Chapter 4

Licensing and trade controls for environmentally sensitive goods

In this chapter we assess of the role of licensing schemes in addressing illegal trade in environmentally sensitive goods. The experience of licensing systems is reviewed for six agreements: the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), the EU's Forest Law Enforcement, Governance and Trade Initiative, the Catch Documentation Scheme for Patagonian toothfish of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), the Rotterdam Convention on chemicals, the Montreal Protocol on ozone-depleting substances, and the Basel Convention on hazardous waste.

Introduction

The previous chapter has drawn upon data from licensing schemes which, when used in conjunction with other data sources, can be used to obtain an indication of the extent of illegal trade for different resources and commodities. This chapter aims at better understanding of the role of licensing schemes in addressing illegal trade in environmentally sensitive goods. Licensing can be a pre-condition for regulating trade.

The experience of licensing systems is reviewed for six agreements: the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), the EU's Forest Law Enforcement, Governance and Trade Initiative (FLEGT), the Catch Documentation Scheme for Patagonian toothfish of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), the Rotterdam Convention on chemicals, the Montreal Protocol on ozone-depleting substances, and the Basel Convention on hazardous waste.

Regulating international trade is critical to reducing illegal activities related to environmentally sensitive goods, or "international environmental crime". In illegal trade in wildlife, timber, fish, chemicals and waste, criminal activities are often driven by the large profits that can be earned in exporting to foreign markets. Overseas markets may offer higher returns than local markets, particularly for illegal products, which are generally cheaper than their legal counterparts.

In some cases, demand for these products may exist only from foreign buyers – e.g. some wildlife species used for traditional East Asian medicine (see Felbab-Brown, 2011). In other cases, differences in levels of regulation or law enforcement may mean that costs can be reduced through exporting substances abroad – e.g. where it is more costly to dispose of waste or chemicals in the home country compared with foreign countries.

However, it can be exceedingly costly to identify shipments of illegal products. Since the 1950s goods have been increasingly transported via containers stacked on transport ships. Over the last two decades, global container trade is estimated to have grown at an average annual rate of about 10%. The share of containerised trade in the world's dry cargo shipping increased from about 5% in 1980 to about 25% in 2008 (UNCTAD, 2009). Today, approximately 90% of world-wide non-bulk cargo (i.e. excluding commodities such as iron ore, coal and grain) moves by containers; in 2005, a total of

18 million containers made over 200 million trips (Ebeling, 2009). The Australian CITES Management Authority (CMA) has undertaken a number of physical inspections of containers, at ports around Australia since 2006, prior to allowing timber to be imported. However, this is not the general practice, the contents of containers in transit being only rarely inspected by the relevant authorities in most countries.

Clearly, the growth both in the volume of international trade and in the practice of containerisation renders it more difficult to detect illegal trade. Customs authorities almost always carry inspections of imported freight shipments on a targeted risk-management basis, where information or suspicions suggest that there may be fraud or theft involved.² There are also a number of security-related initiatives (in addition to systematic checking) that contribute to the ability to detect illegal goods in trade. However, in most countries only 1-2% of imported freight shipments are inspected. In addition, for most of the products considered in this paper, legal trade exists alongside illegal trade (unlike in narcotics), and distinguishing legal from illegal goods is often very difficult.

The most common way of identifying goods for customs officers is through customs codes, which are designed and applied primarily to facilitate international trade, including the calculation of duty payments, and for the collection, comparison and analysis of trade statistics. The vast majority of countries now use the Harmonised Commodity Description and Coding System (Harmonised System, or HS, for short) administered by the World Customs Organisation (WCO). Code containing two, four or six digits are assigned to each product or group of products subject to trade; in the HS, more than 5 000 codes are currently provided at the 6-digit level across 96 chapters.

However, as has been noted in Chapter 3, the HS system is currently of limited relevance to the control of illegal trade. The coding system is fairly complex; mistakes in allocating codes are frequently made even where there is no deliberate intent to mislead. More importantly, most of the codes cover several different products (e.g. groups of ozone-depleting substances (ODS) rather than individual chemicals; types of animal or plant rather than specific species), and lack the "granularity" required for close monitoring. This is not really surprising: they were not designed for the purpose of allowing close monitoring of the trade in individual products. The further elaboration of HS codes could prove of use in many cases, and there is an ongoing dialogue among MEA Secretariats, the FAO, the ITTO and similar bodies and the WCO on this issue

Moreover, licensing systems should not be used as a blanket approach. While licensing systems may be warranted for countries where governance and enforcement is ineffective, it is unnecessary for countries where the

legislative and regulatory frameworks are effective. In the case of trade of timber and timber products, imposing further trade controls through licensing schemes for countries where the level of risk for illegal harvesting assessed is negligible is unduly burdensome and costly. Such requirements can unintentionally stem the trade of legal forest products. It is necessary to take stock of the many useful measures and institutions already in place to deal with this issue. In particular, it is important to be mindful of multiple and competing legislative and regulatory approaches to addressing illegal logging. Harmonization of existing regimes may be more effective than the introduction of new controls.

Overview of licensing systems

The common solution developed to regulate trade in all of the product areas examined in this paper – wildlife, timber, fish, chemicals, waste and diamonds – has been the development of licensing systems (or permit or certification systems; the terms tend to be used interchangeably). Legal products are licensed as acceptable, and only licensed products are permitted to enter trade; these systems therefore offer a targeted way of allowing importing countries to distinguish between legal and illegal products, and exclude the latter from their market. This helps to create protected markets where legal (and sometimes sustainable) products can avoid being undercut by cheaper illegal (or unsustainable) material. The effectiveness of each system varies according to circumstances, as discussed below.

Over the last thirty or more years, this type of system has become increasingly common in multilateral environmental agreements (MEAs) and other agreements dealing with traded products. Licensing schemes operate in many areas including:

- Wildlife: the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- Timber: the EU's Forest Law Enforcement, Governance and Trade (FLEGT) licensing system for legal timber (currently being constructed).
- Fish: catch document or catch certification schemes, including in particular the Convention on the Conservation of Antarctic Marine Living Resources Catch Document Scheme (CCAMLR CDS).
- Chemicals: the Rotterdam Convention and, for ozone-depleting substances (ODS), the Montreal Protocol.
- Hazardous waste: the Basel Convention.

In the cases of CITES and the Basel and Rotterdam Conventions, illegal trade was not the main motivation for the introduction of the licensing system. However, the effectiveness of CITES and the Basel Convention are undermined by illegal trade. This is likely to be true of the Rotterdam Convention in due course. For the Montreal Protocol, and the timber and fisheries agreements examined here, illegal trade was the main reason for the introduction of licensing systems.

Licensing schemes are designed to enable enforcement agencies to distinguish between desirable and undesirable products – between, for example, legal and illegal timber, or between permitted and banned chemicals. Without the license, there is usually no other way to distinguish between legal and illegal products, which are often physically identical, or difficult to identify. ODS, for example, which are shipped in pressurised containers, can generally only be distinguished from each other by laboratory analysis. Normal shipping documentation (manifests, customs declarations, etc.) may not contain the necessary information on the origins and characteristics of the products or may be fraudulent. The license is the tool needed at the point of import, and in some cases also at the point of export, to allow customs agents to do their job. However, imports of forest products harvested in countries that are assessed and recognized as having a uniform, negligible risk of illegal logging, should be considered legal forest products.

Licensing systems can also be used to regulate the total volume of trade, production or consumption. When combined with quotas, licenses can be issued only up to the quota allowed for production, export or import. This is always the case for the Montreal Protocol, which sets maximum allowable production and consumption levels for ODS, and for the CCAMLR catch document scheme, which is used in conjunction with a set total allowable catch. It is sometimes the case under CITES, where range states may restrict the volume of export permits for particular wildlife species. In other case, however, the issue of licenses is not restricted in this way; they are used purely to distinguish legal or desirable products, which are awarded licenses, from illegal or undesirable products.

Where can licensing systems be most effective?

Clearly, the effectiveness of licensing systems (and trade controls more broadly) in reducing environmental crime is related to the extent of international trade in the products in question. Where the problem is wholly trade-related, trade controls have the greatest possibility of working effectively. Examples include the export of hazardous waste or chemicals from industrialised to developing countries to avoid stricter regulations, or to pay lower disposal costs, and the export of wildlife to meet consumer demand in other countries which does not exist domestically.

Where the problem is only partially trade-related, trade controls can have a significant impact but may not completely solve the problem. Examples

include most cases of timber, fish and wildlife, where demand exists in both domestic and external markets. In such cases trade controls may divert products to domestic markets. Where licensing systems are used to help create protected markets in consumer countries in which legal (or sustainable) products can avoid being undercut by cheaper illegal (or unsustainable) equivalents, the end result is higher rates of return for the exports, and therefore encouragement, for legal (or sustainable) activities. For instance, it is anticipated that the new EU timber regulation, which will prohibit the importation of (cheaper) illegally harvested timber and timber products, will potentially increase prices obtained for verified legal timber. Timber licensed by the relevant authorities in partner countries (those that have signed FLEGT voluntary partnership agreements (VPAs) with the EU) will be considered to have been legally harvested.

There can, however, also be indirect effects of putting in place structures for controlling trade; in some cases they can have a positive impact on governance more broadly, thus reinforcing other efforts to reduce environmental crime. This is seen most clearly in the FLEGT VPAs, which explicitly combine improvements in governance with the introduction of a licensing scheme for legal timber.

For trade in areas wherein some products may be desirable and others not – e.g., hazardous chemicals – domestic regulation is used to control consumption and use. However, in some circumstances it may be administratively easier to use trade controls, such as licensing systems, as an imperfect proxy for domestic regulation. Trade controls can be applied to a more limited range of actors (importing and exporting companies), and at a more limited set of locations (ports and other entry and exit points) than would be required for domestic regulation. This is particularly true where the controls incorporate requirements for prior notification, which offers a relatively simple way to control imports.

