Patagonian toothfish has been exacerbated by the use of cheap longliners decommissioned from national tuna fleets that, when impounded, are often worth less than the hold full of toothfish that they contain. These are then put back on the market by the confiscating authorities, and so the vicious circle is completed.

Removing surplus capacity has also been very important given that IUU fishing is probably one of the hardest areas in which to address access controls directly, given the freedom of the high seas and the difficulty in detecting illegal activity in the first place. Port state controls to reduce landing and transshipment of IUU fisheries products, allied to ‘smart’ trade sanctions on other non-cooperative landing destinations may be an effective model for access restrictions internationally. Limited national experiments have also begun to privatize some fisheries through Individual Transferable Quotas, which make the right to catch fish the private property of licence holders. These appear to have generally increased compliance with control measures in some fisheries, as they minimize shared stock externalities and mean that fishermen are more likely to reap the benefits of self-restraint.

Supply of hazardous waste can be addressed by providing incentives and subsidies for clean production and waste minimization technologies. Although many of these developments will not happen quickly, less sophisticated techniques (e.g. household separation of waste) are available and can have a substantial impact in terms of immediate reductions of waste volumes. Particular types of hazardous waste – e.g. chlorinated solvents – can be targeted for rapid reduction (note the success of the Montreal Protocol). Countries have adopted a variety of innovative economic instruments to this end such as taxes on precursors to discourage production, or more sophisticated deposit and refund systems. Given the rapid growth in overall volumes of waste, this is an area that undoubtedly requires greater attention.

5.8 Lessons from other international control regimes

The workshop also discussed lessons from the global narcotics control regime that were relevant for discussions in tackling environmental contraband.

Smugglers have been enormously creative in trafficking drugs; there is no reason to imagine they would be less so for environmental contraband. Sheer ignorance is also on their side. Simply increasing border inspection may not, therefore, be effective. Because so much contraband is mixed in with legal commerce, more and faster-moving international commerce will make the job of criminals progressively easier. Moreover corruption of enforcement agents and the judiciary is frequent and leads to erosion of the rule of law.

On the other hand, whereas the latent capacity is enormous for narcotics production it is often more constrained for most environmental crimes. The implication here is that while drug-traffickers can afford to throw tons of product into the commerce stream knowing much will be seized, this is probably somewhat less true for endangered species products. However, for products such as hazardous waste, it is only necessary to lose the material in the web of global trade.

Use of supply-side controls in isolation has failed. Prices and purity at the street level are generally at historical lows, and new areas, such as amphetamine-type stimulants, are booming. Instead efforts are increasingly focused on the control of precursor chemicals, tableting machines, and other legal inputs into narcotics manufacture. Efforts to decrease demand by providing cheap or otherwise attractive substitutes have proved more promising. Thus, demand-side strategies may be more effective than pure interdiction-based strategies in reducing environmental crime.

It was suggested that it would be helpful to know much more about the various transborder smuggling operations and how illegal monies are laundered: as with drugs, finance issues may provide more leverage than a straightforward focus on enforcement or supply controls.

Joined-up international control systems are also being negotiated for other commodities such as the Kimberley Process to remove 'conflict diamonds'. The issues underlying this problem are very similar to those involved in tackling environmental contraband: access to the world diamond market is to be regulated through a system of licensing, in order to exclude conflict diamonds. The Kimberley system of diamond certification includes producer and consumer measures such as verifiable licensing of extraction, purchase certification and routeing all transactions through national diamond offices to allow for a single point of control to cross-check national shipments. Consumer states agree to confiscate diamonds that lack this certification. The Kimberley Secretariat is attempting to agree a rolling programme of compliance and needs assessment missions in member states to ensure effective implementation of such controls. The structure of the international diamond market may help controls, given that De Beers controls almost 70% of the world's rough diamond trade and uses its role as market leader to artificially limit supply and keep prices high. It therefore has an incentive to eliminate price externalities from illicit sources of supply.

