Towards an Effective Enforcement of Environmental Criminal Law:
Re-thinking Sanctions for Air Pollution Criminals in Iraq

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Dedicated

To all of the Iraqi people who have martyred and lost their families because of wars;

For my parents who have passed away but who have paved the way for me and upon whose shoulders I stand;

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List of Abbreviations

ASEAN	Association of Southeast Asian Nations
CAC	Command and Control
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
EIA	Environmental Impact Assessment
EPI	Environment Protection and Improvement
EPIA	Environment Protection and Improvement Authority in Kurdistan
EPIC	Environment Protection and Improvement Council
EPICGs	Environment Protection and Improvement Councils in the Governorates
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GoI	Government of Iraq
HCs	Hydrocarbons
HECGs	Health and Environment Committee in the Governorates
HECP	Health and Environment Committee in the Parliament
ICJ	International Court of Justice
ICRC	International Committee of the Red Cross
IDP	Internal Displacement Population
IFG	The Iraqi Federal Government
ILC	International Law Commission
INOC	The Iraqi National Oil Company
IOM	International Organisation for Migration
IPC	The Iraqi Petroleum Company
IPCC	The Intergovernmental Panel on Climate Change
ISIL	Islamic State of Iraq and the Levant
MoE	Ministry of Environment
MoH	Ministry of Health
MoO	Ministry of Oil
NGOs	Non-Governmental Organization

N_2O	Nitrous Oxide
NASA	National Aeronautics and Space Administration
NOx	Nitrogen Oxides
O_3	Ozone
OCHA	Office for the Coordination of Humanitarian Affairs
OECD	Organization for Economic Cooperation and Development
PM	Particulate Matter
SD	Sustainable Development
SO_2	Sulphur Dioxide
UK	The United Kingdom
UN	United Nations
UNAMI	United Nations Assistance Mission for Iraq
UNCCD	United Nations Convention to Combat Desertification
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNEA	United Nations Environment Assembly
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Fund for Population Activities
UNGA	United Nations General Assembly
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations International Children's Education Fund
UNIDO	United Nations Industrial Development Organization
UNOPS	United Nations Office for Project Services
USA	The United States of America
USD	United States Dollar
VOCs	Volatile Organic Compounds
WB	World Bank
WFP	World Food Programme
WHO	World Health Organization

Abstract

This study aims at evaluating the effectiveness of the current legal framework of Iraqi air environment protection by identifying the many challenges confronting this framework and the obstacles which impede appropriate enforcement measures. One of the main issues is the overlap in Iraqi environmental laws which present judges with conflicting regulations as well as penalties which inadequately reflect the severity of the damage resulting from wilful breaches of the law. Conflicting laws also lead to lengthy delays in rectifying the misdemeanour and in limiting the damage being caused to the environment. The study reveals that inadequacy of enforcement frequently arises from current environment laws being subsumed by general law which lacks a specific focus on contemporary environmental realities.

The study aims at assessing the extent to which current criminal law provides an effective system for protecting the environment from air pollution crime and whether its current provisions are appropriate for the prevention and sufficiently punitive as a deterrent for the level of environmental crime committed.

Two principal issues are considered; first, the current criminal sanctions are critically evaluated to determine their effectiveness as enforcement instruments and alternative enforcement tools are considered; second, in those situations where criminal sanctions have a role to play, the thesis considers how their application can be improved to protect the environment.

The study concludes with the observation that Iraqi environmental criminal law is principally directed towards deterrence and considers alternatives to criminal penalties which may be more effective for protecting the environment. These alternatives may be preferable to current dependency on command and control which is the prevailing default approach. The imposition of criminal sanctions would then become more effective through being reserved for the most serious breaches.

The thesis adopted a qualitative research approach of a doctrinal nature which did not entail an empirical method but relied on the collection of data from primary and secondary sources.

This thesis can make a positive contribution to bridging the gap in environmental law formulation and also contribute to the specifically to an environmental criminal law of air pollution reform in Iraq, an area that has received comparatively little attention to date.

CHAPTER ONE
INTRODUCTION

1.1. Introduction

Over recent decades, the people of Iraq have suffered from many disastrous events, both natural and man-made. It was the latter type of catastrophic events which have had the most adverse effects. These included isolation from the international community and economic sanctions, wars and reckless political decisions. As stability has begun to be restored, a major concern is a damage that has been caused to the environment. Protection of the environment has become an urgent issue for Iraqi people, as individuals, as communities and also at the government level.[1]

To halt the deterioration of the environment, various strategies are required but these strategies can only be effective if they are supported by a robust legal, legislative and executive framework, an effective judicial and executive authority and procedures for ensuring that environmental laws are enforced.

Responsibility for protecting the environment is shared across a variety of institutions in a hierarchy which includes the Ministry of Environment (previously) the Ministry of Health and Environment (currently). This hierarchy of government institutions has many aims and objectives which includes the sustainability of the nation's natural resources and the implementation of environmental protection regulation by means of a compilation of laws that are, at best, only partially integrated.

This hierarchy includes: the Ministry of Environment (MoE), the Health and Environment Committee in the Parliament (HECP), the Environment Protection and Improvement Council (EPIC), the Environment Protection and Improvement (EPI), the Environment Protection and Improvement Authority in Kurdistan (EPIA) and the

[1] Iraq Ministry of Environment, *The National Environmental Strategy and Action Plan for Iraq (2013 – 2017)* XI <www.natureiraq.org/uploads/9/2/7/0/9270858/1_en.pdf> accessed 29 January 2018

Environment Protection and Improvement Councils in the governorates (EPICs). The aims and objectives for integrating these bodies have, however, been only of limited success to date, being confined mainly to licensing control and monitoring of compliance with the conditions of the licence.[2]

Thus, despite the existence of a framework of environmental laws, albeit in need of closer integration, compliance with these laws and public support for them still leaves much to be desired.[3]

Laws and regulations are the expressions of the various institutions' attempts to put into practice their aims and objectives as well as ensuring compliance with various international agreements, conventions and covenants to which the Iraqi Government has been a signatory. However, these laws are in need of review and reform as well as closer integration. Additionally, attention needs to be paid to effective measures for enforcement of legislation.[4]

1.2. Statement of Problems

Iraq is a developing country with growing air pollution problems. Air quality is poor in all parts of Iraq. The most severely affected are the oil-delivering industrial urban territories, (for example, Basra, Kirkuk, Baghdad and Baiji) where there is a mix of: gas flaring, oil refining emanations, industrial discharges (particularly chemicals and concrete), power generation emissions, traffic fumes, waste pollutants, such as burning of solid

[2] Iraq Ministry of Environment (n 1) 21-22
[3] Ibid
[4] إسماعيل البديري وحوراء إبراهيم، الأساليب القانونية لحماية البيئة من التلوث، دراسة مقارنة، مجلة المحقق الحلي للعلوم القانونية والسياسية، 2010)) [Al-Budairi Ismail and Ibrahim Hawra, Legal Methods for Protecting the Environment from Pollution, Comparative Study, *Journal of the Jeweler of Legal and Political Sciences*, (2010)88]

remnants and trafficking of toxic waste and hazardous chemicals, including the storage of these dangerous chemicals and trying to get rid of them illegally.[5]

Additionally, individuals or institutions have established industrial or oil installations near the cities, which are devoid of the most basic means of environmental safety. It should be noted that these installations have contributed to the spread of toxic dust and discharge of toxins into the air.[6]

Elevated pollution levels[7] have been associated with a number of health issues, including heart disease and lung cancer.[8]

All the above-mentioned destruction of the environment happened even though Iraq had mechanisms in place to combat and control air pollution. These problems became more widespread because of the weak deterrents and ineffective enforcement in environmental legislation against violators.[9]

To impose legal protection from air pollution, the pollution must be from a human source. By acting in this manner, pollutants resulting from nature activities, for example, volcanoes (the subject of another science) are not being considered. The reason for confining protection to human activities is so that it can be determined who is responsible for approval of necessary follow-up against polluters, and what norm is adopted to identify the extent of damage to the air.[10]

Despite the multiplicity of laws related to environmental protection in Iraq, those were characterized by non-comprehension, lack of consistency, dispersion and weak

[5] Fadi M. Doumani, "*Cost of Environmental Degradation*." *Environmental Economic Series* 97 Ministry of Environment of Iraq (2012).9.
[6] Nature Iraq, 'Challenges Facing Iraq's Environment', *Nature Iraq Pub*. (2004) 3-4.
[7] O'Brien Flora, *Air Quality in Scotland*. Scottish Parliament Information Centre: Scottish Parliament Information Centre (2016).1.
[8] Birgit Lode, Schönberger Philipp and Toussaint Patrick. "Clean Air for All by 2030? Air Quality in the 2030 Agenda and in International Law." *Review of European, Comparative & International Environmental Law* 25.1 (2016): 27-38.
[9] Ibid.
[10] World Health Organization. *The world health report 2000: health systems: improving performance*; World Health Organization, (2000)10; World Health Organization (WHO). "*Air quality guidelines for Europe*." (2000)14

prescribed criminal sanctions, which vary according to the gravity of the environmental crime.

Environmental law in Iraq suffers from a shortage of compliance and implementation. This shortage still has prominence as the penalty for not complying is insufficient and victims do not get sufficient compensation, also environmental crime some time attracts a civil or administrative rather than a criminal punishment.[11]

The preliminary question that has to be decided relates to the use of criminal sanctions in enforcement and what can criminal sanctions achieve that cannot be achieved by, say, civil and administrative laws? It is necessary to consider why regulators would use criminal sanctions. This subject will be covered in chapter five.

In this regards the Iraqi Penal Code does not foresee any provision expressly punishing environmental damage or pollution; nevertheless, the Penal Code contains various provisions which, although not directly connected to the protection of ecological values, can be used where a damage to the environment occurs (for instance, Article 491 related to endangering other persons; Article 497 concerning involuntary offences against life or physical integrity of the person).

The environmental law introduces rules applicable to the different environmental components and contains provisions punishing the infringement of the above-mentioned rules with criminal sanctions. Except cases that directly punish environmental pollution (for instance, the Law on the Protection and Improvement of the Environment, No. 27 of 2009), these provisions are mostly accessory to the administrative rules and consist in failing to comply with an administrative decision or an administrative regulation.

Having recourse to criminal law can have certain advantages including the deterrent effect which public exposure of a criminal conviction might attract. The stigma attached to

[11] 15 (2014) ليلى الجنابي. العقوبات القانونية للتلوث البيئي: تحليل مقارن. العراق: جامعة بغداد. [Al-Janabi Layla. Legal Sanctions for Environmental Pollution: A Comparative Analysis. Iraq: Baghdad University. (2014).15 translated from Arabic to English by the author]

conviction for a criminal offence is likely to be much greater than for a civil and administrative conviction.

The result is that imprisonment is almost invariably only a criminal sanction and is not available as an administrative or civil sanctions, and the realisation that monetary sanctions are insufficient to inhibit pollution of the environment leads to the inevitable conclusion that environmental regulations can only be enforced by a system that is not dependent only on administrative or civil sanctions and that this system must be the criminal law.

The enforcement of environmental laws in Iraq achieved either by means of command and control mechanisms for example, criminal and administrative measures or through alternative mechanisms such as regulatory or civil measures.

Where environmental harm is concerned, though, the majority of environmental violations do not end in criminal charges or penalties, but are dealt with in ways that are regulatory, civil, or administrative.[12]

Whereas criminal measures are aimed at punishing those who occasion environmental harm, administrative measures are aimed at compelling offenders 'to comply with the law and, where they have breached it, to remedy the environmental harm caused.'

Many environmental offences would be instrumental pollution often occurs, for example, as a side effect of production and to save costs.