Rather than using a licensing scheme to distinguish between products at the level of the product stream, another option would be a complete ban on trade with high-risk countries, those where a large proportion of the products in question are thought to be illegal. However, this is problematic in many respects. The definition of "high-risk" and the determination of which countries would fall into the category would be highly contentious. Exports of legal products would, of course, be banned along with illegal products, introducing perverse incentives. Illegal products could be trans-shipped via lower risk countries, disguising their origin and "laundering" them into international trade. And finally, discriminating in this way between similar products from different countries could be subject to a challenge under WTO rules. For all these reasons, bans have in practice been limited to cases of

non-membership of or non-compliance with an MEA, or in special cases, such as trade involving countries subject to UN sanctions.

Another option is to make the import of products illegally produced in foreign countries illegal. In general, with a few exceptions, in most countries it is not unlawful to handle products produced illegally in other countries. In the United States, the Lacey Act has been used to target illegal wildlife and fish, and it was extended to timber in 2008. The Lacey Act makes the import, sale or possession of wildlife, fish or timber illegally produced in foreign countries unlawful in the United States. It is therefore not a trade control as such, but an element of domestic criminal law. The Lacey Act is generally regarded as an effective piece of legislation for the domestic control of wildlife and fish (Kuruc, 1993). Several other countries have incorporated Lacey-type provisions in their fisheries laws, and the extension of this type of legislation was recommended for all port states by the High Seas Task Force, a group of fisheries ministers and international NGOs, in 2006 (High Seas Task Force, 2006).

It is still too soon to assess the impact of the Lacey Act with regard to timber, though the first enforcement action took place in November 2009. The American Gibson Guitar Corporation is under investigation by for violations of the Lacey Act related to the use of Madagascar rosewood imported from India. Suspicions arose because of inconsistencies in the customs forms (see Innes, 2010).

The new EU timber regulation, adopted by the Council of Ministers on 11 October 2010, also prohibits the importation of illegally harvested timber and timber products. The regulation is designed to provide the underpinning for the FLEGT licensing system; it applies to all timber imports, including those from countries not participating in the licensing system, and also to domestic EU products. It requires timber operators (producers and importers) who first place timber products on the EU market to introduce systems of due diligence designed to minimise their chances of handling illegal timber. FLEGT-licensed timber will automatically qualify without any further checks.

While the Lacey Act leaves it up to operators to work out what steps to take to avoid handling illegal timber, the EU's timber regulation goes into some detail on precisely what timber operators need to do to avoid handling illegal products. Both of them are likely to have the effect of encouraging the uptake of means for distinguishing legal from illegal timber, for example FLEGT licenses, in the European context, or private-sector sustainability certification and legality verification schemes.³

It remains to be seen how effective each of these options will be in excluding imports of illegal timber, though, as noted, the Lacey Act has a good record in the US with respect to wildlife and fish. Compared with licensing

systems, however, the Lacey Act lacks the identification mechanism that is inherent to the presence of the license, and in the European context FLEGT licences are likely to cover only a small proportion of the trade.

Licensing systems and WTO rules

Do licensing systems conflict with WTO rules? Although some of the systems analysed here have been in operation for many years, there has never been a GATT or WTO dispute involving any of them.⁴ Moreover, it seems unlikely that any of the licensing systems examined in this paper would ever be challenged under the WTO's dispute settlement process. Countries enter into licensing systems, or the MEAs that establish them, or both, on a voluntary basis; they agree to these trade controls as a means of achieving the aims of the agreement. It seems unlikely that a country would file a WTO challenge, on the basis of impairment of trade, against a measure to which it had itself agreed. In cases of dispute between parties to an MEA, each agreement possesses dispute-resolution systems that offer more suitable forums in which to settle an issue.

The argument is different, of course, where trade measures are taken against non-parties, or non-complying parties; all the MEAs described here forbid trade in the products controlled by the agreement in these circumstances. In most cases, this has been an important element in encouraging participation in the agreements, and in ensuring compliance with their requirements.

There is an extensive literature on the relationship between MEA trade measures and the WTO agreements, revolving around the questions of whether the MEA measures breach WTO rules and whether, if so, they could be saved by the application of GATT's "general exceptions" clause, Article XX. More generally, there is a debate as to whether the WTO agreements or the MEAs should be considered to "trump" one another. No consensus has yet been reached on these issues. But they are not arguments primarily about the licensing schemes themselves, so they are not considered further here. In any case, it is important to remember that even the application of MEA trade measures against non-parties has never led to a WTO dispute. The next six sections look at individual licensing schemes in more detail.

Licensing systems for wildlife - CITES

The 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (sometimes referred to as the Washington Convention, but more commonly known as CITES) aims to protect endangered species from over-exploitation by controlling international trade, under a system of import and export permits. It currently has 175 parties.⁵

Species are placed on different lists: Appendix I includes all species that are threatened with extinction; Appendix II includes species that are not necessarily threatened with extinction now but may become so unless trade in such species is subject to strict regulation; and Appendix III includes species that an individual party identifies as being subject to regulation for the purposes of preventing or restricting exploitation, and where it needs the cooperation of other parties in controlling trade.⁶

Amendments to Appendices I and II are implemented by the Conference of the Parties, while the parties themselves can place species on Appendix III. Countries may enter a reservation to CITES for a specific listed species, either upon becoming a party to CITES or upon an amendment to the appendix by the Conference of the Parties.

Trade in any species under any appendix is not permitted except in accordance with CITES. The degree of control exercised over trade varies with the appendix on which the species is placed, but in all cases export permits cannot be issued if the specimen was obtained in contravention of the exporting state's laws.

- For Appendix I species, trade cannot be detrimental to the survival of the species and must not be for primarily commercial purposes. In effect, this is a "black list" of species for which trade is very strictly limited. Any trade in listed specimens must obtain both export and import permits, and certificates are also required for the re-export of specimens.
- Commercial trade in Appendix II specimens is allowed if it is not detrimental to the survival of the species. This is a "grey list" of species for which trade is permitted under certain conditions (which may include quotas). An export permit is required, and must be provided to the importing state's customs authorities. Unlike Appendix I species, an import permit is not required (though some parties, including the EU and Australia, apply stricter measures, including a requirement for import permits, to many Appendix II species).
- Trade in Appendix III specimens requires the management authority of the
 exporting state to issue an export permit. Importers must verify that the
 shipment is accompanied by an export permit if it originates from a state
 which has listed that species on Appendix III, or a certificate of origin if
 from another state.

Exceptions from these requirements are made for the transit or transshipment of species; specimens that are personal or household effects; specimens that were acquired prior to CITES applying to the specimen; noncommercial trade between scientists or scientific institutions; or certain specimens that are part of a travelling zoo, circus or other travelling exhibition. In order to implement the Convention, parties must designate one or more management authorities, who administer the licensing system, and one or more scientific authorities, to advise them on the effects of trade on the status of the species. The former should only issue permits on the basis of the so-called "non-detriment" findings (which include, at least in theory, evidence of legal origin) by the latter.

The permit system 7

The general requirements for export and import permits are laid down in the Convention itself, but successive resolutions of the Conference of the Parties have elaborated them in some detail. The main requirements are:

- The restriction of issuing authorities to national CITES management authorities.
- A separate permit or certificate for each consignment of specimens.
- A maximum validity of six months for export permits and re-export certificates and twelve months for import permits.
- The use of security stamps cancelled by an authorised signature and a stamp or seal, preferably embossed.
- The restriction of authorised signatures to those notified by parties to the Secretariat.
- The restriction of permit and certificate numbers to fourteen digits, to assist tracking and reporting.
- The recommended use of security paper for trade in wildlife specimens of exceptional value.
- The statement, on permits and certificates, of both the source of specimens (e.g. wild-caught, captive-bred, ranched or artificially propagated) and the purpose of the transaction (e.g. commercial, scientific or educational).
- The use of standard nomenclature adopted by CITES for names of species and specific numbers of specimens or units of measurement.

Permit fraud and inattention to these requirements by management authorities have proved to be a problem. To counter this, in 2001 the CITES Secretariat issued additional advice on permits and certificates (which indicates some of the problems encountered) by notification to parties:

• That traders be encouraged to apply for permits and certificates shortly before the time of export, not at the beginning of a year or harvest season, or at a time when annual export quotas are established (the fact that traders often apply for permits before they have actually acquired the specimens often leads to quite wide variations between the number traded and the number covered by permits).

- That quantities to be exported are exact (permits and certificates are commonly issued with quantities in round figures).
- That no replacement permit is issued until the original permit or certificate is returned to the issuing authority.
- That, if a trader claims that the quantities actually exported were smaller than authorised, the original document should be inspected and proof of the number exported should be obtained.
- That document and shipment inspections should be conducted at the time of export, particularly for live animal shipments.
- That the original copy of a permit or certificate be collected by customs or other border control authorities of the importing country, endorsed to show completion of the trade and forwarded to the management authority.

The permit system is overseen by the CITES Secretariat, but closer monitoring is carried out by the World Conservation Monitoring Centre (WCMC), once an NGO and now part of UNEP, which receives annual reports from CITES parties on import and export permits issued. As noted, there are often variations between the number of specimens traded and the number covered by permits. The discrepancies should, however, be picked up through reports from the importers, who usually (though not always) report on the basis of actual trade. An export permit does contain a box for customs to fill in indicating how many specimens are actually included in the consignment, but this system only works in a handful of countries. The Australian CMA, for example, has a system in place to record the actual quantities imported and exported compared to the quantities authorised for trade. The WCMC also provides assistance to parties experiencing difficulty in operating permit systems. 9

Effectiveness

No species listed under the CITES appendices has ever become extinct. In general, CITES possesses an effective non-compliance system, enabling action to be taken against non-complying parties, and has achieved many successes in regulating the international trade in wildlife. However, challenges to the effective implementation of CITES remain.

