

Conceptualising and combating transnational environmental crime

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Abstract To date, transnational environmental crime has been poorly attended to by the transnational organised crime and transnational policing discourse. Academics have focused on individual elements of environmental crime, neglecting a broader theoretical discussion, while national and international institutions have prioritised other forms of organised crime, giving little thought to the nuanced nature of transnational environmental crime and how this should be reflected in policing and countermeasures. This paper attempts to rectify this by conceptualising transnational environmental crime and suggesting ways forward for countermeasure development. The paper will begin by looking at the problem of environmental crime, its value, scope and effects, concluding that the damaging nature of transnational environmental crime demands a greater focus on its policing. The nature of transnational environmental crime will then be discussed by reference to traditional forms of organised crime. It will be argued that, while transnational environmental crime is a form of organised crime, and has some features in common with the traditional organised crimes, such as drug smuggling and people trafficking, it is the substantial differences that should guide the approach to developing countermeasures. The development of effective countermeasures, it is concluded, requires a significant change in policy at every level.

Keywords Transnational environmental crime · Transnational policing · Conceptualising environmental crime · Countermeasures · Demand reduction · Supply reduction

To date, transnational environmental crime has been poorly attended to by the transnational organised crime and transnational policing discourse. National and international institutions have prioritised other forms of organised crime, giving little

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thought to the nuances of environmental crime and how they should be reflected in policing. Academics have tended to focus on particular environmental crimes, neglecting a broader theoretical discussion: there has been no attempt made to “draw lessons from this group of problems as a whole, nor to organize the various policy issues involved into a coherent framework for analysis” (Hayman and Brack 2002: 6).

Acknowledging that the genesis and dynamics of such crime must be understood in order to effectively respond to it, this paper aims to conceptualise transnational environmental crime and assess how this conceptualisation impacts upon the approach taken to policing. The paper will begin by looking at the problem of transnational environmental crime, its value, scope and effects. The nature of such crime will then be discussed by reference to traditional organised crimes, such as drug smuggling and people trafficking. It will be argued that, while transnational environmental crime has some features in common with these traditional forms of organised crime, there are substantial differences that make transnational environmental crime distinctive, and these differences should guide the approach to countermeasures. The effective combating of transnational environmental crime, it is concluded, requires both a different approach to policing, avoiding the ‘war on’ paradigm, and a greater emphasis on demand and supply reduction.

Transnational environmental crime: the problem

Transnational environmental crime (TEC) can be split broadly into two categories: trafficking in natural resources and trafficking in hazardous substances (COP 2010: 9). The former includes the trade in endangered species, illegal logging and illegal exploitation and trafficking of mineral resources while the latter includes the illegal trade in ozone depleting substances and the dumping and trafficking of waste.

This paper will not attempt to deal comprehensively with the effects and scope of every environmental crime. However, it will be necessary to outline some of the effects in order to highlight the importance of the issue. Some environmental crimes, such as wildlife poaching, can jeopardise the existence of whole species and deprive local communities of a valuable tourism resource (EIA: 5). Likewise, illegal logging takes away a valuable resource from local communities that may depend on it. In some cases, for example in Honduras, criminal groups have driven communities off their land to engage in illegal logging and fishing (Schmidt 2004: 97). The effects of some environmental crimes are global in nature. For example, the depletion of the ozone layer causes a wide range of health and environmental effects worldwide (UNEP 2007), and the dumping of hazardous waste can affect wide geographic areas and pollute water systems.

Like most illicit market activity, it is difficult to ascertain precisely how widespread and valuable TEC is (Higgins). One estimate places the total value of TEC worldwide at US\$22–31bn each year (Lauterback 2005), yet another suggests that illegal fishing and logging alone are worth US\$40bn (Baumüller et al. 2009: 2). This places illegal fishing and logging above people smuggling in terms of value (UNODC). Even estimating the value to criminals does not illuminate the full extent of the problem, as the crime not only generates money for those involved, but also costs states money. The World Bank, for example

estimates that illegal logging costs states in the Global South¹ US\$15bn in lost revenue and taxes each year (EIA 2007).