The significance of this view is that, other than for those environmental offences which give rise to society's moral condemnation or disapproval, and for which retribution may be regarded as a legitimate justification for invoking the criminal law, criminal sanctions are used in response to all other environmental offences as a deterrent.[13] If the criminal

[12] Avi Brisman and South Nigel. "'Life-Stage Dissolution', Infantilization and Antisocial Consumption: Implications for De-responsibilization, Denial and Environmental Harm." *Young* 23.3 (2015): 209-221.

[13] Duncan Chappell and Norberry Jennifer. "Deterring polluters: The search for effective strategies." *UNSWLJ* 13 (1990): 97.

sanction is used for the purposes of deterrence, the idea is that the offender and the general public are to be deterred from committing environmental offences. These two purposes are encapsulated in the ideas of special or specific deterrence (deterrence of the individual in question) and general deterrence (deterrence of society at large).[14] Effective enforcement is important when deterrence is the goal, and the public must be aware of penalties being utilised since '*ultimately, one cannot fear what turns out to be a paper threat*'.[15] Moreover, laws that are not enforced promote 'cynicism and disrespect for the law, particularly the criminal law'.[16] At the same time, it is important that the threatened penalty corresponds with the harm sought to be prevented. If relatively minor offences are punished by heavy penalties, this will lead to disrespect for the law, especially in a society where there is a perception that 'real' criminals are either avoiding arrest or prosecution altogether, or are being treated leniently by the legal system. On the other hand, if penalties are too low, the goals of deterrence will be undermined, especially in the case of corporate offenders. As Lazarus suggests, '*absent the possibility of criminal sanctions, particularly those directed at individuals, companies may view sanctions for violating environmental laws as mere costs of doing business*'.[17]

The default enforcement measure for different spheres of law has traditionally been criminal sanctions such as fines or imprisonment. In relation to environmental law the situation is no different.[18] Although legal opinion is that a criminal sanction plays an important role as a deterrent[19] because it 'brands the offender with the stigma of being a

[14]C Reasons. "Crimes against the environment: Some theoretical and practical concerns." *Crim. LQ* 34 (1991): 86.
[15] Susan L Smith. "Doing Time for Environmental Crimes: The United States Approach to Criminal Enforcement of Environmental Laws." *Environmental and Planning Law Journal* 12 (1995): 168-168.
[16] Sanford H Kadish. "The crisis of over criminalization." *The Annals of the American Academy of Political and Social Science* 374, no. 1 (1967): 157-170.
[17] Richard J Lazarus. "Assimilating environmental protection into legal rules and the problem with environmental crime." *Loy. LAL Rev.* 27 (1993): 867.
[18] M Kidd, Paterson A and Kotzé L. "Criminal measures." *Paterson A and Kotzé LJ Environmental Compliance and Enforcement in South Africa: Legal Perspectives (Juta Cape Town 2009)* (2009): 240-265.
[19] Ibid.

criminal and provides for punishment, including imprisonment, which cannot be imposed by any other means'.[20]

In Iraq the principal types of penalties are either imprisonment and/or the imposition of fines. The period of imprisonment is typically 1 to 3 months and can only exceed 6 months in extraordinary situations. More common is the imposition of fines, which range from 1 million dinars (£617) to a maximum of 20 million dinars (£12,333).[21]

One meaning of the *ultimum remedium* doctrine would be that recourse should only be had to criminal law when other forms of legal action are fruitless and it may well be true that, while there are convincing reasons in theory for the use of criminal punishments, it is possible for civil law sanctions or administrative fines to deal satisfactorily with some minor licence condition violation that the company has committed even though it operated in good faith.[22]

According to Alaa Abdul Hadi, the reason why criminal conviction attracts social stigmatisation to a greater degree than an administrative penalty is that the former requires a greater burden of proof and consequently greater reliability in terms of actual proven guilt.[23]

In the literature a number of reasons are proposed to justify why criminal law is more effective in controlling certain externalities. One reason put forward is that civil law is not so effective in internalising harm. This is because civil law, in general, and tort law, in particular, does not offer the victim adequate redress for the harm which has been incurred. Civil law lacks the capacity to adequately compensate the victim for the injury sustained. For example, no level of pecuniary compensation can ever redress the loss of a limb as the victim

[20] [Jumaili Fathia, Crime, *Society and the Offender, Jordan*, 2002, p 192] ;فتحية الجميلي، الجريمة والمجتمع ومرتكب الجريمة، الأردن، 2002، ص١٩٢ [Al Gohary Mohamed et al., *Sociology and Social Problems*, Cairo, Al Omrania Press, 2000, p287]. محمد الجوهري وآخرون، علم الاجتماع والمشكلات الاجتماعية، بالقاهرة، مطبعة العمرانية،2000، ص 287;

[21] Law on the Protection and Improvement of the Environment No. 27 of 2009 art 33 & 34

[22] Al-Budairi Ismail and Ibrahim Hawra (n 4) 10

[23] [Abdul Hadi Alaa. "A field study on social stigma and its relation to crime return". *Research and Studies Program.* (2016).7-12]. علاء عبد الهادي، دراسة ميدانية حول الوصمة المجتمعية وعلاقتها بالعودة الجريمة، برنامج البحوث والدراسات 2016

can never be restored to their pre-injury condition. Thus, although the injury did not directly result in pecuniary loss, the non-pecuniary loss is substantial. Even so, the pecuniary compensation awarded under civil law is frequently too low to serve as an effective deterrence from an economic point of view.[24] For this reason, some commentators have argued the principal aim of criminal law in such situations is not compensation but deterrence.[25]

There are, nonetheless, several points against the use of the civil law for realizing pollution control objectives. Perhaps the most passionately argued is that the civil law does not effectively communicate the nature of the evil associated with environmental wrongdoing.

Administrative penalties sometimes called civil penalties are another type of administrative measure. In general, these are monetary penalties imposed by the regulator, without the intervention of the courts. Administrative penalties have been described as a hybrid sanction, as they have both criminal and civil law elements. The resemble criminal law fines because they are financial and punitive in nature, but the process in which they are imposed is civil.[26] Given the lower standard of proof required for administrative penalties a balance of probabilities and the stigma and coercive nature of criminal prosecution, administrative penalties should be used for environmental law violations that are not egregious enough to warrant criminal prosecution.[27]

In principle, a monetary sanction can be both administrative and criminal administrative agencies are unable to impose sanctions of a non-monetary type (such as, imprisonment).

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[24] Michael G Faure. *Compensation of non-pecuniary loss: An economic perspective*. na, 2000. 143-159
[25] Robert Cooter. "Prices and sanctions." *Columbia Law Review*84, no. 6 (1984): 1523-1560.
[26] Abdulkadhim, Asmaa. "Air Pollution and Its Governing Legal Administrative Mechanisms in Iraq." *JL Pol'y & Globalization*62 (2017): 82.
[27] Laura J. Kerrigan, , and others. "The Decriminalization of Administrative Law Penalties-Civil Remedies, Alternatives, Policy, and Constitutional Implications." *Admin. L. Rev.* 45 (1993): 367.European Committee on Crime Problems the Contribution of - Criminal Law to the Protection of the Environment (1978):17.

The fact is, though, that imprisonment is an unusual response to crime against the environment, so that while the deterrent effect may be significant, it is unlikely to occur very often since sentences of imprisonment are so infrequently imposed for environmental offenders.[28]

The result is that imprisonment is almost invariably only a criminal sanction and is not available as an administrative sanction, and the realisation that monetary sanctions are insufficient to inhibit pollution of the environment leads to the inevitable conclusion that environmental regulations can only be enforced by a system that is not dependent only on administrative sanctions and that this system must be the criminal law.[29]

In principle, financial sanctions can be criminal as well as administrative. In the absence of other factors, administrative procedures are preferred as being much less costly than criminal procedures and administrative fines can, as part of '*administrative penal law*',[30] be the result of fairly simple procedures where the threshold of proof is usually quite low.[31]

There are two significant reasons why administrative law is not able to replace criminal law totally.

The first is that, as environmental pollution is, in practice, usually detected only rarely, any sanction likely to deter it would have to be extremely high. The fact that it might well be so high that the offender could not afford it would make it less useful. There is also

[28] Carole M. Billiet, and Rousseau Sandra. "How real is the threat of imprisonment for environmental crime?" *European Journal of Law and Economics* 37.2 (2014): 183-198.

[29] Michael G Faure., Koopmans Ingeborg M., and Oudijk Johannes C. "Imposing criminal liability on government officials under environmental law: a legal and economic analysis." *Loy. LA Int'l & Comp. LJ* 18 (1995): 529.

[30] The expression '*administrative penal law*' may be confusing to some who consider '*penal*' synonymous with '*criminal*'. In the literature, this notion is used to refer to a system whereby administrative authorities impose penalties.

[31] Anthony Ogus, and Abbot Carolyn. "Pollution and penalties." *An introduction to the law and economics of environmental policy: issues in institutional design*. Emerald Group Publishing Limited, 2002. 493-516; Anthony Ogus, and Abbot Carolyn. "Sanctions for pollution: do we have the right regime?" *Journal of environmental law* 14.3 (2002): 283-298.

the fact that environmental pollution is often by corporations, and they are almost always subject to limited liability.[32]

The risk is that the entire assets of the company may be insufficient to meet the costs arising from environmental pollution. This would also be true in criminal law, where – once again, to counterbalance the effect of the low rate of detection the optimal fine would have to be very high and might well exceed the firm's assets. In fact, it so often is the case that the optimal monetary sanction for deterrence is greater than the offenders' assets that begin to see the necessity of non-monetary sanctions, including imprisonment.[33]

It follows that, despite their advantage of lower administrative cost, financial sanctions should only be preferred where the risk of insolvency can be managed. Also to be borne in mind is that, since the threshold of proof is lower, the likelihood of an administrative fine being imposed is considerably greater than the likelihood of a criminal fine, so that it is not necessary for administrative fines to be as large as criminal fines (a possible solution to the problem of insolvency).[34]

Let us not forget that one of the reasons for the introduction of criminal law was the low rate of detection. Couple that with the insolvency problem and it is possible to understand why the need for criminal sanctions will not be removed simply by the introduction of punitive damages to increase the amount of compensation. In fact, insolvency problems arising from monetary sanctions can have the effect of making the person responsible for environmental harm proof against judgement, so that deterrence can often only be achieved through sanctions that are not monetary in nature. Administrative

[32] Henry Hansmann, and Kraakman Reinier. "Toward unlimited shareholder liability for corporate torts." *Yale Law Journal* (1991): 1879-1934; Wouter HFM Cortenraad. *The corporate paradox: economic realities of the corporate form of organization*. Springer Science & Business Media, 2012.
[33] Abdulkadhim, Asmaa (n 26) 82.
[34] Michael Faure. "Environmental crimes." (2009): 330-333

proceedings cost less than criminal proceedings, but criminal proceedings (with professional lawyers in charge of investigations) can be a lot more accurate.[35]

This matters because the purpose of criminal law is not just the application of optimal sanctions against the guilty but also the avoidance of punishing innocent people, which is described as "*the goal of reduction of error costs*."[36] Error cost is, clearly, much higher when there is a possibility of serious sanctions including imprisonment, rather than only monetary sanctions, and so it is understandable that the choice of less costly administrative proceedings is made whenever a wrongful conviction would not lead to too high an error cost. It can also be argued that avoiding punishment of the innocent is also a goal of administrative procedures, notwithstanding the lower standard on which they operate, and this explains why administrative law is used in cases where effective deterrence is likely to result from fairly low penalties.[37]

The literature therefore holds out a fairly straightforward policy lesson, which is that, where fairly modest sanctions are likely to deter environmental polluters, using administrative solutions is justified, but where there is a combination of a low detection probability and high social harm coupled with high potential profit for the polluter, the need is for a more severe sanction and criminal procedures, though expensive, may be justified to reduce error costs.[38]

In general, Iraqi laws are currently ineffective in deterring acts injurious to the environment. Deterrence tends to operate differently for small and large scale perpetrators.