In circumstances in which export and import permits effectively acquire value, there will be incentives for fraud, theft and corruption in issuing them, or tampering while in use (such as by changing the numbers of specimens covered). Falsification of CITES permits is a problem, particularly for high-value products such as caviar. Theft and sale of blank documents similarly undermines this and other systems. In theory, for an export permit to be issued, the management authority of the exporting state must be satisfied that the specimen was not obtained in contravention of the state's laws for the

protection of fauna and flora. In practice, however, this is not always observed, thanks to a lack of capacity, or to corruption.

A second challenge relates to the cross-checking of the documents. UNEP-WCMC monitors CITES trade, receiving annual reports from the parties and, in many cases, copies of all import and export permits issued. Although strictly speaking it is not part of the WCMC's remit to investigate illegal trade, simple inspection of the permits sometimes reveals fraud. Countries wishing to know more about the validity of particular permits need to talk directly to each other; the CITES Secretariat maintains a list of all management authorities and their contact details on its website. Yet, in common with other MEAs, CITES lacks a comprehensive and independent system of monitoring and verifying the issuance and use of permits.

Interest is being expressed, however, in developing electronic permit systems, which should reduce the possibilities of fraud and tampering, improve communications between management authorities, and facilitate the permitting system. In 2005, the CITES parties established a working group to explore the use of information technology and electronic systems, and in 2009 the management authorities of Switzerland and the UK began a pilot project to test electronic export permits; in fact several other parties (an estimated 30% of the total) are now developing and implementing such systems (CITES World 2009). A toolkit for common formats, protocols and standards was published by the CITES Secretariat and working group in January 2010¹⁰, and work is ongoing with UNEP-WCMC to develop a mechanism to facilitate the electronic exchange of information between management authorities. Progress was discussed at the March 2010 CITES conference of the parties, where the toolkit was welcomed, and parties were encouraged to adopt electronic systems; promotional and capacity-building exercises will be undertaken.

Specimens could also be marked, for example with indelible ink, tags, rings or microchips, to assist with identification and tracking; examples are the universal tagging system for crocodile skins, the implantation of microchips into live animals, and the universal labelling system for caviar. Nevertheless, the majority of wildlife in trade is still unmarked, and controls still rest on the use of permits.

The third key challenge lies in the cross-checking of the documents against what is actually in the shipment. As noted, only a tiny fraction of the huge volume of goods, including animals and plants, in international trade can ever be physically inspected. Even when a particular shipment is inspected, the authorities may not necessarily realise when it contains one or more of the 34 000 or so species listed in the CITES appendices, particularly if the shipment is accompanied by misleading documentation.

A further challenge is a simple lack of capacity in the many countries with insufficient numbers of adequately trained and paid staff. Basic equipment, including computers and identification manuals, may be lacking. The design of permits tends to vary slightly from country to country, and they may be printed in unfamiliar languages. Simple errors in issuing and monitoring permits may be just as much a problem as deliberate fraud and forgery. Delays in issuing permits may lead traders to try to trade without them

Even in developed countries it is clear that the CITES permit system can be subject to abuse. An analysis of imports of mahogany into the United States in 1997–98¹¹ estimated that at least 25% of sawnwood imports (worth more than USD 17 million a year) was illegal; the figure did not include trade unreported to U.S. Customs and the true magnitude was therefore likely to be higher (Blundell, 2000). The United States subsequently put in place a series of measures to improve its monitoring of CITES permits.

The question of the validity of export permits arose in the UK in 2002 with regard to exports of big-leaf mahogany from Brazil. The species was then listed under Appendix III of CITES (at the 2002 Conference of the Parties it was placed under Appendix II), and in 2001 the Brazilian government ordered a complete ban on logging and export. Nevertheless, shipments continued to be exported to Europe and North America in the first few months of 2002. Shipments reaching the United States, Canada and a number of EU countries, including Germany, the Netherlands and Belgium, were seized by the authorities pending further enquiries.

In March 2002, the European Commission issued advice to EU management authorities that they should not accept imports of Brazilian mahogany since reasonable doubt existed over their legality. Subsequent to this a court case was brought by Greenpeace against the UK government, revolving around the question of whether export permits had been validly issued and under what circumstances the authorities in the importing state would be justified in delaying the shipments and requiring further information on the validity of their export permits. Greenpeace lost its judicial review in the Court of Appeal. In a ruling issued on 25 July 2002, two of the three judges concluded that to allow importing countries to query the validity of export permits, even when some doubt existed over their validity, would introduce too great a level of uncertainty into international commerce. The third judge, however, dissented, accepting the argument that the survival of endangered species should take a higher priority.

CITES resolution Conf. 10.2, adopted in June 1997, agreed that parties should "not authorise the import of any specimen if they have reason to believe that it was not legally acquired in the country of origin". The court's

decision would seem to run counter to this conclusion, though the phrase "reason to believe" is of course inevitably somewhat ambiguous.

Licensing system for timber - FLEGT

Relative to wildlife, timber and timber products (including plywood and engineered products such as panels, flooring, doors, window-frames, furniture, pulp and paper) is a major commodity in international trade, worth over USD 600 billion in 2008 (Pepke, 2010). Attempts to regulate the timber trade, for example to exclude illegal timber, therefore face the problem of possible disruption to a major legal activity. There was increased international attention focussing on the topic of illegal logging during the late 1990s, with the increasing evidence of its economic and social impacts – in terms of lost revenue and links to corruption and armed conflict – as well as its environmental effects. In particular, the inclusion of illegal logging as one element of the 1998-2002 G8 Action Programme on Forests helped to trigger widespread international discussions on the issue.

There are a number of international organisations covering at least some aspects of forest management. For instance, the International Tropical Timber Organization (ITTO), which administers the International Tropical Timber Agreement, sets a variety of soft norms and guidelines for tropical forest management and trade, gathers and disseminates data and information, and provides some capacity-building and research assistance to Producer countries. The appendices to CITES list about twenty timber species, but most of them are not traded in significant quantities, and the vast majority of timber species in international trade are not listed. The Convention on Biological Diversity administers a Forest Programme of Work that encompasses both conservation and many aspects of sustainable use. The U.N. Framework Convention on Climate Change also deals with forests in the context of the Reducing Emissions from Deforestation and Forest Degradation (REDD+) initiative. With the exception of CITES, all of these Convention secretariats, plus many other international organizations (FAO, World Bank, etc.) have come together in the "Collaborative Partnership on Forests", established to provide support for the objectives of the United Nations Forum on Forests (UNFF). While non-binding the UNFF is the only international organisation solely focused on policy around sustainable forestry. It has universal membership and takes a holistic view of forests. The UNFF originally evolved out of the Rio Earth Summit in 1992, where leaders could not agree on whether to negotiate a forestry convention. Instead they agreed to the Forest Principles, a non-binding set of ideals covering all types of forests. In 2007 the UNFF adopted the Non-Legally Binding Instrument (NLBI) on All Types of Forests on sustainable forest management. The NLBI mechanism includes clauses on legality, however it is voluntary mechanism without guidance on

how aspirations are to be implemented or any monitoring and enforcement. In 2015, the UNFF is set to review the NLBI measure.

In 2003, the EU published its Action Plan for Forest Law Enforcement, Governance and Trade (FLEGT), the most ambitious set of measures adopted by any consumer country or bloc to date. The Action Plan includes:

- The negotiation of FLEGT VPAs with timber-producing countries. These include provisions for a licensing system designed to identify legal products and license them for import to the EU (unlicensed products will be denied entry), combined with capacity-building assistance to partner countries to set up the licensing scheme, improve enforcement and, where necessary, reform their laws.
- Consideration of additional legislative options to prohibit the import of illegal timber to the EU more broadly, particularly products originating from countries not participating in partnership agreements and therefore not covered by the licensing scheme. This led in due course to the new EU timber regulation mentioned above.
- Encouragement for voluntary industry initiatives, and government procurement policy, to limit purchases to legal sources.
- Encouragement for financial institutions to scrutinise flows of finance to the forestry industry.

At the core of the FLEGT approach are the bilateral VPAs with timber-exporting nations. Within the EU, the regulation to introduce the requirement for licensed products from VPA countries was adopted in December 2005. The first three VPAs were agreed with Ghana in September 2008, the Republic of the Congo in March 2009 and Cameroon in October 2010. Negotiations are, at the time of writing, under way with the Central African Republic, Gabon, Liberia and Malaysia; many other countries, particularly in Africa and South East Asia, have expressed an interest in entering negotiations.

In May 2011 the EU and Indonesia concluded negotiations on a timber licensing scheme under a Voluntary Partnership Agreement (VPA) which will stem the flow of illegal timber entering the European market from Indonesia. The VPA with Indonesia is the first the EU has concluded with an Asian country. The licensing scheme will cover a trade estimated to be worth US\$ 1 billion annually. Once the VPA is operational, Indonesia will only permit the export of timber licensed from a national timber legality assurance system. The EU customs will prevent any unlicensed Indonesian products from entering the EU.

The licensing system

Because there is no international agreement on forests or the international timber trade, all measures adopted against illegal logging at an international level rest on definitions of what is legal in the country of harvest of the timber. However, in some countries, forest law is not always clear, and laws agreed by national governments sometimes conflict with those adopted by regional or local governments. Even where the laws are clear, it is important to determine which laws are relevant to the consideration of "illegal logging". Those relating to timber harvesting, for example, or the payment of royalties or export duties, are clearly relevant, but laws regulating the working conditions of truckers transporting the timber, for instance, may be more tangential. Under the VPA process, in Cameroon and Indonesia, multistakeholder processes have agreed operational definitions of "illegal logging", and in Ghana and the Republic of the Congo the VPAs both contain commitments to legal reforms, clarifying relevant legislation.