This process of lesson learning, of course, is not all one way. National and international narcotics control policies, for example, are far less imaginative than efforts to tackle environmental crime.

6 Priorities for action

The final session of the workshop saw participants discussing their own priorities for action arising as a result of the meeting and drawing some general conclusions on the way forward.

The extent of a black market is largely determined by the discrepancy between supply and demand of a product, the consistency of the objectives of the controller and those controlled, and the method of implementation of an international exchange of goods. There was general agreement that these factors should, therefore, be controlled to minimize overall levels of environment harm. Enforcement of existing laws may not be enough; it is also necessary to adjust supply and demand pressures that shape environmental black markets.

Environmental crime is economic crime where the exchange of goods is consensual, so there are rarely victims to complain of offences. This means that the state bears the burden of enforcement. It was suggested, therefore, that environmental treaties should contain comprehensive review procedures to provide feedback to policy-makers on compliance with, and the impact of, international controls. Relevant data may include the price dynamics of controlled commodities, volume and values of licit and illicit markets, gaps in commodity data between trading partners, stockpiling data, registration details and capacities of processing and treatment centres, levels of offences committed in contravention of relevant governing legislation, enforcement strategies and effort levels and national implementation of MEA commitments.

Traffic in controlled commodities should be made 'conditional' on the provision of adequate data that it falls within the boundaries specified by international agreements. The burden on the state as the direct sole manager of resources should be lessened through efficiently managing resource externalities in the collective interest and/or through individual or collective privatization, in which the resources are given to the owner who most values the resource. Further, some participants mentioned that the victims of both crime and heavy-handed compliance techniques such as trade restrictions are most often local communities rather than middlemen, and that placing management of resources in the hands of local collectives may be an effective way to address both problems of poverty and compliance with controls.

Participants also sought clarification of the relationship between MEAs and the WTO, which could speed the elaboration and development of appropriate international controls.

Such measures imply levels of international cooperation considerably in advance of those currently existing. They may also involve building institutions that are not simply the creatures of their constituent governments (or to governments yielding some of their sovereign authority). A central part of these processes should be direct access to enforcement experts at MEA meetings and at drafting sessions for control measures. There is also a strong case for setting up a specialist unit on enforcement and compliance within each relevant MEA to institutionalize such expertise and allow better anticipation and shaping of controls. Such measures may also serve to depoliticize the enforcement process.

Some participants suggested that international intelligence gathering could be facilitated by a dedicated unit under UNEP, Interpol or elsewhere that could collate and analyse information from a wide range of sources and then assist national enforcement units in targeted enforcement actions.

Lessons from flaws and omissions noticed in first-generation environmental trade control agreements should now inform second-generation agreements. Controls should be engineered into environmental agreements in a precautionary manner, rather than continuing the current ‘wait and see’ attitude. Insights into how ODS smuggling was exacerbated by negligible controls on supplies and by a lack of market information have helped shape global controls for other commodities with negative consumption externalities under the 1998 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the 2001 Stockholm Convention on Persistent Organic Pollutants (POPs). It may be easier simply to buy out world production of commodities such as POPs, where the consumption externality has a global impact, rather than to impose elaborate trade tracking measures.

In all cases, clear and effective national legislation detailing enforcement responsibilities and deterrent sanctions for crimes is necessary, as are transparent and effective international non-compliance measures to discourage free-riders while encouraging countries to share their problems openly. The need to focus on transit countries and the laundering of transshipments was also raised.

The development assistance community should be involved in efforts to tackle crime, with potential conditionality on assistance properly linked to the domestic constituency for change in target countries. Donors should also seek to grow civil society and developing-country NGOs to allow for an independent capacity to monitor government reforms.

In terms of targeting resources, it was clear that resources are not currently allocated with due regard for impacts: developing countries may bear disproportionate enforcement burdens in most environmental treaties. Capacity-building efforts should adopt a cascade approach of ‘training the trainers’ to maximize their efficiency. If only limited amounts of money are available, it may be most effective to set up specialist units and create a culture of empowerment and excellence. With larger funds, mainstreaming environmental compliance into basic training for enforcement agents may be possible. Better use of existing technologies and forensics, and the development of new enforcement tools, should be promoted to improve efficiency of policing.