[35] Ibid
[36] Thomas J Miceli. "Optimal prosecution of defendants whose guilt is uncertain." *JL Econ & Org.* 6 (1990): 189.
[37] Michael Faure (n 34) 326.
[38] Roger Bowles, Faure Michael, and Garoupa Nuno. "The scope of criminal law and criminal sanctions: An economic view and policy implications. *"Journal of Law and Society* 35.3 (2008): 389-416.

Large corporations are less deterred by financial penalty than by adverse negative media portrayal unless such financial penalties are severe.[39]

On the other hand, small-scale polluters are less deterred than larger scale polluters, because of the scarce amount of the penalty is imposed would not deter them from shifting their operations to other pursuits due to the greater flexibility they enjoy, even to the extent of geographical relocation. This may result in convicted individuals evading their penalties as they can disappear and be difficult to trace.

In this regards there is no definition of environmental law in Iraqi law, nor are its elements identified.[40]In fact Iraq is among those countries that has yet to enact a law that defines the environmental crime and its elements, because the Iraqi legislature does not distinguish between environmental crime and other modern crimes and therefore has the same elements, which include the conduct or the behaviour criminalised by law; the criminal's knowledge that his conduct or behaviour is criminal[41]and the criminal's intent to commit the crime.[42]

Finally, for an above explanation this is the reason for why the enforcement of environmental law criminal is such a problem in Iraq to protect the air environment.

1.3. Research Purpose and the Significance

This research as a piece of legal research because it does not stop with the analysis of air pollution problem and sources in Iraq, but it sheds light on why even the current

[39] Not to mention the matter of estimating environmental damages, particularly in the case of natural resources. Normally, in environmental offences *per se* criminal law waives exact assessment of damages to the environment.

[40] 90 :(1980) مصطفى العواجي، المسؤولية الجنائية في المؤسسة الاقتصادية. بيروت: مؤسسة نوفل[AL-Awaji Mustafa, *Criminal Responsibility in the Economic Enterprise* (Nofal Foundation 1980) 90; translated from Arabic to English by the author]

[41] Ibid (n 21) art 33

[42] ادم الغريري، حماية البيئة في جرائم المخالفات، مجلة جامعة تكريت للعلوم القانونية والسياسية العدد١/ ٢٠١٠,٣٨٢[Al Ghurairi Adam, Environmental Protection in Offenses, *Tikrit University Journal of Legal and Political Sciences*. vol.1/ 2010.382 translated from Arabic to English by the author].

inadequate legal regime in Iraq has failed to provide the level of protection, as well as why if other factors, such as issues of enforcement or implementation of Iraqi legislation, are not urgently addressed more robust or stringent legislation might fare no better and is also likely to fall short in ensuring that the air environment is adequately protected.

On the other hand, if somebody in Iraq emits pollutants into an air, that person must comply with standards provided by regulations in terms of the Law on the Protection and Improvement of the Environment, No. 27 of 2009. These standards set down maximum permissible levels for various substances in the atmosphere.

If the person fails to comply with these standards, should he or she be prosecuted for a criminal offence? Alternatively, is there another way by which the transgression can be addressed?

This is the sort of question that has been faced by regulators since environmental law began to burgeon. Traditionally, the usual mode of enforcing regulatory provisions, including environmental legislation, has been the so-called 'command and control' model, which approximates the Austinian vision of law as a series of commands backed up by threats. The law may, for example, provide that nobody may litter and back up this prohibition by providing for a certain penalty (usually fine or imprisonment) for contravening the provision.

According to this approach, the producer of atmosphere who breaches the Act regulations in the example above should be prosecuted.[43]

The question of the enforcement of environmental law is not only of academic interest. Despite the growing number of environmental laws, particularly in Iraq and other developing countries, there is frequently aired discontent with the apparently lax way in which they are enforced. This is the principal impulse behind this thesis how can enforcement of environmental law be made more thorough? If the reason for lack of enforcement is a

[43] Keith William Diener. "A Defence of Soft Positivism: Justice and Principle Processes." (2006).5-7

combination of lack of political will, lack of resources and similar shortcomings on the part of the regulator in a particular jurisdiction, there is not a lot of scope for improving the situation by amending the law, which would render a study such as this of little practical usefulness. If, however, the way in which the law provides for enforcement is cumbersome, time-consuming and thereby amounts to a disincentive for regulators to use it, then an analysis of how to improve the enforcement provisions of environmental legislation is a fruitful exercise.

Nevertheless, many countries have utilised civil or administrative sanctions to encourage conformity to environmental laws, because having a wide range of sanctions is often considered more effective than the traditional penal sanctions of fines and imprisonment. Yet, the concern about the increasing number of more serious cases of pollution has increased the urgency of law reform to increase the deterrence effect by means of fines more commensurate with the seriousness of the crime. These reforms assess the effectiveness of administrative and civil laws in the past. Innovative approaches to sanctions include exposure to adverse publicity, confiscation of proceeds of crimes, redress mandates, enforcement measures such as temporary cessation of business activities, complete shutdown of business activities in the most serious cases and unpaid service within the community.

Administrative sanctions are common in many countries. These can include pecuniary fines or seizure of proceeds of the illegal activities and orders to pay compensation. Also included are orders to clean up and the limitation or complete cancellation of licences to practice. Similar sanctions are available in civil law as remedies.

1.4. Research Aim and Objectives

The aim of this study is to examine the enforcement of the environmental criminal law of air pollution in Iraq in ensuring the rights to a clean and healthy environment as specified under the Iraqi Constitution.

This study is also premised on certain objectives which include:

- To examines the environmental problems caused by air pollution in Iraq,
- To critically analyse the existing environmental laws and related provisions of air pollution in Iraqi legislation,
- To discuss the types of sanctions imposed on polluters in Iraqi legislation,
- To evaluate the role for environmental criminal law in the enforcement of air pollution crime and the purpose it achieves and
- To review the strengths and weaknesses of using criminal law to enforce environmental law and alternatives to the criminal sanction.

1.5. Research Questions

The principal research question addressed in this thesis is the enforcement of environmental criminal law in Iraq is sufficient for dealing with air pollution?

The sub-questions to be answered in achieving the goal of this research are as follows:

Sub-Q1: What is the actual environmental air pollution status in Iraq?

Sub-Q2: Is the current environmental laws in Iraq adequate for achieving the protection of the environment from air pollution?

Sub-Q3: Are the penalties for air pollution offences adequate?

Sub-Q4: What are the alternative penalties which should be considered for dealing with offenders?

Sub-Q5: Are criminal sanctions against polluters suitable to ensure 'effectiveness' of Iraq environmental law of air pollution?

1.6. Research Methodology

This thesis adopts a qualitative research method of a doctrinal nature. Qualitative research is essentially an interpretative approach to understanding a phenomenon in which the author is intimately involved.[44] This research begins with a 'doctrinal' or 'black letter law' methodology. This means that part of the research involves an analysis of the legal regulations under the environmental laws and their rational coordination or else their disjointed nature by examining the issues, the words used in formulating the laws and the range of interpretations made possible by the words used. In adopting this approach, note is also made of scholarly opinion. Thus, the author can critically analyse various meanings, their underlying principles and implications.[45]

Thus, by adopting a doctrinal research approach, the author is embarking on a purely theoretical research that consists of either simple research aimed at finding a specific statement of the law, or else aiming at legal analysis with greater complexity and depth. Essentially, it is a library-based research that sets out to find the "one right answer" to certain legal issues or questions.[46]

Nevertheless, this study is not interdisciplinary and merely confined to answering the research questions from a wholly legal perspective; rather the research utilises a set of

[44] Parker Ian, 'Qualitative Research' in Peter Banister, Erica Burman, Ian Parker, Maye Taylor, Carol Tindall (eds), *Qualitative Methods in Psychology: A Research Guide* (OU 1994) 2.
[45] Salter Michael and Mason Julie, *Writing Law Dissertations: An Introduction and Guide to the Conduct of Legal Research* (Pearson 2007) 49.
[46] Terry Hutchinson and Duncan Nigel. "Defining and describing what we do: Doctrinal legal research." *Deakin L. Rev.* 17 (2012): 83; Emerson H. Tiller and B. Cross Frank. "What is legal doctrine?" *Nw. UL Rev.* 100 (2006): 517; Khushal Vibhute and Aynalem Filipos. "*Legal Research Methods. Teaching Material*." (2009).6; Jain, S. N. "Doctrinal and Non-doctrinal Research." *New Delhi, India* (1972).487

interpretative tools and methods in order to assess a particular area of the law.[47] Therefore, the thesis does not embrace any strong interdisciplinary aspects as this would expand the parameters of the thesis beyond the scope of what was intended and would render the thesis difficult to defend.[48]

Accordingly, the research is not empirical in nature but relies on the analysis of data collected from primary and secondary sources within the remit of a doctrinal study.

In carrying out the legal analysis, this research shall cover primary sources by delving in-depth into the legislative instruments governing the Iraq air pollution and environmental protection. These will include inter alia the Iraqi Constitution of 2005, Law No. 27 of 2009 on the Protection and Improvement of the Environment, the Consultative Council for the Coordination of Policies and Programs that Affect the Environment No. 1/2005, Law No. 37/2008 on the Ministry of Environment, Regulation No. 4 of 2012 for the Protection of Ambient Air Quality, Instruction No. 3/2012 on National Emission Standards, Law No. 89 of 1981 on Public Health as amended, Oil and Gas Law of 2007 and 2011, Civil Law No. 40 of 1951, Penal Code No. 111 of 1969(amended in 2010) and International Conventions and Treaties on Environmental Protection Approved by Iraq. In addition, include some laws which are now outdated and no longer valid. In comparing these laws to the current legislation, the focus will be on those elements of the original laws that have been revoked or amended by the Iraqi legislator to better align with current realities.

In addition to the primary sources detailed above, this study also extensively analyses Iraqi environmental reports as well as considering secondary authorities which provide insights into the environmental protection issue. Recourse is had to legal articles, journals, practitioner books on the subject matter in question, news reports, general articles and on-line resources.

[47] Vick Douglas, 'Interdisciplinary and the Discipline of Law' (2004) 31 *JL & Soc* 163-165.
[48] Terry Hutchinson and Duncan Nigel (n 46) 83-84.

Where the author refers to Arabic language materials, he relies on the official, unofficial, or own translation. The Iraqi laws on which the present author is reliant are available in English versions under official translation. With regard to the Civil Code No. 40 of 1951, the Penal Code No. 111 of 1969, the Law on the Protection and Improvement of the Environment, No. 27 of 2009 the present research will adopt a copy of the official English translation that is available online at the homepage of the Iraqi Governance Law Library, Iraqi Parliament and the Iraqi Official Gazette. With regard to the Iraqi Permanent Constitution 2005, the research will adopt a copy of the official English translation that is available online at the homepage of the Iraqi government.[49]

On the other hand, in case of an absence of environmental cases before Iraqi courts, the study will rely on case law collated from other legal systems that are similar to the Iraqi legal system for instance. This is not as a comparative measure but as an indication as to how the provisions can be interpreted in practice. It would add evidence and depth to the analysis.

1.7. Research Limitations

A major barrier which faced this study was the lack of Iraqi sources and also some linguistic problems because the majority of documents has to be translated by the author from Arabic to English.