In each country, the VPA will define the scope of the applicable legislation, which is expected to include laws relating to:

- Rights allocation processes and access rights.
- Company registration requirements.
- Social obligations, including labour requirements.
- Rights of local communities and indigenous populations.
- Environmental safeguards, forest management, timber harvesting, processing operations and associated financial and fiscal obligations.
- Transport and commercialisation of timber.

For each requirement, the VPA will list criteria, indicators and concrete verifiers – such as the documents operators need to produce in order to prove compliance – that will form the basis for enforcement. In many ways, this approach resembles the voluntary forest certification schemes (such as those of the Forest Stewardship Council, FSC, or the Programme for the Endorsement of Forest Certification, PEFC), with the important difference that it applies nationwide and is developed though a multi-stakeholder dialogue.

The FLEGT licenses will be issued by a designated licensing authority in the partner country based on proof of legality provided by the timber operator. The VPAs will include provisions allowing the timber to be tracked through the supply chain. The partner country's timber tracking system obviously cannot extend outside its borders to cover timber produced elsewhere, which may be imported into the partner country and then exported to the EU. However, under the VPA, the FLEGT license will indicate the country of harvest of the product, and partner countries will be prohibited from issuing licenses to products that include timber that has been illegally produced in any other

country. The draft Cameroon VPA restricts imports to products that already have a FLEGT or "other authorised" license (Cameroon is a major transit point for timber from many West African countries); and in both Cameroon and the Republic of the Congo mills will be required to use only legal timber, whether domestic or imported. How easily such provisions will be implemented in practice remains to be seen.

To ensure the system's integrity, the VPAs will contain provisions for independent third-party monitoring of the functioning of the system – considered by the European Commission and others to be an important element of the VPA, and one largely lacking in other licensing systems. The VPAs will set out the terms of reference for the monitoring organisations, and the extent to which their findings will be made public. Should major compliance problems arise, they will be discussed in the agreement's joint oversight committee, which comprises representatives of both the partner country and the EU. The ultimate sanction, should the system fail, would be suspension of the agreement, which either party can do.

The licensing system will only apply to timber products exported from the VPA partner countries to the EU; there is no requirement for FLEGT licences for products imported to the EU from other countries, even if these were originally produced in partner countries (for example, timber produced in Ghana, processed in China and then exported to the EU would not need to show a licence at the EU border). All the partner countries which have agreed VPAs so far, however, intend to license all their timber exports regardless of destination, so the system may begin to spread beyond the direct trade between the partner countries and the EU.

The inclusion of capacity-building support for the establishment of the licensing system, and for improving governance and enforcement, was always intended to be an important part of the VPAs. Although funding for the operation of the licensing system will have to be provided by the partner country – though of course the process is designed to reduce the level of illegal behaviour and thereby increase tax revenues – it was always recognised that in most cases the EU would need to provide assistance with its establishment. This is not formally part of the VPAs, but is being agreed alongside.

Illegal logging can be seen, at base, as a failure of governance or law enforcement. The legal and regulatory regime that should control timber exploitation may be inadequately designed, poorly enforced, undermined by corruption, or all three. Although the licensing system established by the VPAs is designed mainly to exclude illegal timber from the EU market, the FLEGT initiative may also have long-lasting effects on forest governance in the

partner countries. 15 Both the VPAs so far agreed will include:

- An analysis of existing legislation, as part of the process of drawing up the legality definition, together with a gap analysis and commitment to reforms where necessary.
- An agreement on independent monitoring of the functioning of the legality assurance and licensing systems, with outcomes available to the public.
- A commitment to national stakeholder involvement in the joint committees to be set up to oversee the process.
- Improvements in transparency, including annual reporting on the functioning
 of the system and in some cases agreement to make more information on
 forest-sector management (such as information on production, rights
 allocation, finances and audits) available.

The process of negotiating the VPAs itself has also helped to improve governance, primarily through the inclusion of partner-country civil society in the negotiations, which has improved standards of transparency in national forest management.

Effectiveness

The FLEGT licensing system is still being constructed; the details of how licenses will be issued and processed is not yet known, so it is not yet possible to assess any weaknesses in it. In its favour, the system has been constructed carefully with an eye to possible problems, and the inclusion of elements such as independent monitoring should prove helpful to supporting its robustness.

However, one potential problem has been identified. The way in which the FLEGT licensing scheme is being built up through agreements with individual countries renders it vulnerable to evasion: illegal products could simply be trans-shipped via non-partner countries to the EU to escape the need for a licence. After a long drawn-out process of analysis and consultation, in October 2008 the European Commission published its proposal for tackling the problem through the new EU timber regulation, mentioned above. ¹⁶ The regulation cleared its final legislative hurdle on 11 October 2010 when it was approved by the Council of Ministers.

As discussed, the regulation will require timber operators (both producers and importers) who first place timber products on the EU market to introduce systems of due diligence designed to minimise their chances of handling illegal timber. The system has been criticised, particularly for applying only at the first point of entry to the EU, and not further down the supply chain (there is some doubt that some EU member states will be able effectively to control imports).¹⁷

Licensing system for fish - CCAMLR Catch Documentation Scheme

No single global agreement governs fisheries management, although the UN Convention on the Law of the Sea (UNCLOS) recognises the rights of coastal states to jurisdiction over resources in their exclusive economic zones. The 1995 UN Fish Stocks Agreement facilitates the implementation of certain provisions of UNCLOS concerning the conservation and management of straddling fish stocks and highly migratory fish stocks. The 1995 FAO Code of Conduct for Responsible Fisheries is also relevant.

The biggest concern is IUU fishing, which continues for a number of reasons including weak flag-state and port-state controls and the challenge of tracking IUU fishing activities. Misreporting of catches and retention of undersized fish or fish caught over the allowed quotas is common. At the international level the FAO's "International plan of action to prevent, deter and eliminate illegal, unreported and unregulated fishing" is particularly relevant. Although it is non-binding, the subsequent 2009 Agreement on Port State Measures will place binding controls on trade in fish and fish products once it is fully implemented. ¹⁸

Administratively, international fisheries regulations are developed mainly through Regional Fisheries Management Organisations/Agreements (RFMO/As). A number of RFMO/As have developed mechanisms designed to combat IUU fishing. One of the most effective (and the most researched) is the Catch Documentation Scheme for toothfish species which has been developed by the Commission for the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) and is implemented by parties to the convention.

The CCAMLR was concluded in 1980 and entered into force in 1982.¹⁹ It established the CCAMLR Commission and sets out the area to which the convention applies. The Commission is responsible for giving effect to the objective and principles of the Convention – i.e. the conservation of Antarctic marine living resources in the Convention area – while allowing for rational use. All parties to the Convention are entitled to join the Commission, which currently has 25 members, out of a total of 34 parties.

In common with CITES, the Montreal Protocol and the Basel Convention, CCAMLR has put in place a number of trade-related measures as a means of enforcing the Agreement. This includes a prohibition on parties allowing landing or trans-shipment of toothfish from any vessel listed on the CCAMLR Contracting and/or Non-Contracting IUU list or toothfish not accompanied by required documentation. CCAMLR has established a range of other measures to support CCAMLR's compliance regime. These measures include an electronic vessel monitoring system (VMS) and a system of inspection which

enables members to designate CCMALR inspectors with the authority to inspect members' vessels operating in the CCAMLR Area.

CCAMLR members are required to report to the CCAMLR Commission on inspections completed in conformity with the CCAMLR System of Inspection. CCAMLR members that have their vessels inspected while in the Convention Area and which are found to be in breach of the rules set by CCAMLR are required to report to the Commission on prosecutions and sanctions imposed as a consequence. The Standing Committee on Implementation and Compliance (SCIC) considers all such reports and provides advice to the Commission on issues of compliance including inspections undertaken. If information is provided to the Commission that a fishing vessel has breached CCAMLR's Conservation Measures while in the Convention Area, or is operating in the Area without authorisation, the Commission can agree to list the vessel on CCAMLR's IUU vessel list.

The CCAMLR Catch Documentation Scheme²⁰ (CDS) for toothfish, a high-value commercially fished deep-sea species, became binding on CCAMLR members in May 2000. The CDS tracks legally caught toothfish from the fishing vessel, and area of the ocean where it is caught (inside or outside the CCAMLR Area), to the port where it lands and on to the country where the fish is consumed. The objective is to limit catches to the areas and levels approved by CCAMLR.

The Licensing System

CGAMLR members are required to ensure that their flagged vessels fishing for toothfish are specifically authorised to do so, and complete catch document forms for all toothfish landed or trans-shipped; catch documents can only be issued to authorised vessels. The catch document includes the following details:²¹

- the name, address, telephone and fax numbers of the issuing authority;
- the name, home port, national registry number, and call sign of the vessel and, if issued, its IMO/Lloyd's registration number;
- the reference number of the licence or permit, whichever is applicable, that is issued to the vessel;
- the species and weight toothfish landed or trans-shipped by product type, and (a) by CCAMLR statistical sub-area or division if caught in the Convention Area; and/or (b) by FAO statistical area, sub-area or division if caught outside the Convention Area;
- the dates within which the catch was taken:

- the date and the port at which the catch was landed or the date and the vessel, its flag and national registry number, to which the catch was transshipped; and
- the name, address, telephone and fax numbers of the recipient(s) of the catch and the amount of each species and product type received.

The catch document itself is identified by:

- a four-digit number, consisting of the two-digit International Organization for Standardization (ISO) country code plus the last two digits of the year for which the form is issued; and
- a four-digit sequence number (beginning with 0001) to denote the order in which catch document forms are issued.