In addition, those involved with environmental crime are often involved in other high profit transnational organised crime (TOC) (COP 2010: 9, Interpol 2006: 6, Interpol 2009). This occurs for three reasons. Firstly, it can be due to the perpetrators being involved in criminal activity more generally; thus environmental protection officers often come across evidence of firearms dealing and money laundering during their investigations (Blindell 2006). Secondly, it can be a result of symbiosis between environmental crime and other TOC. For example, the illegal clearing of land can be a precursor to drug cultivation or trade in illegal chemicals can be a precursor to trading chemicals for terrorist activity (Blindell 2006: 2). Likewise the hunting of wild animals is facilitated by logging as poachers can take advantage of infrastructure developed by logging companies to access animals (Schmidt 2004: 99). Thirdly, there is a high potential for ‘crossover crime’; incidental crime committed in the course of committing TEC. David Higgins² notes that a whole range of crimes, such as murder, corruption and falsification and forgery of documents, are commonly committed in the course of TEC (Higgins, Four Corners 2002).

The neglect of TEC

Despite the effects and scale of TEC, it has been woefully neglected at all levels. The UN notes that Governments tend to approach TEC solely from a natural resource management and conservation perspective (COP 2010: 10), thus neglecting to criminalise TEC, or otherwise attend to it with the same level of urgency commanded by the traditional forms of TOC. There is often “no exclusive competence on organised environmental crime” in national enforcement systems (Fröhlich 2003: iv) and the enforcement agencies responsible for TEC are usually poorly trained, inefficient and lacking in resources (Hayman and Brack 2002: 16).

Environmental crime “relies on individual states to implement national legislation and actively enforce against environmentally criminal behaviour as they occur within their borders” (Bricknell 2010: 11). In this regard, countries in the Global North tend to have extensive legislative regimes for environmental crime (see Fröhlich 2003 for a comprehensive overview of the EU, for example), but low conviction rates. An extensive study into the prosecution of TEC cases in the national courts of the EU member states found a “relatively low number of cases compared to other classical segments of organised crime” (Fröhlich 2003: i). Only 122 cases were found between 1992 and 2003 (Fröhlich 2003: i). Even when a conviction is secured, the penalties are “often inadequate to deter re-offending or disrupt established criminal networks in any meaningful way” (EIA 2007: 2). Given

¹ I acknowledge that there are various terminologies used to refer to the North/South dichotomy (e.g. first world/third world, developed/developing). In this paper, I follow the practice of the United Nations Development program which, in its 2009/10 annual report, uses the Global North/Global South terminology (UNDP).

² Manager of Interpol’s Environmental Crime Programme.

the extent of TEC and the wide range of crimes it encompasses, it seems unthinkable that such a low number of cases would be prosecuted; such is the low level of priority accorded to TEC.

In some instances however, the national legislation of Northern countries, or lack thereof, undermines other states' efforts to combat TEC. For example, when Indonesia banned certain logging activities, the failure of importing countries to also criminalise products of such activities undermined the domestic legislation (EIA 2007: 10).

Nations in the South, who typically supply the goods derived from TEC, are poorly placed to implement effective legislation, and legislation relevant to TEC is often "unclear, contradictory or [lacking] popular support" (Brack 2007: 11). Environmental laws are frequently "marred by loopholes" (EIA 2007: 2), as well as the lack of capacity for enforcement.

Meanwhile, the international community has focused heavily on the traditional TOCs, at the expense of TEC and other emerging forms of international organised crimes. Where international agreements are concluded dealing with elements of TEC, "implementation is left to national priorities at the expense of the big picture of the global control regime" (Hayman and Brack 2002: 17); national priorities that often do not include the effective counteraction of environmental crime.