This study was also challenged by the scarcity of materials in terms of academic discussions on this issue, particularly those relevant to the Iraqi context. To the best of the author's knowledge, there is no study on this subject which has ever been conducted before. A wish to contribute to the knowledge of literature in this area also functioned as one of main reasons for undertaking this study and so, while the study has concentrated on inclusion of

[49] The homepage of the Iraqi government, available at <http://www.cabinet.iq/default.aspx> accessed 20 November 2014.

information that is both accurate and current, attempts have also been made to include developments of particular interest.

In spite of it being important to gather data from primary sources, gathering evidence does have drawbacks which need to be countered before research is carried out. In terms of documentary sources, pre-trial decisions, access to investigations reports, and decisions on sentencing can be troublesome if databases are unavailable to the public which can be used to get and choose criminal cases of relevance (with the exception of decisions of the Supreme Criminal Court) or different judicial file access.

Gaining criminal file access in Iraq requires authorisation from the Domestic Court Archives. Access to archive data and choosing cases of relevance from the judicial archive takes a long time to be approved and can be impractical. This is because only limited access to criminal files in district courts is available and documents not in an e-format and criminal documents regarding crimes related to pollution can be recorded under other crimes (e.g. forgery of public deeds, corruption, and economics).

1.8. Contribution to Knowledge

The goal of this research addressed something that is lacking in the existing literature this means addressing an unanswered question. In addition, presenting a major piece of new information in writing for the first time. Also synthesizing information in a new or different way.

This work differs from all others, specifically in Iraq, and is distinct as a piece of legal research because it does not stop with the analysis of air pollution problem and sources in Iraq, but it sheds light on why even the current inadequate legal regime in Iraq has failed to provide the level of protection, as well as why if other factors, such as issues of enforcement or implementation of Iraqi legislation.

This research contributes to existing knowledge on the effective enforcement of environmental criminal laws of air pollution in Iraq in the following innovative ways.

This thesis proposes an all-inclusive and thorough air pollution law for Iraq and outlines how it should be formulated. Some authors propose a set of environmental laws applicable to air pollution but without specifying precisely what form it should take. Alternative approaches focus on the application of current national laws. The current study emphasises the need for air pollution laws specifically created for Iraq but also embracing international air pollution agreements. These rules should be compatible with Article 114 and 33 of the Iraqi Constitution of 2005 and should aim at ensuring the rights to a clean and healthy environment as specified under the Iraqi Constitution.

It is, therefore, this work might contributing to bridging the gap in the environmental criminal law formulation and implementation, the work will play an important role in the bridging of the knowledge gap concerning the air pollution crimes, the effective sanctions and the air pollution harm victims in Iraq.

It could be generalised on both researchers interested in environmental protection laws and researchers interested in tackle air pollution nationally and internationally to provide clean air for our and next generations. Also, could generalised on practitioners such as NGOs.

This will be a new platform for building new research in criminal environmental protection and also provide a source for environmental researchers to take the subject in different angels and highlight more gaps and rise more questions to be tackled to provide better control on air pollution partially at least.

In a same manner as researchers the suggestions and the outcome here will help the practitioners to suggest legal reform that could be risen and followed up to the legal committees for example which could be suggestion to vote on in parliament to form new legislation that could help tackling this problem over next years.

1.9. Ethical Considerations

According to the rules and regulations of the University of Salford about ethical approval, since this research is based on secondary research, there is no need for ethical approval.

1.10. Research Structure

This research is structured so that each chapter is dedicated to a specific aspect of this study area while ensuring that the overall research aim is achieved.

This first chapter has been introductory in nature by presenting the research statement of problems, purpose, and the brief review of the academic literature, aim, objectives, questions, methods and the contribution to knowledge. The second chapter examines the Iraqi background to environmental pollution and how this issue has developed over time. In addition, explores the extent of air pollution in Iraq and the impact of air pollution on the environment and its effects on human health are examined as well as identifying existing and potential sources. The third chapter examines national laws dealing with air pollution in the country and the international and regional conventions and treaties on air pollution control which have either been signed or ratified by Iraq. It will be shown that Iraqi environmental legislation is, for the most part, firmly rooted in the 'command and control' paradigm, with few exceptions.

This is then followed, in chapter four, by a consideration of the types of sanctions provided by the environmental law of air pollution in Iraq. This chapter also briefly discusses the several other sanctioning methods that have been used in other countries but not in Iraq, particularly those that target corporations.

This is then followed, in chapter five, by a consideration of the role and the purpose of using the criminal law to enforce the environmental law. This chapter also briefly discusses

the models of criminalization of environmental harm of air pollution to enforce environmental law.

The next chapter considers preliminary question that has to be decided relates to the use of criminal sanctions in enforcement. If eventually to determine the circumstances in which criminal sanctions as opposed to other alternatives ought to be used, it is necessary to consider why regulators would use criminal sanctions. Of particular importance are the characteristics of criminal law that distinguish it from other means of enforcement: what can criminal sanctions achieve that cannot be achieved by, say, civil liability? It will be argued in this thesis that criminal sanctions should not be used as a matter of course but rather reserved for use in serious or repeat offences. This argument will be expanded on considerably here. Once the circumstances in which criminal sanctions are useful have been established, the focus then turns onto how to make the criminal sanctions that are used most effective. In order to determine when to use criminal sanctions and when to use alternatives, first in this chapter it will be useful to consider the strengths and weaknesses of using the criminal law, bearing in mind the objectives of criminal law identified in chapter five.

In the final chapter, a summary of the issues explored throughout the thesis is presented, also will bring the findings of the previous chapters together to form a conclusion and will briefly summarize answers to the questions posed by the research, thus providing resolution, finally to forward possible recommendations.

CHAPTER TWO
CONCEPTUAL FRAMEWORK FOR UNDERSTANDING AIR POLLUTION PROBLEM IN IRAQ AND CRIMINALIZATION OF ENVIRONMENTAL HARM AND PUNISHMENT

2.1. Introduction

Few attempts have been made to address the issue of environmental pollution in Iraq. However, these studies have not specifically addressed air pollution as an important dimension of environmental pollution in Iraq. This chapter seeks to address this deficit by focusing on some of the air pollution issues with reference to the environment and its effects on human health in the context of industrialisation and urbanisation, with a view to understanding the growing concerns about air pollution in Iraq.

Iraq, is encountering environmental deterioration due to the severe overexploitation of its natural renewable and non-renewable resources, encroachment of urban construction and diminishing agricultural land due to uncontrolled grazing and logging.

In addition, clarification of the challenges or protecting the air environment through environmental law and an overview of the environmental principles that underpin Iraqi environmental law will address in this chapter.

Several different possibilities for punishing environmental pollution exist in current legislation.

All of these models have different implications for what must be proven in a Criminal Court. The question that is of particular interest to us is whether incrimination (and therefore the information needed to prove a violation of this provision) is addressed directly towards the protection of the environment or whether such protection is only achieved in an indirect way, e.g. by criminalizing the violation of licencing conditions.

It should be noted here that there is no specific model applied in the environmental criminal laws in Iraq, because the Iraqi legislator left this issue in general and circulated to all models to criminalize environmental air pollution and its damage.

Therefore we will give a brief overview of some of these modes of punishment and address the above questions from a critical perspective.

Using the most recent and reliable figures, it draws on data from the Iraqi Ministry of Health and Environment, the World Health Organization (WHO), other agencies of the United Nations system and the Government of Iraq, United Nations International Children's Education Fund (UNICEF), United Nations Fund for Population Activities (UNFPA), World Food Programme (WFP), the United Nations Development Programme (UNDP), International Organisation for Migration (IOM), United Nations Industrial Development Organization (UNIDO), United Nations Environment Programme (UNEP), the Office for the Coordination of Humanitarian Affairs (OCHA), the International Committee of the Red Cross (ICRC), the Food and Agriculture Organization (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Office for Project Services (UNOPS), United Nations Assistance Mission for Iraq (UNAMI), the United Nations High Commissioner for Refugees (UNHCR), the World Bank (WB), non-governmental organizations and others concerned with safeguarding the health of the Iraqi people.

2.2. The historical development of the protection of the air environment in Iraqi legislation

The environment in general and particularly the air environment has suffered since the establishment of the Iraqi state in 1925, i.e., after its independence from the Ottoman Empire. During this period, which was characterised by gross neglect and a lack of attention given to

the matter, concern for the environment and the management of its affairs was restricted to missions and services carried out by the municipal councils. These services include street cleaning, the collection of rubbish and waste material from streets, shops and houses and its safe disposal, as well as the proper management of water reservoirs, lakes and rivers.[50]

During that period, the Iraqi legislature enacted several laws for the preservation of the environment, but no criminal sanctions were imposed on violators. Examples of such laws include Law No. 42 of 1932 for the supervision of professional crafts causing air pollution, Law No. 27 of 1943 to regulate the work of factories and fuel products causing environmental damage, Law No. 19 of 1950 on the organization of work in marble stone factories and air pollution.

Iraq's interest in protecting the environment increased after its participation in the Stockholm Conference on the protection of the air environment in 1972. The Iraqi legislature granted to the boards of governorates the power to maintain public health, improve health affairs and take sufficient measures to prevent the spread of contagious and infectious diseases by air by establishing and maintaining forests and basins, establishing and managing parks and preventing the construction of buildings that are harmful to the air environment.[51]

On 10 March 1974, the Presidential Council enacted the Diwan No. 2411. The Presidential Council had a major role in the founding of the Supreme Body of the Human Environment, which was the first legal organization in Iraq set up to take care of the environment. Its membership was comprised of representatives from the relevant institutions, and it was chaired by the Ministry of Municipalities.

The Supreme Body of the Human Environment was dissolved in 1975 and replaced under the dissolved Revolutionary Command Council Resolution No. 1258 by the Supreme

[50] Roberts Adam, 'Environmental Issues in International Armed Conflict: The Experience of the 1991 Gulf War' (1996) 69(1) *International Law Studies* 28

[51] 148 :(2010) 2، العدد. 13، مجلة جامعة كربلاء "الكوارث ومشاكل البيئة العراقية"، سالم مطر، [Matar Salim, 'Iraqi Disasters and Environment Problems' (2010) 13(2) *Journal of the University of Karbala* 148; translated from Arabic to English by the author]

Council for Human Environment, subsequently renamed as the Council for the Protection of the Environment from Pollution, which is chaired by the Minister of Health. This was during the presidency of Ahmed Hassan al-Bakr. During the First Gulf War in 1991, the Iraqi people suffered from the effects of radiological and chemical pollution because American and British troops, for the first time, used warplanes and tanks to fire hundreds of depleted uranium shells on different parts of southern Iraq. This has led to soil, air, plant and animal pollution and caused Iraqis to suffer from strange diseases that were not present before the outbreak of the war.[52]

Attention to environmental protection and pollution in the period before the US occupation of Iraq in 2003 was marked by the issuance of a range of environmental legislation, including laws, regulations, statements, decisions and orders covering the agricultural, industrial and construction sectors, which created an environment in which a multiplicity of governmental institutions had responsibility for monitoring the application of these legislations. [53] Consequently, after the 2003 invasion, coordinated action and decision-making were lost or simply not applied. Furthermore, perpetrators of environmental crimes were not held liable for their actions, which led to the aggravation of environmental crime in Iraq at that time.