All landings or trans-shipments of toothfish catches at CCAMLR members' ports are only permitted if they are accompanied by a validated electronic catch document. Any export or re-export of toothfish must also be accompanied by a validated export document countersigned by an authorised government official. Where shipments are split, as is often the case, the tracking of all subsequent shipments is maintained. Customs authorities require that appropriate documentation accompany any import or export of toothfish and will often carry out cross-checks of the weight of the fish against the data provided in the validated documents. Non-members of CCAMLR are entitled and encouraged to join the scheme and must meet the same requirements.

The CCAMLR Secretariat holds and administers the central catch documentation register, which records the details of each landing, transshipment and export validated under the CDS. In 2007 the United States made the use of electronic catch documents and centralised VMS a requirement for any toothfish imported into the United States and this seems to have had a beneficial impact in tightening up the scheme (Lack, 2008, p. 24). In 2009 the CCAMLR's CDS became completely electronic.²²

In common with CITES and the Kimberley Process, flag states participating in the scheme nominate a government authority to issue and validate the catch documents.

Effectiveness

Attempts to evade the scheme have included some incidents of document fraud, but at a fairly low level, representing perhaps about 500 tonnes out of a total annual catch of 30 000 tonnes.²³ The introduction of the fully electronic system is expected to reduce the possible falsification of catch and export documents that may have occurred under the paper-based system. The electronic CDS allows authorities to verify the authenticity of

documents in real time and is expected to be a more effective measure than making the forms themselves more tamper-resistant. The electronic CDS also helps expedite the clearance of shipments where there is some doubt over the documentation.

There is some problem with conversion factors for estimating the weight of the fish after the heads and guts have been removed; fishers tend to estimate lower weights than customs officers, and a degree of variability, typically of 10–20%, should be expected. There is also the possibility of fishers simulating GPS signals to mislead the satellite-tracking technology. Transshipment also appears to provide a possible loophole: due to the remoteness of the area and ambiguities in CCAMLR's definition of trans-shipment, there is scope for the controls to be evaded by landing catches in non-cooperating parties or trans-shipping them at sea.

The scheme has certainly enjoyed success. It initially had a clear impact on the price of toothfish, with a 20-30% price differential developing between illegal and legitimately caught fish (Agnew, 2002). Overall, reported landings to CCAMLR fell by 35% over the five years from 2003 to 2007. Global trade in the species fell by only 25% per cent, however, suggesting either that nonmembers were catching more²⁴ or that illegal fishing remains significant. The CCAMLR Secretariat's estimates for the illegal catch as a proportion of the legal catch during 2003-07 ranged between 7% and 17%, averaging about 10% over the five-year period. However, an analysis by TRAFFIC and WWF for the same years, using trade data, suggested a range of 3-23%, with an average of 15% (Lack, 2008, p. 20).

Licensing system for chemicals - the Rotterdam Convention

The 1998 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (the "PIC Convention") aims to promote co-operation and shared responsibility for the international trade in hazardous chemicals. The Convention applies to banned or severely restricted chemicals and severely hazardous pesticide formulations. Similar in principle to the Basel Convention's system of prior notification and consent (see below), exports of the listed chemicals and pesticides can only take place with the prior informed consent of the importing party. Importing countries are given the power to determine whether they wish to import a listed chemical or pesticide or ban it due to concerns that it cannot be managed safely.²⁵

The system grew out of a series of voluntary commitments in the late 1980s. While developed countries were taking steps to ban the movement of hazardous wastes, developing countries frequently lacked the capacity to do so, and there was some concern that companies were exploiting this situation

by relocating their operations to less regulated countries. In 1989 the UN Food and Agriculture Organisation (FAO) and UNEP combined their control methods for, respectively, pesticides and industrial chemicals, to form the voluntary Prior Informed Consent (PIC) procedure.

The Convention itself was agreed in 1998 and entered into force in 2004. There are currently 130 parties. The United States is not a party, though its domestic regulatory system is very similar to that prescribed by the Convention. Many emerging economies, including Brazil, China, India, joined in 2005. The system is closely linked to the Stockholm Convention on Persistent Organic Pollutants and both are developing close links with the Basel Convention.

Annex III to the Convention lists the pesticides and industrial chemicals that are to be controlled for health or environmental reasons. The initial list included 27 substances, and 13 have been added subsequently (though some of these are different formulations of the same chemical). The procedure for amending Annex III is described in Article 22, paragraph 5. Parties that have themselves banned or severely restricted a pesticide or chemical must notify the Secretariat in writing of the fact, as soon as possible after the regulation is adopted. When the Secretariat has received at least one notification from each of two "Prior Informed Consent regions" regarding a particular chemical, or one for a severely hazardous pesticide formulation, that it has verified meet the requirements of Annex I (a list of information about the substance and about the regulations applying to it), it forwards it to the Chemical Review Committee, a committee of 31 government-designated experts in chemicals management.

The Committee reviews the notifications, and decides, in accordance with the criteria for listing banned or severely restricted chemicals set out in Annex II, whether to recommend the substance concerned for inclusion in Annex III. The Conference of the Parties then decides whether or not to accept the recommendation. So far the process of adding new substances has been relatively slow, as many countries have chosen to opt for gradual phase-outs, which do not trigger the procedure, rather than outright bans.

For each of the substances listed in Annex III, a guidance document is issued by the Secretariat to allow countries to decide whether to opt in or out of trade in the substance, or to apply certain conditions to its trade, such as a health department certificate. Decisions are usually made in a crossministerial manner, involving departments such as agriculture, environment and foreign affairs. All parties are required to take this decision – an "import response" – for each of the substances listed in Annex III. A listing of all import responses received by the Secretariat is circulated to all parties every six months.

Import decisions taken by parties must be trade-neutral – that is, if a party decides not to accept imports of a specific chemical, it must also stop domestic production for domestic use and refuse imports from any source, including non-parties (WTO rules require that its member economies not discriminate in this way in any case). If a country has banned a chemical domestically it can export it, but it must inform the importing country that the substance has been sanctioned by the producer country.

All exporting parties are required to ensure that exports of Annex III substances do not occur contrary to the decision of each importing party. They should ensure that the import responses circulated by the Secretariat are communicated to their own exporters and relevant authorities. Transit trade is not regulated by the Convention. Countries have the right to request transit information from the Secretariat but to date none have done so.

In force for seven years, it is still too soon to reach any conclusions on the impact of the Rotterdam Convention. Since the parties have not yet agreed a non-compliance procedure, 26 the Secretariat and the conference of the parties have no involvement, so far, in monitoring whether the system actually works. No trade data have been collected to date. However, this should become easier in the future, with the introduction in 2007 of a number of new HS codes for substances controlled by the Convention. Illegal activity – i.e. evasion of the PIC procedure – seems possible, but, despite requests, no party has yet reported any to the Secretariat.

A number of parties have still not published any import responses, and there is an ongoing debate about the extent to which the Convention should offer capacity-building assistance, and the possible use of sanctions against non-complying parties. Problems can be caused by a lack of knowledge of the origin of some shipments, which is not always clear, particularly in free-trade zones. The Secretariat is working with the Green Customs Initiative²⁷ to prepare training materials for customs officers.

The voluntary PIC procedure, which functioned before the Convention entered into force, operated with some success, and there is no reason to think that the Convention cannot emulate this. Most of the substances covered by the Convention are widely banned and are therefore not traded in any great quantities. A bigger test of the Convention will come when higher-profile, more extensively traded, substances are added. Examples include tributyl tin or chrysotile asbestos, both of which were discussed at the November 2008 conference of the parties. The former was added, but no agreement could be reached on the latter.

The strengths and weaknesses of the Convention in the area of pesticides was discussed at an OECD seminar on the "Illegal International Trade in Agricultural Pesticides" in 2010. Problems associated with trade in counterfeited

pesticides and trade in pesticides that are not registered in the country of destination were highlighted (OECD, 2011). While pesticides are among the most regulated products in the world, international shipments of counterfeit active ingredients and finished products often escape oversight by pesticide regulators and custom offices in OECD countries.

ODS and the Montreal Protocol

The 1987 Montreal Protocol on Substances that Deplete the Ozone Layer establishes a series of phase-out schedules for the production and consumption of ozone-depleting substances (ODS) such as chlorofluorocarbons (CFCs). The Protocol currently has 196 parties – which equates to universal coverage, the first (and so far only) MEA to achieve that level of support. According to the 2010 Science Assessment Panel, "a return to pre-1980 levels of ozone is expected around mid-century in mid-latitude regions and the Arctic, with recovery in the Antarctic expected to follow later this century. Global (90°S–90°N) annually averaged total column ozone will likely return to 1980 levels between 2025 and 2040, well before the return of stratospheric halogens to 1980 levels between 2045 and 2060."

The Protocol did not initially require specific controls on individual shipments of ODS, though implicitly parties had to have some means of monitoring and controlling trade, as "consumption" is calculated as "production plus imports minus exports". In practice, many parties established import (and often export) licensing systems to ensure that they could meet their consumption phase-out targets.

This approach was formalised in 1997 through the Montreal Amendment, which introduced a requirement for export and import licenses for most categories of ODS for all parties ratifying the amendment. The licensing system was introduced primarily as a means of controlling the illegal trade in ODS that had emerged in the mid-1990s as developed countries neared the end of their phase-out schedules. It would certainly have been written into the Protocol from the beginning if such illegal activities had been anticipated.

Later, illegal trade became widespread in some developing countries, which have longer phase-out schedules. Estimates suggest that, by 2005, illegal trade was of the magnitude of 10-20% of the legitimate global trade (Chatham House and EIA, 2006). This area is unique among those considered in this paper, as the phase-out process of all CFC-using equipment will gradually remove the problem at source. Nevertheless, the prevalence of cheaper illegal products (or even legal products, as CFCs can continue to be used legally as feedstock in chemical production) hinders phase-out efforts and delays the recovery of the ozone layer. In addition, although most CFC uses have now been completely phased out, phase-out schedules for

hydrochlorofluorocarbons (HCFCs) are longer, and some illegal trade in these substances has been detected.