The Conference of the Parties to the Convention Against Transnational Organized Crime (the Convention) has recently described TEC as "highly relevant in terms of the UNODC mandates" (COP 2010: 9). While the inclusion of TEC under the auspices of the Convention is possible, as members of organised criminal groups can be prosecuted under the Convention for their participation in an organised criminal group (article 5), few governments impose the four-year deprivation of liberty penalty required for activity to be considered a 'serious crime' (article 2). For example, the majority of States that are party to the Convention on the Trade in Endangered Species do not impose this level of penalty on wildlife criminals (Zimmerman 2003: 1684). Thus TEC is dealt with under the numerous multilateral environmental agreements regarding its constituent crimes.

The consequence of the neglect of TEC, as may be expected, is that environmental crimes are committed with impunity. The vanishingly small chance of being caught and punished for committing these crimes means that smugglers and other environmental criminals have nothing to fear. As such, investigators are often faced with "exuberant confidence" from environmental criminals (Schmidt 2004: 98). One dealer in wildlife recently commented, during an undercover meeting, that wildlife trafficking is "better than drug smuggling" (Schmidt 2004: 98). Thus, through lack of strong and focused action, TEC is perceived to be high profit and low risk (Fröhlich 2003: 4; EIA 2007: 2).

The present context

While there are causes for concern, it seems that TEC is increasingly being seen as an important issue. At the Twelfth Congress on Crime Prevention and Criminal Justice in April 2010, the Salvador Declaration acknowledged the

“challenge posed by emerging forms of crime that have a significant impact on the environment” (UN 2010: [14]). TEC has also been included as an emerging form of crime on the agenda for the fifth session of the Conference of the Parties to the United Nations Convention against Transnational Organized Crime (COP 2010).

While it is clear that TEC is beginning to arouse interest from the international community, it is not clear whether the issue will be met with the nuanced responses that are required by the unique nature of TEC. This paper attempts to analyse this unique nature, comparing TEC to the traditional TOCs, and frame future discussions of how best it can be counteracted.

Commonalities with traditional forms of transnational organised crime

Environmental crime is often by its nature transnational, and can be termed as such wherever there is a movement of illegal goods across national borders or where the effects of the crime are transboundary in nature. The transnational nature of much environmental crime is obvious: consider the distance from poacher to purchaser or forest to furniture store. TEC is conducted by a multiplicity of actors, as will be discussed, some of which are organised groups, including small amateur groups and large-scale organised criminal groups (COP 2010). Finally, environmental crimes are covered by a number of international treaties and national laws (Brack and Hayman 2001), and often involve the commission of other transnational organised crimes.

In addition to being transnational, organised and criminal, TEC also shares other similarities with traditional TOC. Firstly, TEC is, at least in part, a result of the globalisation of crime, where environmental criminals operate across “disturbingly porous” borders (Schmidt 2004: 98), facilitated by the “ease of communication and movement of goods and money... involved in environmental crime” (EIA 2008). Secondly, like other TOC, environmental crimes are ‘enterprise crimes’, rather than predatory crimes. That is, TEC is conducted as a business would be conducted, meeting a demand with an illegal supply. Thirdly, in general, this demand originates in the Global North, while supply comes from the Global South, just as with the trade in drugs and people.

Environmental crime as distinct from traditional TOC

While TEC is undoubtedly a TOC and there are similarities between TEC and the traditional forms of TOC, these similarities tell us little about how TEC should be conceptualised and policed. To say that TEC is part of globalisation and stems from Northern demand is to merely highlight the broader characteristics of TOC generally, without actually enquiring as to the nature of environmental crimes specifically and how the TEC policy discussion should proceed. Thus, while there are some superficial similarities between TEC and traditional TOC, it is the differences between TEC and traditional TOC that should guide discussions about appropriate policing options.

TEC is multifaceted

As previously noted, TEC is constituted by many different crimes, and this is reflected by their multiple foundations in international law, with separate treaties for each issue, instead of one in the case of the traditional forms of TOC, such as drugs and people smuggling. There is CITES³ for the wildlife trade, the Montreal Protocol⁴ for ozone-depleting substances, the Basel Convention⁵ for waste disposal and the Rotterdam⁶ and Stockholm⁷ Conventions dealing with hazardous chemicals.