In 2004, a transitional government was formed whose primary objective was to stabilise the components of the new state. Understandably, the protection of the environment was not among its priorities during the transitional period. However, the high level of

[52] Al-Azzawi Souad N, 'Depleted Uranium Radioactive Contamination in Iraq: An Overview' (2006) 1 *Global Research* 4; Jennifer Leaning, 'Environment and Health: 5. Impact of War' (2000) 163(9) *Canadian Medical Association Journal* 1157; Al-Ansari Nadhir, Pusch Roland and Knutsson Sven, 'Suggested Landfill Sites for Hazardous Waste in Iraq' (2013) 5(4) *Natural Science* 463

[53] Wessely Simon and Freedman Lawrence, 'Reflections on Gulf War Illness' (2006) 361(1468) *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 721; P Edwards Jonathan, 'The Iraqi Oil Weapon in the 1991 Gulf War: A Law of Armed Conflict Analysis' (1992) 40 *Naval Law Review* 105; Ammash Huda S, 'Toxic Pollution, the Gulf War, and Sanctions' in Anthony Arnove (ed), *Iraq Under Siege* (undated edition, Southend Press 2002); Jones Edgar and others, 'Psychological Effects of Chemical Weapons: A Follow-Up Study of First World War Veterans' (2008) 38(10) *Psychological Medicine* 1419; Allies William Shawcross, *: The US, Britain, and Europe in the Aftermath of the Iraq War* (Public Affairs Reports 2005)

environmental pollution in Iraq during that period and its impact on the lives of Iraqis and other living organisms, both plants and animals, made the new government realise that the protection of the environment must be given priority.

In late 2003, the Iraqi Governing Council and Coalition Provisional Authority approved a resolution for the creation of a new Environment Ministry. This was followed by the issuance of the Iraqi Constitution in 2005.[54]

Since it was created in 2003, the body charged with the implementation of Iraq's policy for protecting and improving the environment has been the Ministry of Environment. This body was formed because of the Iraqi government's understanding of the great importance of the environment and the need to respond urgently to environmental issues, given the severe problems and challenges that exist. Before 2003, no authority had responsibility for legislative, regulatory and executive tasks necessary to protect the environment, leaving them subject to whatever the political will at the time happened to be.[55]

The Iraqi Ministry of Environment is a new body relative to other Ministries. Nevertheless, the Ministry of Environment has begun to publish portions of the essential directives and laws governing environmental issues in Iraq. Previously, the laws governing the management of environmental issues had for the most part been issued by the Ministry of Agriculture; since its establishment in 2003, the Ministry of Environment has kept introducing additional laws.[56]

2.3. Country Profile

Iraq is situated in south-western Asia, flanking Turkey toward the north, Iran toward the east, Kuwait toward the southeast, Saudi Arabia to the southwest, Jordan to the west and

[54] United Nations Environment Programme (UNEP), *Desk Study of the Environment in Iraq* (UNEP 2003) 5, 30-31 <http://postconflict.unep.ch/publications/Iraq_DS.pdf> accessed 1 February 2018
[55] Ibid, 41
[56] Salim Mudhafar A, *Monograph on Stakeholder Participation in the NBSAP Revision Process* (2015) 7 <www.researchgate.net/publication/319997737> accessed 29 January 2018

Syria to the northwest. The capital, Baghdad, is topographically and economically the centre of the country. With a current population of 38,525,041, according to the latest figures from the National Investment Commission,[57] Iraq is 36th largest of the world's countries and dependencies measured by population. Based on these figures, the projected population for the year 2025 is 44,664,000.[58]

Iraq is considered a developing country, with significant natural resources. Its economy is heavily reliant on oil, gas, phosphates, cement and oil production, which makes a major contribution to its general budget. This study examines the Iraq approach towards achieving sustainable development, which all nations have set as the far-reaching goal of their environmental protection regimes. Sustainable development attempts to minimise resource consumption, including raw materials, water and energy, and to limit exploitation of non-renewable resources, in order to preserve them for the benefit of present and future generations.

It is self-evident that as a developing country, Iraq is in a vulnerable position with regard to its legal obligations to protect the environment from air pollution. This vulnerability was recognised as a factor facing all developing countries in Principle 11 of the Rio Declaration, which read as follows:

> Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.[59]

[57] The National Investment Commission (NIC) in Iraq, *Iraq Investment Map* (NIC 2017) 7

[58]Turner Barry (ed), *The Statesman's Yearbook 2015: The Politics, Cultures and Economies of the World* (Springer 2014) 668-669; World Population Review, '*Iraq Population 2018*' (2017) <http://worldpopulationreview.com/countries/iraq-population/> 1 February 2018

[59] Rio Declaration on Environment and Development, *UN Conference on Environment and Development*, UN Doc A/CONF.151/5/Rev.1, 31 ILM 874 (1992) [hereinafter the "Rio Declaration"]principle 11

Figure 1: Iraq map

2.4. An Overview of Environmental Air Pollution Problems in Iraq

There has been a limited amount of research into air quality in the Middle East, although it is clear from concerns expressed by the National Aeronautics and Space Administration (NASA) that many large cities in the region, including Baghdad, Iraq and Tehran, Iran, suffer from very high levels of air pollution.[60] A major challenge to the

[60] Hussein Samera Hamad and others, 'Source Apportionment of PM 2.5 Carbonaceous Aerosol in Baghdad, Iraq' (2015) 156 *Atmospheric Research* 80

protection of the environment, air pollution in Iraq is of great concern due to its negative effects on the quality of life and health.[61]

Air pollution is a dangerous environmental hazard and puts the lives of the people in Iraq at risk. This problem has been made worse because the government of Iraq has delayed action on new legislation to tackle poor air quality, due to war and to political, social, security and economic factors.[62]

Doumani rightly claims that Iraq is a developing country with growing air pollution problems. Air quality is poor in Iraq. The most severely affected are the oil-delivering industrial urban territories (for example, Basra, Kirkuk, Baghdad and Baiji) where gas flares, emanations from oil refineries, industrial discharge (particularly chemicals and concrete), power generation emissions, traffic fumes, waste pollutants and sandstorms combine to erode air quality.[63]

The next most affected are the substantial urban regions such as Mosul, Erbil, Suleimaniyah, Karbala, a Najaf, Hilla, Nasriyah, where the air is affected by a blend of industrial emissions, power generation emissions, movement vapour, waste toxins and dust storms.[64] The expanding number of dust storms, affects even the rural areas and smaller towns.[65]

The increased number of vehicles, machinery, factories and other oxide producers also makes the environment more polluted.[66] There has been an increase in the number of

[61] Nature Iraq (n 6) 2-3; American Lung Association, '*Toxic Air: The Case for Cleaning Up Coal-fired Power Plants*' (2011) 1-4 American Lung Association.
[62] Earth & Marine Environmental Consultants, '*Kaz Oil Terminal Project. Environmental and Social Impact Assessment*' (2014) 41
[63] European Commission, '*Cooperation between the European Union and Iraq: Joint Strategy Paper 2011-2013*' (2010) 57 <https://ec.europa.eu/europeaid/sites/devco/files/csp-iraq-2011-2013_en.pdf> accessed 1 February 2018
[64] Fadi M. Doumani (n 5) xiv.
[65] Nature Iraq (n 6) 2-3; Al-Haseen Shukri and others. "An Experimental Study On The Determination Of Air Pollutant Concentrations Released From Selected Outdoor Gaseous Emission Sources In Basra City, Southern Iraq." *Journal of International Academic Research for Multidisciplinary* 3, No. 1 (2015)88-89.
[66] Akimoto Hajime, 'Global Air Quality and Pollution' (2003) 302(5651) *Science* 1716; David Mage and others "Urban air pollution in megacities of the world." *Atmospheric Environment* 30, no. 5 (1996): 681-686; Shiru

vehicles in general, which has not been accompanied by the development of road networks that can cope with the increasing volume of traffic. Moreover, older vehicles, which consume more fuel than is recommended by the environmental specifications, constitute the largest percentage of the total number in use.

The evidence for this deterioration is seen in the high number of health conditions with which patients present, such as chronic respiratory diseases and an increasing number of allergic reactions.

Serious environmental crimes are being committed in Iraq. These crimes, such as the burning of solid remnants and the trafficking of toxic waste and hazardous chemicals, which includes the storage of these dangerous chemicals as well as efforts to dispose of them illegally, have contributed to the pollution of the environment and have dangerously affected the lives of individuals and other living creatures. Additionally, individuals and institutions have established industrial installations and oil refineries near the cities, which are devoid of the most basic means of environmental safety. It should be noted that these installations have contributed to the spread of toxic dust and the discharge of toxins into the air, leading to acid rain, which, is a health risk to the public and also can damage plants and relics as well as historical and natural landmarks.[67]

The shortage of electric power generation on a national scale has driven citizens to use large domestic generators that also generate pollution and noise.[68] Furthermore, in the absence of adequate garbage collection and recycling, citizens have adopted primitive ways to deal with waste such as incineration, which produces gases and poisonous materials and

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Niu, 'Industrial Pollution in Developing Countries' in *International Labour Organization Encyclopaedia of Health & Occupational Therapy* (9 March2011) <www.iloencyclopaedia.org/part-vii-86401/environmental-health-hazards/53/industrial-pollution-in-developing-countries> 28 January 2018

[67] Khanjer Ebtesam F, A Yosif Mohammed and A Sultan Mathem, 'Air Quality Over Baghdad City Using Ground and Aircraft Measurements' (2015) 56(1C) *Iraqi Journal of Science* 839

[68] Saeed Ismael Mohammed, Ramli Ahmad Termizi and Saleh Muneer Aziz, 'Assessment of Sustainability in Energy of Iraq, and Achievable Opportunities in the Long Run' (2016) 58 *Renewable and Sustainable Energy Reviews* 1207

increases air pollution. Likewise, the depletion of green spaces in Iraq due to the excessive felling of trees, and especially palm trees, to be used as fuel for domestic use, has led to further deterioration of the environment and increased air pollution. Finally, according to French, Gardner and Assadourian, over two decades of war have caused severe pollution and other environmental problems in Iraq which have been exacerbated by international sanctions and mismanagement.[69]

Iraq currently faces major environmental challenges, brought about by a combination of years of war and underinvestment which have eroded the nation's physical infrastructure and vital environmental services such as water supply and sewerage systems. The continuation of fighting in the areas presents an existential threat to the environment and to human health through the release of toxic substances into the atmosphere. This could be accidental through the destruction of factories and warehouses through bombing or intentional through the release of poisonous gases such as chlorine. As recently as 2007, Lorries carrying cylinders of chlorine were bombed with dangerous chlorine gas being released into the atmosphere.