Licensing systems

Entering into force in November 1999, the Montreal Amendment requires those parties that ratify it to establish and implement a system for licensing the import and export of new, used, recycled and reclaimed controlled substances. Unlike other MEAs, the Protocol does not specify a single uniform scheme for these licensing systems, nor does it even define what it means by a "licensing system". As a result, systems developed by different parties can vary quite significantly.

The general concept, however, is in line with the other licensing systems described here. Before any ODS can be moved into or out of a country, importers or exporters must apply to the country's government for a permit that specifies the quantity of ODS, the countries involved in the transaction, what the chemicals will be used for and other relevant information.

Licensing systems also generally contain quotas, in order to provide a means to limit consumption to the levels required by the Protocol: licenses are awarded for specific volumes over specific periods. As most parties are importers, their import licensing and quota systems are usually the main mechanisms available to them to fulfil their obligations. Licences can also be designed to provide information on end uses, and to require all applicants for licences to register with the authorities, though these characteristics are not common.

Effectiveness

Each year since 2002, the annual meeting of the parties to the Montreal Protocol has recorded how many parties possess licensing systems, and has encouraged those parties lacking them to introduce them. While the figures have shown steady increases, from 115 in 2002 to 186 in 2009, in fact very little assessment has ever been made of the *effectiveness* of these systems, and whether they are operating as intended.

In June 2005, the Executive Committee of the Multilateral Fund (the Protocol's mechanism for providing financial assistance to developing countries to phase out ODS) published an analysis of licensing systems in nine developing countries, selected by region and level of consumption (UNEP, 2005). It contained several recommendations, but did not analyse the extent to which the licensing systems themselves were accurately recording imports and exports. The only analyses which have been carried out of export and import data have indicated major discrepancies between import and export figures. A 2005 study published by UNEP, for example, identified discrepancies

of up to 2 000 tonnes a year between importing and exporting countries in the Asia-Pacific region during 2001-04 (UNEP DTIE/Government of Sweden, 2005).

There are several reasons why these discrepancies may exist.³⁰ Some national licensing systems require permits for individual shipments, whereas in others, permits are issued to companies for periods of time (such as up to a year in some cases). Individual shipment licenses increase the burden on industry and customs, but allow more precise monitoring of movements. Even individual shipment licenses, however, may not describe accurately what is contained in the shipment. Few, if any, countries include in their licensing regulations a requirement for full and accurate labelling of the contents of each cylinder in each consignment, or a requirement for licenses to be accompanied by declarations certifying the accuracy of the information, either of which would help to raise the deterrence threshold against illegal shipments.

Licensing systems also vary in their coverage of ODS; the 2005 Executive Committee report found that, in general, only CFCs were covered comprehensively (UNEP, 2005, para 53). Despite the requirements of the Montreal Amendment, in some countries the licensing systems cover only pure substances, excluding mixtures, or only a list of selected individual substances or mixtures.

In most countries more effort has been devoted to establishing import licensing systems than to export licences (since far more countries are importers than exporters). The Executive Committee study found that only three of the nine countries studied had any system of export licensing (UNEP, 2005, para 46 and Table 4). However, the Montreal Amendment requires export as well as import licensing, and this is obviously an important means – if implemented properly – of monitoring international trade.

Even where means of regulating exports exist, they may not operate effectively to fulfil the aims of the licensing system. Research in 2004, for example, showed that the only check made by Indian exporters was whether the country of import was a party to the Montreal Protocol; no information was sought on whether the importing enterprise possessed a license or whether the shipment was within quota limits (EIA, 2004), although subsequently exporting companies in India reported that they did pre-check the existence of an import quota prior to export. Chinese exports were treated similarly, illustrated by the fact that China reported exports to a large number of Indonesian companies despite the fact that the Indonesian government had only licensed one company for import (China subsequently pledged to issue licenses for trade with Indonesia only to their one registered company).

Implementation of the licensing systems may be weak. As the Executive Committee report observed, "the effectiveness of import licensing and

prevention of illegal imports of ODS is highly dependent on the ability of customs officers to apply the regulations in force and to identify illegal shipments of refrigerants. For this the training of customs officers is crucial." Another aspect highlighted was the need for better communication between different government agencies, primarily those responsible for regulating ODS (usually environment or industry departments) and the customs agencies that check imports and exports.

If communication between government agencies within a country is difficult, communication between agencies in different countries is even more so. In particular, customs departments rarely, if ever, check whether what they record as imports from a given country is the same (in terms of products, volume, value, etc.) as is recorded as exports by the same country. The survey of data discrepancies in East and South-East Asia mentioned above, however, did help to provide the impetus for bilateral collaboration in the Asia-Pacific region aimed at understanding the causes of the discrepancy and tackling illegal trade where this proved to be the cause. This included the establishment of an 'informal prior informed consent' (iPIC) system in 2005-06, which is growing in coverage and has proved to be a useful tool in verifying information before issuing licenses. Similar systems are being established in the Europe and Central Asia and Latin America and Caribbean regions.³¹

These weaknesses in licensing systems have been discussed at meetings of the parties at several recent meetings, and parties are regularly urged to implement fully their systems. There has always been opposition from some Parties, however, to any greater centralisation of the operations of the Protocol, for example through establishing a uniform licensing system. Instead, in 2007 the Parties called for better implementation of national licensing systems, and also a series of voluntary commitments, including greater sharing of information with other Parties, such as by participating in an iPIC procedure; monitoring transit movements, including those passing through duty-free zones; establishing appropriate minimum requirements for labelling and documentation; and cross-checking trade information. Technical and financial assistance is also available through UNEP for the formulation and revision of regulations, the introduction of export and import licensing systems, and training of customs and other officials in their operation.

Since there has been no systematic evaluation of licensing schemes, it is not known how widespread the potential weaknesses are, and how effectively they are being tackled, for example through the adoption of the iPIC procedure. If the import and export data reported centrally rely on figures derived from flawed licensing schemes, then the success of the Montreal Protocol in phasing out ODS may be doubtful. However, increasing numbers of countries have phased out the use of ODS entirely, and where there is no trade

at all, any weaknesses in the licensing schemes become much less important. In addition, both production data and observations of atmospheric concentrations of ODS indicate that ODS use is indeed declining sharply. Overall the Montreal Protocol can genuinely claim to be a highly effective treaty.

Licensing system for waste - Basel Convention

The 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal establishes a regime for controlling the international trade in hazardous and "other wastes". Agreed in 1989 and entering into force in 1992, the Convention currently has 172 parties.³³

The Convention places a general prohibition on the exportation or importation of wastes between Parties and non-Parties. For Parties, the general objective of the Convention is to ensure that transboundary movements of wastes are reduced to a level consistent with environmentally sound and efficient management. The movement must be conducted in a manner which will protect human health and the environment. Parties have the right to prohibit the import of hazardous waste, and an export ban applies to states that have not given written consent to a specific import.

The prior notification and consent system

The Convention establishes a system of "prior notification and consent" for transboundary movements of waste. The exporting state, generator or exporter must notify the importing state and any states of transit of any proposed transboundary movements. A movement document must accompany any shipment of waste from its origin to its disposal. A standard form is used, with the design approved by the Conference of the Parties. The document must specify:

- the exporter of the waste;
- the generator and site of the waste generation;
- the disposer of the waste and site of its disposal;
- the carrier of the waste;
- the date the transboundary movement of waste started and the date and signature on receipt by each person who takes charge of the waste;
- the means of transport;
- a general description of the waste;
- a declaration that the competent authorities of all concerned states do not object to the shipment;

 certification by the disposer of receipt at designated disposal facility and an indication of the method of disposal and of the approximate date of disposal.

Any traffic in waste that does not meet the notice and consent requirements, or fails to conform with the accompanying documents, or results in deliberate disposal in violation of the Basel Convention and general principles of international law, is held to be illegal and considered a criminal act. Transport and disposal of hazardous and other wastes can only be carried out by authorised persons, with the movements meeting generally accepted and recognised international rules and standards of packaging, labelling and transport, taking into account relevant internationally recognised practices.

Importing states respond to the notice in three ways: by giving consent (with or without conditions); by denying permission; or by requiring additional information. Written consent and confirmation from the importing state of the existence of a contract between the exporter and the disposer specifying environmentally sound management of the wastes is needed. Where the terms of the contract cannot be fulfilled, the exporting state has a duty to reimport the waste. Written consent is also needed from the transit state(s). Written consent can include conditions on the supply of certain information, such as the exact quantities or periodic lists of hazardous wastes or other wastes to be shipped.

Notice and consent covers a twelve-month period as long as the waste has the same characteristics and is shipped regularly to the same disposer through the same exit office of the exporting state, entry office of the importing state, and customs office of the transit state. The forms can be issued to cover a twelve-month period, or can be issued for individual shipments. Importing states and transit states can also require the wastes to be covered by insurance or another guarantee.

Traffic in waste controlled by the Convention is considered to be illegal where it is carried out: without notice to all the parties concerned; without the consent of all parties concerned; where consent of the state was obtained through falsification, misrepresentation or fraud; with lack of conformity in a material way with the accompanying documents; or where there was a deliberate disposal in violation of the Basel Convention or general principles of international law. If the waste is deemed to be illegal, the exporting state, or the exporter or generator, has a responsibility to take back the waste, or if this is impracticable, to dispose of it in accordance with the Basel Convention, within thirty days of receiving notice of the illegal traffic. Parties are required to introduce national or domestic legislation to prevent or punish illegal traffic.