Overall, more than 250 international and regional environmental agreements have been concluded since the first UN Conference on the Human Environment in Stockholm in 1972 (Brack and Hayman 2001: 5). Each Convention has its own mechanisms and conferences, and breeds its own distinct body of literature regarding enforcement. It should also be noted that there are still areas of TEC that are not covered by an overarching international agreement, for example illegal, unreported and unregulated fishing and logging.

Licit trade

TEC is also different to many forms of organised crime in that the illicit operate alongside a licit market; there is not a total prohibition. This is in contrast to the traditional TOC paradigm, where there is a total prohibition on the product or activity in question. For example, whereas drugs and human trafficking are prohibited and criminalised, certain species under CITES may only be criminalised if originating in specific countries, or illegally logged timber may come from a supplier that also logs timber legally.

The presence of a licit market makes it particularly difficult for those on the ground to know whether what they are confronted with is legal or not. Traffickers in endangered species, for example, can declare their products to be a different species, especially where there are a number of species of similar appearance, because different types of “sawnwood and fish fillets appear very similar to the untrained eye” (Hayman and Brack 2002: 20). They can also claim that illegally caught animals have been bred in captivity. Similarly, illegally harvested logs are frequently ‘laundered’ through products produced legitimately (Hayman and Brack 2002: 15) and illegal waste can be disposed of alongside legally disposed waste.

The technical nature of the distinctions between legal and illegal products are often beyond the capacities of ordinary law enforcement personnel who have not been specifically trained in this area, who therefore may not recognise violations of environmental law (Takizawa 1997). These complexities make it very difficult to promote legal trade while simultaneously curtailing illegal trade; Hayman and Brack

³ Convention on International Trade in Endangered Species 1972.

⁴ Montreal Protocol on Substances that Deplete the Ozone Layer 1987.

⁵ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal 1989.

⁶ Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemical and Pesticides in International Trade 1998.

⁷ Stockholm Conventions on Persistent Organic Pollutants 2001.

note that this “has been an increasingly awkward and delicate task and a growing source of frustration for law enforcement” (Hayman and Brack 2002: 16).

It is worth noting that other forms of TOC do have licit counterparts. For example, while human trafficking is prohibited, there is a licit market, the market for labour, which operates alongside the illegal practice. As will be discussed, the presence of a licit market can make detection of illegal activity more difficult.

Multiplicity of perpetrators

It is debateable whether traditional TOC is conducted largely by criminal organisations in “the journalistic sense, [where a] dictator or central office directs work of members” (Hayman and Brack 2002: 7). What is clear, however, is that TEC is definitely different from this perceived model and commentators have observed that there are numerous different types of perpetrator involved.

In Italy, for example, the term ‘Ecomafia’ has been coined to describe the high incidence of environmental crime in traditional Mafia strongholds and the involvement of criminal organisations in TEC (Legambiente 2007), while Elliot, in relation to the Asia-Pacific region, notes that there is “some opportunity poaching”, but that organised groups also operate in most areas (Elliot 2007: 504). On the other hand, Hayman and Brack note that TEC is often “committed by loosely organized networks of individuals” (2002: 7), yet in other cases “smaller groups come together for specific shorter-term purposes and do not forge long-term, permanent associations” (Takizawa 1997). With regards illegal logging, it is common for corporations to be involved in both licit and illicit activity, as their power allows them to evade regulations with impunity (Brack and Hayman 2001: 6). It is also true that corrupt government officials are also involved in many cases, and can themselves be considered perpetrators. An example serves to highlight the interaction of these actors: in 2001 a poacher apprehended in Zambia’s South Luangwa National Park had been contracted by the park’s warden to poach 100 elephants. The ivory was then supplied to an organised criminal group in Singapore (EIA 2008: 6).

Thus the perpetrators of TEC include large-scale criminal organisations, loosely organised networks, small and ad hoc groups of associates, opportunistic criminals, corrupt officials and corporations. It is clear that this multiplicity of actors has a bearing upon the development of effective countermeasures, as a diverse range of perpetrators is likely to require a diverse range of policing methods and other policies.