Similarly, the bombing of oil installations, whether deliberate or accidental, can result in oil spillages and the contamination of water and food supplies. Additionally, bombing of oil refineries can lead to plumes of toxic gases being released into the air, threatening human and animal wellbeing as well as plant life.[70] According to the United Nations Environment Programme (UNEP), the smoke from oil-well flames and burning oil trenches during the war have caused local air contamination and soil pollution,[71] while the World Health Organisation

[69] Starke Linda (ed),*Redefining Global Security*(WW Norton 2005) 6; Hilary French, Gary Gardner and Erik Assadourian, 'Laying the Foundations for Peace' in Starke Linda (ed), *State of the World 2005: Redefining Global Security*(WW Norton 2005)160, 161

[70] World Health Organization, *Conflict and Humanitarian Crisis in Iraq: Public Health Risk Assessment and Interventions* (WHO 2014) 22

[71] The United Nations Environment Programme (UNEP),'Press Release: UNEP Outlines Strategy for Protecting People and Environment in Post-War Iraq'IK/351-UNEP/146 (*United Nations Meetings Coverage & Press Releases*,24 April 2003) <www.un.org/press/en/2003/ik351.doc.htm> 1 February 2018; M Aenab Allaa and

(WHO) asserts that the most significant threat to air quality in Iraq is from pollution at a local level.[72] Upon release of a study of environmental conditions in Iraq in 2003 which found that '*a major threat to the Iraqi people is the accumulation of physical damage to the country's environmental infrastructure*', Study Chairman Pekka Haavisto stated, '*Many environmental problems in Iraq are so alarming that an immediate assessment and a clean-up plan are needed urgently*'.[73]

During the 1980s and 1990s up until 2003, Iraq was quite isolated within the international community and was not the recipient of any significant assistance.[74] From 2003 to 2006, a number of projects were undertaken by the United Nations Environment Programme (UNEP) to support its efforts to develop regulations to protect the environment and in 2005, UNEP reported that there were 60 pollution hotspots which required remedial action and 5 of these were in need of immediate remediation.[75]

A number of plans have been devised, supported by UNEP and UNDP,[76] both by the Iraqi Ministry of Planning,[77] and the Ministry of Environment,[78] to address these environmental problems, many of which were the outcomes of war, such as toxic residues, desertification, oil pollution or radioactive contamination. However, it remains unclear how

Singh SK, 'Evaluation of Drinking Water Pollution and Health Effects in Baghdad, Iraq' (2012) 3(06) *Journal of Environmental Protection* 533

[72] World Health Organization (n 10) 10; World Health Organization (n 10) 14; Krzyzanowski Michal and Cohen Aaron, 'Update of WHO Air Quality Guidelines' (2008) 1(1) *Air Quality, Atmosphere & Health* 7

[73] The United Nations Environment Programme (UNEP) (n 71) 1; M Aenab Allaa and Singh SK (n 71) 533

[74] The United Nations Environment Programme (UNEP). *Assessment of Environmental Hotspots*. (2005) Accessed at: http://postconflict.unep.ch/publications/Iraq_ESA.pdf

[75] The United Nations Environment Programme .*Landmark Agreement Sets in Motion Action to Restore Iraq's Environment as New Study Outlines Magnitude of Deterioration*. (2014)Accessed at: https://www.unenvironment.org/news-and-stories/press-release/landmark-agreement-sets-motion-action-restore-iraqs-environment-new; The United Nations Environment Programme (UNEP). *Post-Conflict Impact Assessment on Environment in Kurdistan Region of Iraq*. (2015) Report published by http://idrc-jo.com/post-conflict-impact-assessment-on-environment-in-iraq/; The United Nations Environment Programme (UNEP) (2011) *Climate Change, Energy & Natural Resource Management*. Accessed at: http://www.iq.undp.org/content/iraq/en/home/library/environment_energy/publication_1.html

[76] United Nations Iraq .*UN Development Assistance Framework for Iraq 2015-2019*. (2014) Accessed at: http://www.uniraq.com/index.php?option=com_k2&view=item&id=4709:un-development-assistance framework-for-iraq-for-2015-2019&Itemid=702&lang=en

[77] Ministry of Planning .*National Development Plan for the Years 2010-2014*. Government of Iraq. (2010) Accessed at: http://www.unesco.org/education/edurights/media/docs/795ff8cb2cd3987aba07572026cdb6d0958cd27a.pdf

[78] Iraq Ministry of Environment (n 1) 7.

effectively these plans have been implemented.[79] In the course of their consultations with local communities in various locations in Iraq in 2013, UNDP heard the voices of local people in focus groups which raised concerns about environmental issues. People asked for more effective environmental laws especially to prevent pollution from oil exploration and production and the need to clean up certain areas adversely affected by residual radioactive contamination following the years of war.[80]

In September 2017, UNEP's Post-conflict and Disaster Management Branch (PCDMB) conducted a preliminary investigation of pollution effects in areas retaken from ISIS and issued a risk assessment based on residual effects of ammunition manufacture, the contamination risks posed by polychlorinated biphenyl (PCB) a bi-product of the destruction of energy infrastructure; the health risks presented by asbestos in Mosul and the immense quantities of debris left behind after bombing of sites.

In addition to the initial report by (UNEP), the Dutch organization PAX published its report "Life under a Black Sky" at the third meeting of the United Nations Environment Program (UNEP), held in Nairobi in early December. The report is a summary of the data collected by the organization in the last three years, and includes all Iraqi territory, including the city of Mosul and its vicinity, which was limited by the (UN) report. The environmental issues discussed in the reports can be summarized in three main areas: oil pollution, damage to civilian installations, and side effects. The Iraqi environment was the silent victim of the (ISIS) gangs that targeted oil wells and dams. They followed the policy of scorched earth and systematic sabotage of the environment such as the burning of oil wells in Qayara, the sulfur factory in Mashraq and the Baiji refinery, and the establishment of crude oil refineries, and

[79] Ministry of Planning (n 77) 553

[80] The United Nations Environment Programme (UNEP).*Post-2015 Development Agenda Iraq National Consultations*. (2013)Accessed at: http://www.iq.undp.org/content/iraq/en/home/library/mdg/the-post-2015-development-agenda-national consultations-in-iraq.html

smuggling of oil to gain financial resources to fund its terrorist activities. Millions of tons of debris were also left in the liberated areas.[81]

Types and reasons of environment deterioration can be summarized as follows:

2.4.1. Demographic factors

Since the early 1990s, Iraq has had a history of social unrest and population displacement. Several decades of conflict have undermined socioeconomic development and degraded the national infrastructure. When this is combined with the region's recent resurgence of violence, it is clear that Iraq faces a complex emergency situation and humanitarian crisis.[82]

Action by the Islamic State of Iraq and the Levant (ISIS) together with the Anbar crisis has displaced more than 1.8 million Iraqis since January 2014.

The country experienced four distinct waves of internal population displacement that year, in January, June, August and October. Some 500,000 people fled Mosul on 10 June alone, including a number of Palestinians who, already stateless, have been subjected to secondary displacement.[83] Many of the 1.8 million newly displaced persons (IDPs) in Iraq are now housed in some 26 IDP camps and more than 1700 informal IDP sites. Their future is uncertain. It is not presently clear what effect the latest crisis will have on the 215,000 Syrian refugees living in 11 camps in Iraq, and their situation is being closely monitored by the UNAMI and the UNHCR. At least 300,000 people, most of them Yazidis, have moved into the Sinjar mountains, placing further strains on host communities.

[81] Iraqi Studies Unit Rawabet Centre for Research and Strategic Studies. *Again: Basra opens doors of environmental pollution in Iraq*. (2018) https://rawabetcenter.com/en/?p=6533.
[82] United Nations High Commission for Refugees (UNHCR), *UNHCR's data portal Information about current emergencies*. http://www.unhcr.ch/cgi-bin/texis/vtx/iraq; United Nations Environment Programme, *UNEP in Iraq: Post-Conflict Assessment, Clean-up and Reconstruction* (2007) 8-15 <https://postconflict.unep.ch/publications/Iraq.pdf> accessed 1 February 2018
[83] World Health Organization (n 70) 4-5

The Gulf War and the war with (ISIS) forced hundreds of thousands of refugees and emigrant people to flee from their home cities into other territories; those homeless people must be sheltered and provided with food, housing, health care, education, employment and other essentials for human life and well-being.[84]

Currently, Iraq has in excess of 3.1 million IDPs.[85] With the fall of cities such as Mosul and Tikrit, hundreds of thousands of people were forced to flee and seek refuge in the Kurdistan region of Iraq. The extent of this migration was on such a scale that, in June 2014, United Nations Refugee Agency relief workers announced that temporary refugee camps were overcrowded. This influx of IDPs, combined with displaced Syrians, resulted in the Kurdish infrastructure being placed under such pressure as to reach breaking point. There was excessive demand on services such as water and electricity supply and the accumulation of refuse presented a threat to health and the spread of disease.[86] This was underscored both by the World Bank, and by the Kurdistan Regional Government, which highlighted the need for improved sanitation, infrastructure, water and waste collection.[87] A UNDP-funded post-conflict environmental assessment conducted in 2015 identified a range of environmental issues resulting from overcrowded IDP camps and reported a build-up of refuse, scarcity of water, and the threat of air pollution in the Kurdistan region of Iraq.

This major demographic problem put enormous pressure on the infrastructure of Iraq and has caused some environmental degradation, since the movement of those refugees and emigrant people resulted in a considerable change in lifestyle and patterns of consumption among Iraqis.

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[84] Ibid

[85] International Organization for Migration. *Iraq Mission, Displacement Tracking Matrix*. (2017) Accessed at: http://iraqdtm.iom.int/

[86] World Bank. The Kurdistan Region of Iraq: *Assessing the Economic and Social Impact of the Syrian Conflict and ISIS*.(2015)Accessed at: https://openknowledge.worldbank.org/bitstream/handle/10986/21637/9781464805486.pdf

[87] Kurdish Regional Government. *Impact of the Refugee Population on the Kurdistan Region of Iraq*. (2017) Accessed at: http://cabinet.gov.krd/p/page.aspx?l=12&s=000000&r=401&p=484&h=1&t=407

As significant as these political factors are, Iraq's demographic problems also have a natural dimension. All available studies show that the population of Iraq has shown a steady increase over the past 60 years. This increase in population is the cause – or at least, a cause – of increasing environmental degradation and has put pressure on the environment in a number of ways. When a population increases, its environment becomes unbalanced both because of the increase in the amount of water, food, energy and shelter that are needed and because of the increased production of waste.[88]

From a baseline of 10 million in 1970, the population of Iraq has multiplied by almost 3 times to more than 33 million by 2010, and estimates from the Population Division of the United Nations suggest that it will have reached nearly fifty million by 2030.[89]

As a result, consumption of fuel has increased, motor vehicles have become more commonplace and urbanism has spread briskly throughout the country. The resulting overcrowding, congestion and settlement on land that is not really best suited for urban use have had a negative effect on the environment, with increasing pollution and unhealthy living conditions.[90]

2.4.2. Geographical factors

Iraqi's location is key to understanding why the country is important and why the problem of air pollution is so complex.[91]

After 10 years of war and 20 years of drought, Iraq has become the new Dust Bowl.[92] Especially in the southern and central areas, the degradation of land and the formation of

[88] Cropper Maureen and Griffiths Charles, 'The Interaction of Population Growth and Environmental Quality' (1994) 84(2) *The American Economic Review* 250; Urdal Henrik, 'People vs Malthus: Population Pressure, Environmental Degradation, and Armed Conflict Revisited' (2005) 42(4) *Journal of Peace Research* 417; Lonergan Steve, 'The Role of Environmental Degradation in Population Displacement' (1998) 4(6) *Environmental Change and Security Project Report* 5

[89] World Health Organization, *Country Cooperation Strategy for WHO and Iraq: 2012-2017* (2013) 4

[90] Ibid

[91] Library of Congress Federal Research Division, '*Country Profile: Iraq, August 2006*' <www.loc.gov/rr/frd/cs/profiles/Iraq.pdf> accessed 1 February 2018

deserts are becoming serious problems.[93] Dust in urban parts of Iraq is a potential source of pollution because of heavy metals from weathered material, motor transport and industrial activity. Household and street dust can contain chromium, zinc, lead, nickel and cadmium in concentration.[94]

Hazards affecting Iraq may be natural or may result from human activity. There is a growing susceptibility to such hazards of nature as floods and drought, the degradation of marshland and desalination of soil in fertile land, sandstorms and desertification, epidemics and earthquakes.[95] In addition to sandstorms in major cities such as Baghdad that have reached levels of intensity and frequency not previously seen, desertification has been particularly damaging to the environment and has had a direct effect not only on human life and the natural world.[96]

Desertification is a result of human activity that includes overgrazing, indiscriminate cutting of natural vegetation, the failure to provide irrigation or drainage systems or to take measures necessary to retain green spaces. Road construction, earthmoving, urban sprawl and natural resources squandered at a level that cannot be sustained are also contributors to desertification.[97]

Marten Kobler, the UN Secretary-General's representative in Iraq, speaking at the Nairobi conference on the environment on 21st every 2013 reported an annual rate of sandstorms in Iraq of 122 which was expected to rise to 300 within five years. 'Environmental issues impact everyone in Iraq. Dust storms, desertification and water

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[92] Varoujan Sissakian, Al-Ansari Nadhir, and Knutsson Sven. "Sand and Dust Storm Events in Iraq." *Natural Science* 5, no. 10 (2013): 1084-1094; Kais J. Al-Jumaily, and Ibrahim Morwa K. "Analysis of Synoptic Situation for Dust Storms in Iraq." *International Journal of Energy and Environment* 4, no. 5 (2013): 851-58. Accessed October 12, 2015. http://www.ijee.ieefoundation.org/vol4/issue5/IJEE_10_v4n5.pdf.