Effectiveness

Implementation of the Basel Convention, through better regulation of the trade in hazardous waste, appears to have contributed to a reduction in the dumping of this waste in developing countries, which was a high-profile problem in the 1980s. However, it has not brought an end to the problem. In November 2005 a joint enforcement operation of European environmental authorities in seventeen European seaports showed that a number of waste shipments were illegal under EU regulations (though that did include a large number of relatively minor violations). In 2006, the *Probo Koala*, a ship chartered by the Swiss metals and energy-trading firm, Trafigura, illegally dumped a cargo of chemical waste in Côte d'Ivoire. Tens of thousands of people living near the dumping sites subsequently suffered from a range of illnesses, and at least fifteen died. The case made the headlines in 2009 because of Trafigura's attempts to suppress a series of reports claiming that the company knew the waste was toxic when it was dumped.

Data collection for hazardous wastes is notoriously poor, but about 8.5 million tonnes of such wastes are estimated to be produced every year, most within industrialised countries. Data on the effectiveness of the prior notification and consent system itself is not generally available and no systematic survey has been conducted. There is no obligation for the Convention Secretariat to be sent copies of the movement documents, there is no requirement for any independent verification of the system, and the Convention's Implementation and Compliance Committee has received no submissions to date. The Secretariat is trying to develop the prior notification and consent system in various ways, for example to introduce an electronic version of it (it is currently entirely paper-based), but is constrained by a chronic shortage of funding. Closer co-operation with the Rotterdam and Stockholm Conventions may help to overcome this problem, at least to a certain extent; the joint meeting of extraordinary conferences of the three conventions held in February 2010 marked an encouraging start.

Main lessons from licensing and concluding remarks

Drawing on the experience of the systems analysed above, this section highlights the key components that can make a licensing system work more effectively.

Broad membership

The greater the number of relevant countries – i.e. those engaging in the trade in question – covered by the system, the more effective it will be. Most of the licensing systems examined here do have universal, or near-universal coverage, as they form part of agreements with large memberships. The FLEGT

system is quite different, being built up through a series of bilateral agreements between the EU and individual timber-producing countries. This opens up the possibility of illegal products evading the controls by being transshipped through other countries not party to the system ("circumvention") and of partner countries importing products produced illegally in other, non-partner, countries ("laundering"), since it is difficult for the partner country to know whether products have been produced legally elsewhere.

One solution to this problem is universal membership of the system (or, at least, membership by the main producing, consuming, processing and trading countries), as in the MEA-based licensing systems. This also, incidentally, makes trade measures taken against countries not participating in the licensing system (as in CITES, the Montreal Protocol and the CCAMLR CDS) more feasible, since they allow or require parties not to trade with non-parties in the products covered by the agreement.

However, even in some of the MEAs, non-participation by key countries may cause problems. In the absence of universal membership, there are a number of steps that could still be taken. Membership of the system by the bulk of key countries might still allow trade measures to be used, excluding non-members. Partner countries applying the license to all their exports, regardless of whether the importing country requires it, might help avoid the problem of circumvention; this seems likely to emerge under the FLEGT system.

Comprehensive product coverage

Coverage of products is also important, particularly where some categories of products can be transformed, or processed, into others. This is particularly the case with timber: much of the international trade in timber consists of processed products such as plywood, flooring, or furniture, or pulp and paper. In this case, if the processed products are not covered by the licensing system, processing offers a possible way round the controls. Although it was originally envisaged that the FLEGT system would apply only to the more basic timber products (logs, sawnwood, plywood and veneer), in fact the partner countries in all the VPAs agreed so far have decided to extend the licensing system to all timber products.

Similarly, the Montreal Protocol's licensing system does not cover all categories of ODS in all countries. Recycled or reclaimed substances are often omitted, which offers a potential loophole to those trading in illegal virgin ODS.

Reliable licenses

Licensing systems are only as strong as the licenses themselves; if the licenses cannot be trusted to guarantee that the products they accompany are

legal, then the system is open to abuse. Quite apart from simple administrative error, though, the problem with any licensing system is that the licenses themselves acquire a value, opening up possibilities for fraud, theft and corruption. Licenses can be stolen, altered or forged; personnel in the licensing authorities can be bribed or intimidated.

Experience with existing licensing systems leads to a number of conclusions about how licenses can best be designed when they are required to provide assurances of effective governance and law enforcement:

- Licenses should be of uniform design, rather than varying between countries. Both CCAMLR and the Basel Convention and to some extent CITES use uniform designs for their licenses (though there can be some variations, including the use of different languages, which causes some problems). In the Montreal Protocol the licensing system has been introduced on a country-by-country basis, its details being specified in the agreement itself.
- They should be based on electronic, not paper, systems. Electronic systems speed up communication and collection of data, and make tampering much more difficult. An electronic system is now in place in CCALMR, and is developing within CITES; some countries use it for Montreal Protocol licenses. Obviously, this requires greater investment of resources than paper-based systems, but the evidence suggests that it is far more effective.
- Licenses should be cross-checked against each other i.e. someone should check whether what is licensed as being exported is the same as what is licensed as being imported. This is a key weakness in many licensing systems, and glaring discrepancies are often found when even rudimentary cross-checking is carried out. In the Montreal Protocol, for example, analyses of export and import data for pairs of countries have indicated significant discrepancies. If it is not possible to carry out the cross-checking individually (where, for example, shipments are broken up and re-routed in transit) it should be done in aggregate. Electronic systems of data collection again make this process much easier. CITES possesses a rudimentary cross-checking system through the monitoring function of the UNEP-WCMC.
- What is in the shipment should also be cross-checked against the description on the license. This happens to a greater or lesser extent in most of these agreements, including in particular CITES and CCAMLR, partly depending on the capacity of the country concerned. This can pose significant difficulties, including identifying the contents of the shipment (CITES appendices list about 34 000 species, for example; most ODS require chemical analysis for identification), particularly where they may be hazardous (waste and many chemicals).

All of these functions are easier with a central co-ordinating body, promoting or overseeing uniform design of licenses, collecting copies of all of

the licenses issued and used, collating data and examining discrepancies. A number of these agreements' Secretariats, including those of CCAMLR, or related bodies, like WCMC for CITES, play this role, but others, including the Montreal Protocol's, do not; the Kimberley Process does not possess a central organisation, which is now leading to problems with its implementation. Some of these steps – cross-checking of licenses against what is in the shipment, and against each other, and the establishment of central co-ordinating bodies – do of course have resource implications. These need not be very heavy, particularly where electronic systems are in place, which makes the second and third of these steps much easier – the WCMC's role of collating CITES permits is fulfilled mainly by one person, for example (and that is for paper permits). Crosschecking the licenses against the content of the shipment would undoubtedly be more labour-intensive, and would probably only be carried out in high-risk cases or where intelligence suggests problems may be occurring (for example following data cross-checks showing significant discrepancies).

Licenses for all stages of trade

Licenses can be required at all stages of trade: import, export and transit. Export licensing should only be required when the risk assessed is not negligible. The Montreal Protocol is unusual among international agreements with licensing systems not always monitoring exports (although the 1997 Montreal Amendment, which set up the licensing system, requires this, many countries have not implemented it). Most of the other licensing systems examined here – CITES, FLEGT, CCAMLR, and Basel Convention (but not the Rotterdam Convention) – all require Parties to issue export permits or licenses and to report them to a central body.

Import licenses are clearly necessary when the importing country is limiting imports, *e.g.* through a quota, as in the Montreal Protocol, or in applying stricter rules than the exporting country, as in some cases under CITES. In other instances they should not be necessary, but if there is any doubt over the validity of the export license, they can provide a second point at which products can be checked. If this is to be effective, however, it will require a source of information independent from the exporting country's authorities.

Tracking the movement of goods through transit countries, particularly when they are simply trans-shipped (which is often not recorded by customs), is difficult – but such trans-shipment can be used to disguise the origin of the product. The Basel Convention does require countries of transit to require the presence of permits or certificates; similarly, CITES requires re-export permits. Information is lacking on how these processes work in practice, though they do not appear to cause any substantial difficulties.

Additional complications are caused when products are processed in a country other than their country of origin. This is a problem mainly for timber, where some countries import large volumes of raw timber, process it (e.g. into plywood, flooring or furniture) and export it to final consumer markets. Under normal trading rules of origin, the country of origin of the product is the country of last significant economic transformation.

So even if, for example, China joined the FLEGT licensing system, all it would guarantee would be that no illegality had taken place in China itself. This highlights the weakness of a licensing system built on bilateral agreements: if a multilateral system was in place, China's imports ought to be licensed as legally produced, and the license could stay with the product even when processed. However, in general, processing is a possible means of disguising the origin of the product. It is noteworthy that the U.S. Lacey Act (under its import declaration requirement for timber), the EU's timber regulation, and the VPAs so far agreed will all require timber shipments to indicate their country of harvest, not just the country of origin.

Two of the agreements analysed here – the Rotterdam and Basel Conventions – explicitly require some kind of prior informed consent (PIC) (or "prior notification and consent") to the transboundary movement of controlled products. The Basel system appears to work well in practice, though information on its operation is not easy to find. The Rotterdam Convention is a development of voluntary systems that operated effectively for more than fifteen years. An informal PIC system has also been used for ozone-depleting substances in south and south-east Asia, with effect, and the practice is now spreading to other regions.

In each case the PIC system can be seen as a substitute for effective domestic controls, which may be difficult to establish and implement. Control of imports, which is what a PIC system effectively sets up, is generally easier to implement because of the smaller number of points at which controls need to be exercised. It is not a coincidence that developing countries were among those most enthusiastic to establish all these PIC systems: often lacking the capacity to establish effective domestic regulatory systems covering the wide range of companies and individuals involved in any given sector, they have tended to prefer to control access to their markets through import restraints.

Effective enforcement

Needless to say, licensing systems need to be enforced effectively. It is sometimes the case that although a country may have a well-designed licensing system in theory, it is poorly enforced in practice; the discrepancies noted above in the case of the Montreal Protocol are an example. Nonetheless one major advantage of a licensing scheme is that it brings to bear the efforts

of two sets of enforcement agencies on the illegal trade – not just the authorities in the country of origin (which, frequently based in developing countries, may often be lacking in capacity) but also those in the country of import (often developed countries with – usually – correspondingly higher law enforcement capacities).