Perception as victimless

As has been seen, the effects of TEC are potentially wide-ranging, devastating and long-term, yet despite these impacts, there is a perception of environmental crime as victimless (Banks et al. 2007: 2). The effects of environmental crime are not always obvious or quantified, and therefore there is often a “tacit assumption” among enforcement institutions that such problems are insignificant (Hayman and Brack 2002: 6).

There are two ways in which TEC comes to be perceived as victimless. Firstly, victims are often not initially aware that they are victims. For example, local

communities may initially welcome a logging company, not realising that they are harvesting unsustainable levels of the resource, or may welcome the importation of waste, not realising it to be hazardous until problems later arise; it is often “only then that people become concerned about the crime and its impact upon them” (Interpol 2009: 4). The same is true of the wildlife trade, where individual specimens may be considered insignificant, but it later transpires that the trade cumulatively endangers the whole species (Interpol 2009: 4). Again, there are some similarities here with the illegal trafficking of human beings: often the victims are initially willing migrants, but subsequently become forced labourers

Secondly, there may not be an obvious victim that accords with the usual perpetrator-victim model that police tend to prioritise: TEC is an enterprise crime. As the example of the logging company above suggests, the victim may be a community or geographical area, or the natural environment, or, as the wildlife trafficking example shows, the victim may be non-human. This is also the case with environmental crimes that have no obvious or immediate human impact but affect society more broadly, such as the use of ozone depleting substances and the dumping of illegal waste. The problem for enforcement is that without an obvious or aware victim, there is nobody to complain to the authorities. If nobody is complaining to the authorities then the assumption that the problem is insignificant is reinforced; TEC continues to be placed “low on the priority list” (Banks et al. 2007).

The impacts of TEC

The nature of the impacts of TEC is intrinsically different that of traditional TOCs. This is because the effects of TEC are not only damaging, but are often also definitive and long lasting, even permanent. Whereas there is a potentially unlimited supply of narcotics, there is a finite stock of an endangered species. Thus, once an animal is poached, it is gone forever. Likewise, once pristine rainforest is illegally logged it is irreplaceable and when ozone-depleting substances are released they cannot be stopped from damaging the atmosphere. Whereas trafficked persons can be offered support and counselling and drug users can enter rehabilitation, rectifying the effects of environmental crime can take a very long time, if they can be rectified at all.

How should TEC be approached?

The preceding section conceptualises TEC as a multifaceted enterprise crime, operating alongside a licit market, involving a range of actors, which is perceived as victimless despite potentially drastic consequences. This conceptualisation is the first step toward framing the discussion of how TEC should be approached. This section of the paper will discuss three areas of enforcement – control of illegal trade, reduction of supply and reduction of demand – in the context of this conceptualisation. TEC is made up of numerous constituent crimes, each with their own nuances and peculiar difficulties for effective countermeasures.

It is acknowledged that strong countermeasures must be tailored to the specific problem at hand. The aim of this paper is not to enunciate such specific measures,

but rather use the commonalities between the constituent crimes of TEC, as discussed, to discern a general framework for developing strong countermeasures. However, some discussion of examples is necessary to give the proposals made below a practical foundation; examples will be discussed where relevant.

Policing the illegal trade

Most commentary on controlling TEC tends to focus, “not unnaturally, on improving enforcement” (Brack 2009 in White 2009: 491), and this paper will take the policing of the illegal trade as a natural starting point. First some relevant considerations for effective on-the-ground enforcement will be deduced from the above conceptualisation of TEC. Secondly, the extent to which policing can be effective in combating TEC will be discussed.

Prioritising TEC

A precondition of effective policing is that those that enforce the law must see TEC as a serious issue. At present customs officers tend to prioritise other illegal products, such as drugs, while police tend to prioritise predatory offences that accord with the usual perpetrator-victim paradigm, such as violent offences. This stems from the perception of TEC as victimless and a lack of awareness about its negative impacts (Schmidt 2004: 98).