[93] Varoujan K.Sissakian, Abdul Ahad Ayda D, and Hamid Amal T. "Geological Hazards in Iraq, Classification and Geographical Distribution." *Iraqi Bulletin of Geology and Mining* 7, no. 1 (2011): 1-28.

[94] Ali A Kazem, Miqdam T Chaichan and Hussein A Kazem, 'Dust Effect on Photovoltaic Utilization in Iraq' (2014) 37 *Renewable and Sustainable Energy Reviews* 734

[95] Ibid

[96] Varoujan K.Sissakian, Abdul Ahad Ayda D, and Hamid Amal T (n 93) 1-28.

[97] The United Nations Environment Programme (UNEP) (n 71) 1

scarcity are only three of many pressing issues', Kobler told delegates, adding that meeting these challenges is not a task for someone else – it begins with each of us.[98]

2.4.3. Industrial factors

Industry in Iraq has suffered from a decade of economic sanctions and lack of investment, leading to serious environmental problems including the discharge into surface waters of untreated effluent; the discharge of chemicals into groundwater and soil; particulate and gas emissions from stacks in a way that is both widespread and uncontrolled. The can be no doubt that the environmental stresses that have built up in the country over the last 20 years have been made even worse by the recent war.[99]

The main source of air pollution in Iraq is the oil industry and the consumption of enormous amounts of fuel by refineries and power plants. The oil industry produces more toxic gases and more solid particulates than any other Iraqi industry, and the effect is worse when the activities take place inside city limits or – as with the Kirkuk oil refinery – inside an urban area.[100]

Virtually every stage of petroleum production, from initial exploration to refining, is accompanied by pollution. The production chain of petroleum fuel generates solid waste,

[98] UN Public Information Office (UNPIO), (2013):735 <http://www.uniraq.org/index.php?option=com_k2&view=item&id=208:the-united-nations-advocates-for-environmental-protection-in-iraq&Itemid=605&lang=en> ; http://www.arabstates.undp.org/content/rbas/en/home/presscenter/pressreleases/2012/07/07/advocating-environmental-protection.html

[99] The United Nations Environment Programme, '*Environment in Iraq: UNEP Progress Report Geneva*' (UNEP 2003) 5

[100] Masitah Alias, Zaini Hamzah and Lee See Kenn, 'PM10 and Total Suspended Particulates (TSP) Measurements in Various Power Stations' (2007) 11(1) *the Malaysian Journal of Analytical Sciences* 255; AH Afaj and Al-Khashab DY. "Environmental impact of air pollution in AL-Daura Refinery. *Ahrens*, CD, 2005. Essentials of meteorology: An invitation to the atmosphere." (2008): 463; Mohammad A. Alanbari, Rahman Israa, Al-Ansari Nadhir, and Knutsson Sven. "Comparison of potential environmental impacts on the production of gasoline and kerosene, Al-Daura refinery, Baghdad, Iraq." *Engineering* 8, no. 11 (2016): 767; Al-Dabbas Moutaz A, Ali Lamyaa Abdulameer and Afaj Adnan H, 'The Effect of Kirkuk Oil Refinery on Air Pollution of Kirkuk City-Iraq' in *Proceedings of the 1st Conference on Dust Storms and Their Environmental Effects* vol 17 p. 18. 2012:9.

wastewater, emissions of gas and aerosols in very large quantities.[101] Other environmental problems can be traced to the process of refining oil. Many oil refineries are situated in an urban centre (e.g. the cities of Kirkuk, Basrah, Daura and Biji) with a large population, which suffer from air pollution, traffic jams and nuisance as a consequence.

Other activities such as electricity generation, waste management, the plastic and chemical industries and motor vehicle use contribute to the air pollution problem in Iraq.[102] Cement production causes a number of gases to be released into the air, including bypass gases, clinker cooler exhaust and kiln exhaust gases. This toxic mix can include large amounts of kiln dust if the raw materials have a sufficiently high alkaline content.

Iraq was among the largest fertiliser exporters in the world. Raw materials such as potash, ammonia, acids and phosphate ore are used in large quantities in the production of fertilizer, which is also an energy-hungry industry; as if that was not enough, mining and milling operations will be found at most sites.[103]

One final example of looming industrial contamination stems from Iraq's use of pesticides. While agriculture was not a major sector within the Iraqi economy before the 1991 Gulf War, in the wake of import bans it has come to play an increasingly important role in the country. Accordingly, there has been an increased need for pesticide production in recent years. Pesticides are formulated in Iraq under the auspices of the Al-Tarik State Company.

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[101] OBorn Reyn, 'From Ground to Gate: A Lifecycle Assessment Of Petroleum Processing Activities in the United Kingdom' (*Norwegian University of Science and Technology* 2012) 6; Epstein Paul R and Selber Jesse (eds), *Oil: A Life Cycle Analysis of Its Health and Environmental Impacts* (Center for Health and the Global Environment, Harvard Medical School 2002) 4; Mariano Jacqueline Barboza and La Rovere Emilio Lèbre, 'Environmental Impacts of the Oil Industry' in Pedro de Alcantara Pessoa Filho and Adolfo Puime Pires (eds), *Petroleum Engineering – Downstream* (EOLSS 2007)2-3 <www.eolss.net/outlinecomponents/Petroleum-Engineering-Downstream.aspx> 1 February 2018

[102] Al-Dabbas Moutaz A, Ali Lamyaa Abdulameer and Afaj Adnan H, 'Determination of Total Suspended Particles and the Polycyclic Aromatic Hydrocarbons Concentrations in Air of Selected Locations at Kirkuk, Iraq' (2015) 8(1) *Arabian Journal of Geosciences* 335

[103] United Nations Development Programme, '*Iraq: Country Case Study Report. How Law and Regulation Supports Disaster Risk Reduction*' (International Federation of Red Cross and Red Crescent Societies 2014) 10

Not surprisingly, citizens living in proximity to pesticide storage facilities are increasingly concerned about the security of these sites and about what they might contain.[104]

2.4.4. Security-related factors

Turmoil, both internal and external, has been endemic in Iraq since the 1980s. Since Saddam Hussein was overthrown in 2003, the political situation has been very volatile, leading to sectarian violence and the displacement of significant portions of the population as well as serious socio-economic ill effects.[105]

These major security problems have put enormous pressure on the infrastructure and caused environmental degradation.

2.4.5. Economic and social factors

A number of factors have caused serious damage to Iraqi society and economy. These include, until 2003, a centralised economy; being in a state of war since the 1980s; international economic sanctions; and the fact that some 90% of the federal government's revenues and more than half of the country's GDP comes from the oil sector.[106] The share of exports and GDP taken by non-oil sectors is quite small.[107]

The people of Iraq are more vulnerable to the various hazards the country faces because of conflict, the displacement of large segments of the population and harsh poverty.

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[104] Jonathan E Sanford. "*Iraq's economy: Past, present, future*." Library of Congress Washington Dc Congressional Research Service, 2003; Ellen Henderson, Anne. "The Coalition Provisional Authority's Experience with Economic Reconstruction in Iraq." *United States Institute for Peace Special Report* 138 (2005).
[105] European Commission (n 63) 57
[106] World Bank, '*World Development Indicators*' <http://data.worldbank.org/data-catalog/world-development-indicators> accessed 16 January 2013
[107] World Bank Group, *Iraq Public Expenditure Review: Towards More Efficient Spending for Better Service Delivery in Iraq* (2012) The World Bank, *Poverty Reduction and Economic Management Department Middle East and North Africa Region*, Report No 68682-IQ, 5

Wars and their aftermath have meant that services that should be in place for disaster management, hazard management and risk reduction are missing.[108]

The past 20 years have seen a tripling in migration to the cities from rural areas. There are a number of reasons for this, the most significant of which is the increasing availability in urban areas of technology and work opportunities and better health services and accommodation. Urban environments that do not have the ability to absorb such growth have come under pressure. The more resources are being depleted, the greater the degradation of the environment. There is no immediate prospect of an improvement in this situation.[109]

Improving environmental performance requires awareness of the issues at both the individual and institutional levels. The Ministry of Environment as well as the environmental departments and directorates in a variety of institutions are functioning, but it is clear that there is little public awareness of what needs to be done because environmental awareness is a new thing in Iraq and no environmental dimensions have been integrated into the educational framework, therefore nothing is being done to promote environmental awareness at every level of society.[110]

2.4.6. Conflict pollution and the toxic remnants of war

Environmental experts agree that the current air pollution problems in Iraq are the result of three great wars, during which a wide range of internationally prohibited weapons were used by the previous Iraqi regime. The effect of the First Gulf War on the environment in Iraq and other neighbouring countries in 1991 is equal to the high levels of environmental pollution resulting from the explosion of the Nuclear Chernobyl Reactor in the Soviet Union

[108] Nature Iraq (n 6) 2
[109] Iraq Ministry of Environment (n 1) 6.
[110] Ibid

in 1986. That war damaged the coastal areas in some countries and led to an increase in air pollution due to a massive oil leak and widespread fires in the oil wells.[111]

Furthermore, the United States' occupation of Iraq in 2003 played a crucial role in increasing the problem of air pollution because the Americans used internationally prohibited weapons,[112] for example, radioactive uranium and chemical weapons.[113] The use of such weapons was responsible for inducing fatal health problems for the Iraqi people, as evidenced mainly by the occurrence of cancerous diseases, the number of disabled new-born babies and levels infertility that have been recorded since then.[114] The harmful effects of these weapons are likely to pose significant long-term health risks for civilian populations in the region.[115]

Nevertheless, one could contend that while Iraq is still recuperating from the natural effects of both Gulf wars, it is now facing new ecological issues brought on by the present conflict with Islamic State (ISIS). Since the uprising began in June 2014, fierce fighting has

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[111] Khanjer Ebtesam F, A Yosif Mohammed and A Sultan Mathem (n 67) 56; Ulrichsen Kristian Coates, 'Basra, Southern Iraq and the Gulf: Challenges and Connections' Kuwait Programme on Development, Governance and Globalisation in the Gulf States Research Paper 21 (*London School of Economics and Political Science* 2012) 9-10; Sabya, I Farooq, McCoy Guitard, D., and Piachaud J. "Continuing collateral damage: the health and environmental costs of war on Iraq 2003." *London: Medact* (2003). 2; Husum H, Gilbert M and Wisborg T, *Save Lives, Save Limbs: Life Support for Victims of Mines, Wars and Accidents* (Third World Network 2000) quoted in Rae McGrath, *Cluster Bombs: The Military Effectiveness and Impact on Civilians of Cluster Munitions* (Landmine Action 2000) 20; Cobey James C, 'Save Lives, Save Limbs: Life Support for Victims of Mines, Wars, and Accidents' (2001) 285(6) *JAMA: The Journal of the American Medical Association* 812-813

[112] Toxic remnants of war are defined as 'any toxic or radiological substances resulting from conflict or military activities that form a hazard to human or environmental health'.