A specific issue with the implementation of licensing systems arise within free-trade zones (or export processing zones), special areas where some normal trade barriers, such as import or export tariffs, do not apply and bureaucracy is minimised (often by outsourcing it to the zone operator); corporations setting up in the zone may be given tax breaks as an additional incentive. Most free-trade zones are located in developing countries, often in particularly underdeveloped localities, in order to attract employers and thus reduce unemployment and poverty.

The reduction in bureaucracy offered in free-trade zones may often involve the non-application, or non-enforcement, of environmental regulations, therefore often providing a route for illegal products to be traded outside any form of monitoring or regulation. None of the agreements discussed here provide any latitude for exempting parts of parties' territories, such as a free-trade zone, from any of their requirements, so licensing systems should be enforced just as strictly in the zones as anywhere else.

Verification and compliance

Most of the systems analysed here are not subject to independent or third-party verification; the agreement's Secretariat has to rely on data reported by parties, which may often be inaccurate. In some cases, such as the Montreal Protocol, the only reporting required on licensing systems is whether they have been established, not on whether they actually work (and such investigations as have been carried out often reveal that they do not). In the case of CITES, there have on several occasions been doubts about the validity of licenses issued by exporting countries.

There is no question that licensing systems would benefit from external verification, whether by independent third parties (FLEGT) or via peer review (Kimberley Process) or through intrusive inspection procedures (CITES). This is particularly important where illegal trade is widespread and the original data, or government-operated licensing systems, may not be completely reliable without such oversight. Similarly, licensing systems should be subject to regular analysis and review, to check to what extent they are working as intended. (Although the CCAMLR CDS is not subject to auditing, CCAMLR itself has completed an independent review process, which included a review of the effectiveness of its CDS.)

Finally, licensing systems also need to be supported by robust non-compliance mechanisms, so that there are real incentives for non-complying parties to return to compliance. CITES and the Montreal Protocol both contain effective non-compliance systems, resting on the ultimate threat of suspension of trade in the products controlled by the agreements, with a good record of success.

Cost-effectiveness of schemes

It is obviously important that the licensing scheme does not entail excessive costs to establish and implement, whether the costs are borne by government or industry. Several of the steps recommended above in improving the operation of a licensing scheme imply the need for extra resources – including, in particular, independent verification and the use of electronic systems.

No one has ever attempted to carry out a cost-benefit analysis of any of the licensing schemes examined above, and there would be serious methodological problems in doing so. A few general points can be made, however:

- None of them appear to involve large numbers of dedicated staff to run the systems centrally (either at the country level or in MEA Secretariats).
- Enforcement, however, requires some level of knowledge and awareness among, potentially, a large number of customs officers. Training is essential for general customs agents. The use of specialised customs teams (such as the CITES team in UK customs) can often be valuable.
- Collaboration between different agencies customs, police and the judiciary, and environment, forest, fisheries, and industry ministries – is generally required but not always present. Dedicated task forces or operations (such as the US "Operation Cool Breeze" aimed at ODS smuggling) often prove effective.
- If the licensing system works effectively, in some cases there should be economic benefits to the government, in terms, for example, of higher tax and export duty revenues, which should help offset the costs; this should be particularly true for timber.
- Similarly, there may also be direct benefits to industry, for example if protected markets can be created in which legal products are not undercut by cheaper illegal equivalents. Putting in place the type of chain-of-custody and tracking systems necessary to underpin the licensing system may also have beneficial spin-offs, in the shape of better management systems, reductions in waste.

• There is a role for donor assistance in improving licensing systems in the ways suggested here. This is recognised in the FLEGT VPAs, where the EU will provide capacity-building assistance with establishing (though not with running) the timber licensing scheme; and there have been many other examples of bilateral and wider assistance with particular initiatives, such as piloting the electronic permit system in CITES. Coordinated international assistance with training, examples of best practice, etc., such as that provided by the Green Customs Initiative, is also extremely valuable.

Role of industry

It is, of course, seldom governments that undertake international trade in the products controlled by these agreements; rather, it is commercial enterprises that actually export and import. The involvement of the main international diamond companies in the Kimberley Process has proved helpful to its success so far; another example is the Coalition of Legal Toothfish Operators (COLTO), a private-sector initiative designed to address IUU toothfish fishing. Close involvement of industry in licensing system design, implementation and review should be encouraged.

In some areas, particularly timber and fish, many companies are already implementing voluntary means of controlling supply chains, generally through certification or legality verification schemes (either international, or company-based), with the aim of excluding illegal and unsustainable products from their own supplies. If the licensing system recognises these systems – for example, if certified timber could automatically qualify for a FLEGT license – then they should run more smoothly.

However, there is a danger in relying on voluntary certification schemes to guarantee legality. This is not what they were designed for, and they may not be able effectively to police themselves if determined attempts are made to subject them to abuse. There are already anecdotal reports of suspiciously large volumes of Forest Stewardship Council (FSC)-certified timber being exported from China. However, since access to government-procurement contracts increasingly relies on certification, this is an issue which will have to be tackled at some point.

Conclusions

Licensing systems have become increasingly common in recent years, not only in the areas examined here but also in others (e.g., the Cartagena Protocol on genetically modified products). They can be regarded as an attempt to regulate particularly problematic trading sectors in a world where trade barriers are steadily being removed. They can also have associated benefits, such as improving levels of governance.

None of the schemes mentioned here have worked perfectly, though all can claim some measure of success. It will be interesting to see how the FLEGT licensing scheme performs, as to a certain extent it has been designed with an eye to previous schemes' weaknesses. The following measures would be helpful in improving licensing schemes further:

- A systematic analysis of their operation and successes and failures; although in general most of the systems seem to be working, there are relatively few comprehensive data.
- A process for sharing information among those responsible for operating the systems, perhaps *via* the Green Customs Initiative, the UN Environment Programme (UNEP), or the G20. This could be of particular value to those systems new or just coming into existence (*e.g.*, the Rotterdam Convention, FLEGT).
- Independent verification of the issuance of licenses, increased cross-checking of licenses, and a switch from paper-based electronic systems could increase the effectiveness of the majority of licensing systems studied. More resources could usefully be targeted at these functions. There may be scope for using some organisations to carry out the same functions for more than one agreement (e.g., the WCMC could play a central monitoring role for CITES and FLEGT).

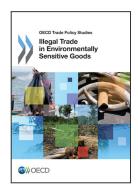
Notes

- 1. Although, UNCTAD (2010) reported a 9.7% decrease in container throughput at ports in 2009.
- 2. UK HM Revenue & Customs, personal communication.
- 3. See Brack (2010) for a longer discussion.
- 4. In 2002 a number of participating states in the Kimberley Process applied to the WTO General Council for a waiver from their WTO obligations with regard to the Process's certification scheme. The waiver was duly granted in February 2003, and then extended in 2006; it is now in effect until January 2013. Most Process signatories, however, did not support this move, implying as it did that the Process contravened basic WTO rules, an argument that was not generally accepted.
- 5. See www.cites.org.
- 6. For a good summary of the operation of CITES, see Reeve (2002).
- 7. Taken from Reeve (2002), pp. 32-34.
- 8. The Australian CITES Management Authorities (CMAs) use acquittal forms to record the actual quantities imported into, and exported out of, Australia.
- 9. All information in this paragraph: John Caldwell, UNEP-WCMC, personal communication.
- 10. Available at www.cites.org/common/cop/15/doc/E15-30-01T.pdf.

- 11. Mahogany is the most commonly traded timber species listed under CITES, and the United States account for about 60% of mahogany imports.
- 12. European Council Regulation No 2173/2005 of 20 December 2005 on the establishment of a FLEGT licensing scheme for imports of timber into the European Community.
- 13. The text of only one VPA is currently available publicly, that with Ghana; see www.illegallogging.info/item_single.php?it_id=802&it=document.
- 14. Julia Falconer (European Commission). FLEGT VPA Update. Presentation at the Illegal Logging Update Meeting, Chatham House, June 2009; available at www.illegallogging.info/item_single.php?it_id=369&it=presentation.
- 15. For more details, see Falconer, "FLEGT VPA Update".
- 16. "Proposal for a regulation laying down the obligations of operators who place timber and timber products on the market", COM(2008)644/3, October 2008.
- 17. For a full analysis, see Brack (2008).
- 18. www.fao.org/Legal/treaties/037t-e.pdf.
- 19. See www.ccamlr.org/.
- 20. See www.ccamlr.org/pu/e/cds/intro.htm.
- 21. Taken from CCAMLR Conservation Measure 10-05 (2003) Catch Documentation Scheme for Dissostichus Spp., available at www.ccamlr.org/pu/e/cds/p1.htm.
- 22. See CCAMLR Conservation Measure 10-05 (2009).
- 23. David Agnew (Imperial College), personal communication.
- 24. China became a member of CCAMLR at the annual Commission meeting in 2007.
- 25. See www.pic.int.
- See UNEP/FAO/RC/COP.5/16 at www.pic.int/TheConvention/ConferenceOftheParties/Meetings anddocuments/COP5/tabid/1400/language/en-US/Default.aspx for a discussion of progress to date.
- 27. www.greencustoms.org/.
- 28. http://ozone.unep.org/.
- 29. See http://ozone.unep.org/Assessment_Panels/SAP/Scientific_Assessment_2010/.
- 30. For more detail, see Chatham House and EIA (2006).
- 31. See www.mea-ren.org/ipic_network.php.
- 32. Decision XIX/12, "Preventing illegal trade in ozone-depleting substances" (2007).
- 33. See www.basel.int.
- 34. www.basel.int/legalmatters/illegtraffic/index.html.

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