Prioritising TEC is “often about awareness raising as much as anything else” (Brack 2009 in White 2009). Thus a concerted effort must be made to inform and educate enforcement authorities of the importance of the task that they are charged with. It may also be useful to tie TEC to the broader TOC problem by informing them of the links between the two, thus avoiding having to prioritise TEC over the traditional TOCs, instead recognising them as an integral part thereof.

Schmidt has noted that TEC is most under-prioritised in Southern countries: “a pervasive lack of enforcement... contributes to the growth of environmental crime, *especially in developing countries* where corruption, poverty, war, and other social problems are perceived as greater and more immediate threats” (2004: 98. *Emphasis added*). This observation requires attention to the North-South supply-demand paradigm discussed earlier. While supply for TEC comes from Southern countries, the enforcement agencies of these countries are, understandably given the pressing nature of their other priorities, the least likely to prioritise TEC. In this regard, it is imperative that Southern states are aware that TEC causes considerable damage and financial loss, such as the US\$15bn revenue lost to illegal logging mentioned previously (EIA 2008), or the tax evasion that often accompanies wildlife trafficking (UNODC 2009: 46).

Again it may be useful to posit TEC itself as being intimately linked with priorities such as corruption (UNODC 2009: 46), poverty and war (Thompson and Kanaan (2003)). In addition, as will be repeated in relation to other aspects of policing, Northern countries must accept that they create the problem, and so have a duty to provide assistance to help countries in the Global South to make it a priority.

Training and expertise

As with all TOC, TEC requires “a high level of time, financial and staff resources” to combat it effectively (Fröhlich 2003: ii). However, the complexity of environmental crime, its multifarious nature, the multiplicity of actors involved, and the difficulties caused by its overlap with licit markets, make the level of investment needed to combat it particularly high.

The UN has suggested, “efforts to understand environmental crime should not be focused only on direct enforcement at borders and should be guided by criminal intelligence-led investigations” (COP 2010: 10). Training must be offered to enforcement officials to ensure that they know how to conduct such investigations. Particular focus should be on the varied nature of the groups that conduct environmental crime.

At the same time, border policing remains important, so officers must be trained to identify illegal products. The expertise needed to verify an environmental product once it is in transit can be considerable, given the concurrent licit market, suggesting that it would be difficult and costly to train many enforcement officers to accurately assess whether a crime has been committed. Thus, a strong certification system is required that would allow a uniform set of standards to be applied pre-production, ensuring legality and reduce the burden on enforcement officers in determining legality. Examples of such certification systems are discussed below in the context of demand reduction measures.

The Salvador Declaration stated: “We encourage Member States to [enhance] technical assistance and the sharing of best practices in this area”. As with the prioritisation of TEC, training and expertise lacks most in Southern countries where it is needed most, as they “don’t have adequate institutional... frameworks to enforce treaty obligations” (Schmidt 2004: 98). Thus, while treaties like CITES are ratified with the best intentions, there is, in practice, little to no chance of the increase in enforcement capacity required to effectively combat TEC. While the Salvador Declaration neutrally suggests ‘sharing’, in reality this sharing needs to constitute a huge transfer of training, expertise and knowledge to countries in the Global South if TEC enforcement is to be effective.

Cooperation and communication

It is widely agreed that greater cooperation and communication is needed to combat TEC. The Salvador Declaration recognises the need for greater international cooperation, while Interpol states that it is “one of the greatest obstacles we must overcome” in combating TEC (Interpol 2009: 6). All TOC requires high levels of cooperation, but, it is submitted, it will need to be particularly strong due to the complexities of TEC.

The concurrent licit trade in many goods in particular dictates the need for cooperation. Offences such as illegal logging, where no international agreement exists, are defined by national laws. As laws on logging differ from country to country, it is necessary that strong communication takes place to ensure that an importing country’s enforcement agencies are aware of the exporting country’s laws. This is a lofty challenge, particularly as enforcement institutions are often ill-equipped and lacking in knowledge of their own legal regimes.

Instructive in this regard are the activities of the Association of Southeast Asian Nations Wildlife Enforcement Network (ASEAN-WEN), which aims to coordinate regional responses to illegal trafficking in wildlife. The network is a “mechanism by which countries can share information and learn from each other’s best practices” and achieve “better coordination and collaboration of law enforcement agencies” (ASEAN-WEN 2011).