The UNEP Guidelines form a useful model for the international actions necessary to facilitate improved compliance and enforcement. They now need a rigorous review process and should become a standing agenda item on the Governing Council. Broadening the Global Environment Facility to allow funding of compliance programmes for regulatory MEAs would provide a major new avenue of financial assistance to this end. There is also a clear need to advance models of regional cooperation such as the Lusaka Agreement. Clustering of MEAs by UNEP may allow relevant lessons to be learned more effectively, provided that an additional level of bureaucracy is not simply imposed on existing agreements. Clustering would also allow more effective regional studies of implementation as well as shared training workshops and similar activities.

Participants agreed that there was considerable scope for long-arm enforcement legislation to allow extra-territorial actions to enforce controls outside traditional territorial boundaries, especially with regard to proceeds of crime and money laundering legislation. Subsidies and financial systems that may drive crime should also be addressed. The links between environmental crime, human rights abuses and security issues may provide new avenues for enforcement and international cooperation against environmental abuses.

Public education efforts should be significantly increased to create a ‘duty-of-care’ culture in environmental management. There is a need for international controls to be seen as justified and in everyone’s best interests. An understanding of environmental crime as a crime against development –

i.e. as an opportunity forgone – rather than just perceiving it as entrepreneurship is important here. Developing-country participants at the workshop almost unanimously pointed to education and public awareness as the single most important approach to tackling environmental crime. The international publicity on crimes against children may provide a model to follow.

Everyone agreed that there is no single, painless solution to all international environmental crime. Nonetheless, it is hoped that the workshop highlighted elements of a more joined-up approach to the policing of the international market-place for environmental goods, and that it will encourage a more dynamic understanding of the shifting web of opportunities and policies to be adjusted to minimize global levels of non-compliance with environmental controls.

Appendix 1: Workshop Agenda

International Environmental Crime: The Nature and Control of Environmental Black Markets Expert Workshop 27–28 May 2002

Monday 27 May

OVERVIEW AND BACKGROUND

CHAIR: Professor Victor Bulmer-Thomas (RIIA)

0900 Introduction

What do we mean by environmental black markets? How does international environmental crime compare with other types of international crime? What sums are involved, in terms of environmental damage, foregone revenue and expenditure on enforcement? Brief survey of scale of the problem; introduction to the aims of the workshop.

Duncan Brack, RIIA

Gavin Hayman, RIIA

0945 Who are the international environmental criminals?

Are international environmental criminals specialists who turn to crime or criminals who turn to environment-related opportunities? Involvement and scale of organized crime. Intersection with legitimate business. Distinction between legal and illegal activities.

Debbie Banks, Environmental Investigation Agency

Crawford Allan, Traffic International

Jason Lowther, Wolverhampton University

Stefano Ciafani, Legambiente

CHAIR: Roy Watkinson (UK Environment Agency)

1130 The drivers behind black markets

What are the factors which create the black markets in particular instances of international environmental crime? What data are available in each case? Analysis, deriving lessons for solutions – looking at regulations creating cost differentials and instances of regulatory and/or enforcement failure.

Duncan Brack, RIIA (ODS)

Patty Jackson, US EPA (Waste)

Ros Reeve (Wildlife)

David Agnew, Imperial College (Fisheries)

ENFORCEMENT AND REGULATORY SOLUTIONS

Given the factors which create black markets, what are the most cost-effective solutions in controlling and terminating them? Analysis of options in particular instances of international environmental crime, with examples of success, drawing lessons for other areas.

CHAIR: Richard Emory (US EPA/OECD)

1345 Solutions: prevention

Where the supply of and/or demand for products entering illegal trade can be affected, through controlling or eliminating sources of supply; through developing alternative (legal) sources; through providing substitutes; and through public education and awareness: examples of success and applicability to other areas.