An additional possibility is the establishment of border liaison offices, originally developed to counter drug trafficking. These could “bring immediate results in addressing environmental crime” (COP 2010: 10) in this regard by establishing a direct and consistent communication link between countries. A number of South-East Asian countries that utilise these liaison offices to combat drug smuggling urged the UNODC to expand their function to include environmental crime (UNODC 2010). The UNODC has responded by implementing the Partnership Against Transnational-crime through Regional Organized Law-enforcement (PATROL) (UNODC). The aim of PATROL is to broaden the use of border liaison offices to other crimes, including TEC, and broker memorandums of understanding on international cooperation between governments. The progress of these initiatives should be monitored closely: if they prove effective they could be used as models for further cross-border cooperation initiatives in the future and in other regions.

The focus of policing

Whereas all TOC involves actors moving across borders, TEC involves a wide range of actors, with commentators seemingly not in full agreement about which group is most prevalent. This creates a difficulty for policing as it complicates the issue of which groups to target. For example, attempting to locate a ‘Mr. Big’ would leave a substantial amount of TEC uncovered, as much TEC is conducted by more loose and fleeting organised groups. Yet if policing attempts to focus on all perpetrators, it is likely that resources would be spread too thinly, as is already the case.

There is, simply put, no easy answer to the question of where the focus of policing of TEC should lie. TEC is not a problem conducive to the use of a single method or focus. In addition, it is likely that the main actors in TEC will differ from region to region. As already mentioned, Italy is aware that TEC there is often conducted in concert with other TOC by highly organised criminal groups, whereas perpetrators in other regions may operate on a more opportunistic basis less conducive to intelligence-led investigations, such as sporadic poaching for tourist sales or kill-to-order wildlife crimes.

This problem would be somewhat diminished by increased prioritisation, training and cooperation, all of which will increase the capacity to identify the key actors in a particular region and target them specifically.

The role for policing

While some suggestions have been made for how TEC may be policed, it is clearly questionable whether TEC *can* be adequately combated through policing. As an enterprise crime, TEC is driven by demand and policing alone does not deal with this demand. Without curtailing the demand that makes TEC profitable, it is difficult

to see how supply will be reduced. This seemingly obvious observation has come to be the bane of the approach to other TOC, such as the trade in drugs, as heavy policing efforts have failed to stop or prevent the problem.

In 2002, more than 40 years after the creation of the narcotics convention,⁸ the EU Parliament proposed a recommendation that the approach should be radically changed, stating: “the vast majority of narcotics and psychotropic substances move freely around the world despite prohibitionist laws” and “the main effect of deploying vast resources to curb trafficking in illegal substances has been a rise in their price... which is of benefit only to organised crime networks” (European Parliament 2002). Academics have also widely acknowledged the failure of the ‘war on drugs’ (Wisotsky 1986; Journal of Interamerican Studies and World Affairs 1988; Gray 2001; Jensen 2004).

With environmental crime, this cautionary note is particularly relevant. Firstly, the prevention of further environmental crimes should be of high importance, given the often irreversible effects (UNODC 2009: 34). Secondly, the wide-ranging nature and perpetrators of TEC, and the complexity of determining the illegality of goods, suggests that the level of resources needed for this kind of intensive policing would be far too great to be practicable. It is therefore suggested that TEC requires a greater focus on demand and supply measures. This does not necessarily militate against policing altogether: the International Network for Environmental Compliance and Enforcement has noted that education and assistance, and other incentives, are only effective if they are complimented by a “credible threat of enforcement sanctions” against perpetrators (INECE 2009: 65). However, it does suggest that declaring a ‘war’ on a particular problem, and then sinking vast resources into policing alone, is unwise. The failure of the war on drugs “suggests that this policy is doomed” (Hayman and Brack 2002: 4).

Reduction of demand

Demand reduction is important for TEC as the impacts of TEC are often irreversible; it is crucial that a concerted effort is made to prevent the crime from happening. It is pertinent to distinguish here between two types of demand. There is a demand for illegal products and there is a demand for legal products that can be met by illegal products. For example, in the former category is the Northern demand for ozone depleting chemicals and demand for species prohibited under CITES, which are both illegal. In the latter category there is demand for timber, which is itself legal, but is often met by illegally logged timber. This distinction is an important one to make in terms of demand reduction strategies.

Where demand is for an illegal product, it is unlikely that demand will recede of its own accord.⁹ In such cases, an attempt should be made to reduce the demand by educating the public on the harm caused by this demand. For example, tourists who purchase wildlife souvenirs may not possess much knowledge about the impacts of

⁸ Single Convention on Narcotic Drugs 1961.

⁹ Note that demand for ozone depleting substances will recede due to the Montreal Protocol, as all equipment using the substances will eventually be phased out.

wildlife poaching or the legal status of the products. Secondly, traditional policing enforcement should be increased in such areas.

Where the demand is for a legal product, there must be systems in place to verify the legal origins of the product, and the consumer must be aware of these systems. Some examples of this can already be seen, such as the Forestry Stewardship Council's (FSC) certification scheme, which provides for certification and labelling according to an environmental standard, or the CITES certificates.

These schemes are by no means perfect, and efforts must be continually made to strengthen them and ensure that the products carrying their labels genuinely achieve the environmental outcome sought. As for informing consumers of these systems, Brack notes in this regard that public awareness campaigns are often overlooked, but can be valuable (Brack 2009 in White 2009: 491). Certainly, it is submitted, that where a consumer is demanding a legal product, a public awareness campaign could go a long way to ensuring that the consumer's demand is, in fact, met by a legal supply.

Reduction of supply

These measures, as with demand measures, are important because TEC ideally needs to be pre-empted. Reducing supply involves dealing with the "underlying economic, social and political drivers" behind TEC (Brack 2009 in White 2009: 491) and, as such, are likely to be the most difficult and expensive measures to implement.

In economic terms, reduction of supply involves making legal activity as valuable, or more valuable, than illegal activity. This primarily involves ensuring the availability of alternative forms of employment, but may also involve reforming the systems for granting exploitation rights and taxes.

Crop replacement programs have not been particularly successful in the war on drugs (Argañarás 1997; Farrell 1998, cf., Snowdon 2009), though this may be due to insufficient funding and focus on such measures. Such programs should be explored in relation to TEC as some potential may exist. For example, programs could be implemented in wildlife poaching areas that enables local people to gain a sustainable tourist income and transition from enterprise crime to a legitimate economic activity. Such a transition can be seen with whaling, where whale watching is now worth \$2.1 billion worldwide and supports 13,000 jobs (Cisneros-Montemayor et al. 2010).

The reduction of taxes, or even the implementation of subsidies, could help in some cases. In the area of hazardous waste disposal the cost of legal disposal can be very high, depending on the chemicals in question, and subsidies and lower taxes could be an effective way of encouraging correct disposal (Hayman and Brack 2002: 13).

Conclusion: towards an approach to combating TEC

This paper has conceptualised TEC, drawing lessons from TEC as a whole and organising the various policy issues involved into a coherent framework for analysis. Overall, it is clear that the approach to TEC will need to be a holistic one, both in terms of conceptualisation and approach to countermeasures. Measures to combat

TEC need to account for all the nuances of environmental crime and, as the international community begins to wake up to the problem of TEC, it is important that the failed ‘war on’ approach is not simply superimposed over the complex and unique nature of TEC.

The preeminent role of policing needs to be questioned and policing efforts must be tailored to meet the unique nature of TEC, while demand and supply reduction measures that aim to prevent environmental crimes taking place need to be implemented and strongly supported. Further research is needed into specific policies already in existence to assess whether these policies could be expanded or transposed to other areas facing similar problems. With a conceptualisation and framework for countering TEC in place, and a range of policy options available, the greatest hurdle for effectively combating TEC may ultimately be lack of political will.

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