Fran Lowe, UK Environment Agency (waste)

Andy Fisher, Metropolitan Police (wildlife)

David Omotosho, Federal Ministry of Environment, Nigeria (ODS)

CHAIR: Duncan Brack (RIIA)

1530 Solutions: tracking, detection and border controls

How can the illegal products be most effectively detected and tracked? How can legal products be identified? Experiences with and roles for certification, labelling, chain-of-custody tracking, novel enforcement methodologies (e.g. DNA fingerprinting, microchipping, satellite imaging, etc): implications for regulation and enforcement.

Mike Penders, Environment Protection International (technology)

Gert van der Merwe, Endangered Species Protection Unit, South Africa (wildlife)

Guy Clarke, UK Customs & Excise (customs)

Janusz Kozakiewicz, Industrial Chemistry Research Institute, Poland (customs codes)

Sofia Ryder, Forestry Stewardship Council (logging)

Antoine de la Rochefordiere, SGS (logging/general surveillance)

Richard Emory, US EPA/OECD (chemicals)

1715 End of first day

Tuesday 28 May

LINKAGES AND CONTRASTS

Examples and lessons from other areas of international crime.

CHAIR: Roy Watkinson (UK Environment Agency)

0900 **Linkages and contrasts**

Examples of other areas of international crime, such as narcotics; cigarettes; diamonds; antiquities; linkages with environmental crime; linkages between environmental crime and conflict; lessons to be learned for combating environmental crime; relevance and usefulness of international agreements on anti-corruption and money laundering.

Kal Raustiala, University of California Los Angeles (Narcotics)

Clive Wright, UK Foreign & Commonwealth Office (Diamonds)

Frank Madsen (Money laundering)

Filippo del Gatto, Remblah-ODI (Linkages)

Jay Austin, ELI (International criminal law)

ENFORCEMENT AND REGULATORY SOLUTIONS (continued)

CHAIR: Duncan Brack (RIIA)

1115 **Solutions: international regulation and cooperation**

The design and implementation of international agreements, including data reporting; non-compliance mechanisms; implications for new MEAs; experiences of collaboration between international agencies, including customs, police, UNEP and MEA secretariats; international networks; priorities for international institutions and for private sector and NGO involvement; capacity-building initiatives.

Bill Clark, Dept of Law Enforcement, Israel (Interpol)

John Sellar, CITES Secretariat (CITES)

Gilbert Bankobeza, Ozone Secretariat (Montreal Protocol)

Elizabeth Mrema, UNEP (UNEP Guidelines)

Richard Emory, US EPA/OECD (INECE)

Musa Lyimo, Lusaka Agreement Task Force (Regional cooperation)

Daniel Owen, Fenners Chambers (Fisheries)

CHAIR: Roy Watkinson (UK Environment Agency)

1400 **Solutions: national regulation and cooperation**

How to overcome problems with lack of resources or with inappropriate use of existing resources, and with a lack of political will. Structures of incentives, regulations and penalties. Experience of collaboration between national agencies (environment ministries and agencies, customs, police, judiciary). Value of specialized enforcement units. The

importance of property rights reform and local and national capacity-building (including governments, local communities, NGOs).

Patrick Alley, Global Witness (logging)

Jiri Hlavacek, Czech Environment Ministry (ODS)

Steve Galster, WildAid (Wildlife)

Francis Nkako, Kenya Wildlife Service (Wildlife)

CONCLUSIONS AND AREAS FOR ACTION

Conclusions; what are the priorities for action and how can they be taken forward?

CHAIR: Duncan Brack (RIIA)

1615 General conclusions and next steps: how best can the debate be taken forward?

What are the priorities for action? What are the best forums in which to raise the issue – including G8 and WSSD. Contributions from all participants.

Ludwig Kraemer, European Commission (introduction to EU priorities)

All participants

1800 End of workshop