[113] Joint UNEP OCHA Environmental Unit, '*UNDAC Environmental Emergency Assessment Ammunitions Depot Explosions Brazzaville, Congo*' (March 2012) 7 <https://docs.unocha.org/sites/dms/Documents/Congo_UNDAC_Environment_Emerg_Assmt%20Final.pdf>accessed 5 February 2015; WHO and UNEP, '*Health and Environment Linkages Initiative - HELI*' <www.who.int/heli/en>accessed 5 February 2015

[114] Salvage Jane, '"Collateral Damage": The Impact of War on the Health of Women and Children in Iraq' (2007) 23(1) *Midwifery* 8; Weir Doug, 'Civilian Protection, Environmental Pollution and Conflict: A Role for the Public Health Community' (2015) 31(1) *Medicine, Conflict and Survival* 4

[115]Sabya, I Farooq, McCoy Guitard, D., and Piachaud J (n 111) 3; Royal Society, 'The Health Hazards of Depleted Uranium: Part I' (*The Royal Society*, 22May 2001) < https://royalsociety.org/topics-policy/publications/2001/health-uranium-munitions-i/> accessed 1 February 2018; Squibb Katherine S and McDiarmid Melissa A, 'Depleted Uranium Exposure and Health Effects in Gulf War Veterans' (2006) 361(1468) *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 639; Al-Muqdadi K, 'Discovery of DU Effects is a Humanitarian Mission' (2000) 296 *Althakafa Aljadeda Journal* 7; Abulsabor FM, 'Uranium: Uses, Effects and Its Behaviour in the Environment' (2005) 29 *Asyot Journal of Environmental Studies* 3; Al-Kharouf SJ, Al-Hamarneh IF and Dababneh M, 'Natural Radioactivity, Dose Assessment and Uranium Uptake by Agricultural Crops at Khan Al-Zabeeb, Jordan' (2008) 102(11) *Journal of Environmental Radioactivity* 975; Cheng YS, Kenoyer J and Glissmeyer J, 'Particle Size Distribution of Aerosols Generated Inside Vehicles' (2002) 82(6) *Health Physics* 156

occurred in and around the urban areas and industrial regions, which is affecting the already unstable environmental conditions.

Serious incidents, specifically the attack on the Baiji oil refinery, and damage to other industrial installations, have resulted in the release of toxins into the atmosphere, causing further air pollution. Further conflicts have occurred close to Kirkuk's oil fields and it is likely that (ISIS) will continue to focus their assaults on oil and gas facilities, thus increasing the probability of chemical incidents which expose civilians to dangerous forms and levels of pollution.[116]

The prolonged period of war has led to a massive deterioration of air quality in Iraqi cities as oil refineries and storage facilities, chemical warehouses and stores burned down. Random fires and explosions, the use of poor-quality fuels to run factories and transport vehicles, the indiscriminate destruction of forests and orchards and the destruction and reduction of green lungs in and around Iraqi cities have all compounded this effect.

In conflict, industrial and civil infrastructure is regularly targeted for destruction, despite the environmental risk arising from such actions.[117]

Moreover, as ISIS retreated from areas that it held, they often set oil wells and rigs on fire in order to provide cover from aerial bombardment, delay Iraqi forces or simply to degrade valuable resources, land, and infrastructure and terrorise communities.[118] The resulting smoke plumes from the wells obscured the sun for months, leading locals to refer to

[116] Zwijnenburg Wim, 'Iraq is Continuing to Struggle with Conflict Pollution' (*Peace Direct*, 15 March 2015) 3 <www.insightonconflict.org/blog/2015/03/iraqs-continuing-struggle-conflict-pollution/> accessed 1 February 2018; United Nations Environment Programme (UNEP), *Global Environment Outlook 2000*, vol 1 (Routledge, 2013:1982https://web.unep.org/geo/sites/unep.org.geo/files/documents/geo2000/english/index.htm
[117] United Nations Environment Programme (UNEP) (n 54) 9 and 35
[118] Peter Schwartzstein. The Islamic State's Scorched Earth Strategy. *Foreign Policy*, April 6, 2016. Accessed at: http://foreignpolicy.com/2016/04/06/the-islamic-states-scorched-earth-strategy/

it as the "Daesh Winter". In September when the Iraqi army recaptured the field, ISIS had set alight 20 wells as they retreated.[119]

2.5. Sources of Air Pollution in Iraq

The source of air pollutants can be natural or man-made (anthropogenic). It can also be both. Natural sources of air pollution include erosion by wind or a volcanic eruption, while a good example of man-made air pollutants is the emissions from the internal combustion engine. There are sources of pollution that can have their roots in nature and in human activity – forest fires are a good example of this.[120]

In Middle Eastern countries, including Iraq, population growth, increasing urbanization, the rising number of vehicles and inappropriate models of transportation all cause air pollution,[121] which is considered one of the most important environmental problems in the country.

In Iraq, the highest percentage of air pollution is in large industrial cities, which have seasonal heating requirements and large volumes of vehicles. As previously noted, major air pollution sources are power stations, oil and other industries. Increasingly, open burning of solid waste, heavy traffic emissions due to an aging fleet of vehicles and consumption of low-grade leaded fuel, and to the impact of 30 years of conflict[122] are doing enormous damage to

[119] Rudaw. *ISIS No Longer Controls Any Iraqi Oil*. Accessed at: http://www.rudaw.net/english/kurdistan/270920164; UNITAR. *Environmental Damage in Al Qayyarah, Iraq*. (2017). Accessed at: https://unitar.org/unosat/node/44/2541

[120] Eran Sher, 'Environmental Aspects of Air Pollution' in E Sher (ed), *Handbook of Air Pollution from Internal Combustion Engines: Pollutant Formation and Control* (Academic Press) (1998) 27

[121] Aenab Allaa M, Singh SK and Lafta Ali Jabir, 'Air Quality Assessment: A Statistical Approach to Stationary Air Monitoring Stations' (2015) 3(3) *International Journal of Advanced Research* 68; World Health Organization in Iraq, '*Briefing Note on the Potential Impact of Conflict on Health in Iraq: March 2003*', 1-2 <http://apps.who.int/disasters/repo/9141.pdf> 1 February 2018; Iqbal Zaryab, 'Health and Human Security: The Public Health Impact of Violent Conflict' (2006) 50(3) *International Studies Quarterly* 631

[122] Ulrichsen Kristian Coates (n 111) 9-10

the environment, and are seen as causes of cardiopulmonary disease.[123]The sources of air pollution in Iraq are described in the following sections.

2.5.1. Air pollution from natural sources

Whilst man-made pollution is a major environmental concern, there are many natural sources[124] of pollution which can occur in much greater quantities than their man-made counterparts. Notable natural sources contributing to air pollution include volcanic eruptions, which release SO_2, NO_x and particulate matter (dusts and ash) into the atmosphere;[125] forest fires, which release SO_2 and particulates;[126] and dust storms, which generate mainly particulate matter. Other natural sources of air pollutants include biological decay, which generates SO_2 and NO_x.[127]

Degradation of vegetation and increasing desertification have led to an increase in the frequency and severity of sandstorms in Iraq.[128] These dust storms increase the airborne concentration of heavy metals.[129] The term "air pollution" is used to describe concentrations

[123] Saeed Ismael Mohammed, Ramli Ahmad Termizi and Saleh Muneer Aziz (n 68) 58

[124] Legally, pollution of this sort is not regarded as pollution because the source is not human. The law is concerned only with people and human actions. Cases where pollution is caused by nature or is not subject to human control are therefore excluded from some international conventions. سحر مصطفى حافظ، حماية البيئة،مجلة أسيوط للدراسات البيئية 1992، صفحة 48[Hafez Sahar Mustafa, 'Environmental Protection' [1992]*Assiut Journal of Environmental Studies* 48; translated from Arabic to English by the author]; محمد عبد القادر الفقي، قضايا البيئة وكيفية حمايتها من التلوث -ابن سيناء للنشر والتوزيع القاهرة: 1993، صفحة 89[Al Fiqi Mohamed Abdel Qader, *Issues of Environment and How to Protect It from Pollution* (Ibn Sinah 1993) 89; translated from Arabic to English by the author]

[125] United States Geological Survey, 'The Cataclysmic 1991 Eruption of Mount Pinatubo, Philippines'' (1997) *United States Geological Survey Fact Sheet* 113-97 <https://pubs.usgs.gov/fs/1997/fs113-97/fs113-97.pdf> 29 January 2018

[126]Heil Angelika and Goldammer Johan, 'Smoke-Haze Pollution: A Review of the 1997 *Episode in Southeast Asia*' (2001) 2(1) *Regional Environmental Change* 24; Koe Lawrence CC, Arellano Avelino F and McGregor John L., 'Investigating the Haze Transport from 1997 Biomass Burning in Southeast Asia: Its Impact upon Singapore' (2001) 35(15) *Atmospheric Environment* 2723

[127] Haim Furman. "Dust Storms in the Middle East: Sources of Origin and Their Temporal Characteristics." *Indoor and Built Environment* 12, no. 6 (December 2003): 419-26. Accessed October 12, 2015. http://ibe.sagepub.com/content/12/6/419.full.pdf+html.

[128] Kais J. Al-Jumaily, and Ibrahim Morwa K (n 92) 851-58.

[129] Aenab Allaa M, Singh SK and Lafta Ali Jabir, 'Critical Assessment of Air Pollution by ANOVA Test and Human Health Effects' (2013) 71 *Atmospheric Environment* 84

of foreign matter capable of damaging animal, plant or human life as well as human-made structures and materials.[130]

Furthermore, green spaces are deteriorating visibly because of a lack of adequate irrigation and the indiscriminate logging of trees, both as fuel and to improve security. There is a consequent increase in the amount of exposed land, which is a primary source of dust.[131]

2.5.2. Air pollution from fixed industrial sources

Human intervention causes industrial pollution, which stems from a number of human activities as well as the use of utilities, inventions of various kinds and industrial waste, all of which have both a direct or indirect impact on the air environment.[132]

A great deal of pollution is caused by the air emitted from factories, power stations and certain industries including petrochemicals, oil, glass, bricks and cement. This happens because there is a shortage of chimney treatment equipment available in the country, and the little that is available is inefficient and obsolete.[133]

In addition, because there is not enough electric power, electric generators are used for both commercial and domestic energy needs.[134]To try to fill the gap in the electricity supply, at least in part, some 90% of Iraqi households use private generators in addition to the

[130] Varoujan Sissakian, Al-Ansari Nadhir, and Knutsson Sven (n 93) 1084-1094; Al-Dousari A and Al-Awadhi J, 'Dust Fallout Characteristics within Global Dust Storms Major Trajectories' (2013) 6(10) *Arabian Journal of Geosciences* 3877; Ackerman SA and Chung H, 'Radiative Effects of Airborne Dust on Regional Energy Budgets at the Top of the Atmosphere' [1992] *Journal of Applied Meteorology* 223

[131] Chaaban Farid B. 'Air Quality' (2008) 1 *Arab Environment: Future Challenges* 45; Jos Lelieveld and others. "Abrupt recent trend changes in atmospheric nitrogen dioxide over the Middle East." *Science advances* 1, no. 7 (2015): e1500498.

[132] Gloag Daphne, 'Is Low-Level Lead Pollution Dangerous?' (1980) 281(6255) *British Medical Journal* 1622

[133] United Nations High Commission for Refugees (n 82); United Nations Environment Programme (n 82) 8-15; Turner Barry (n 58); World Population Review, '*Iraq Population 2018*' (2017) <http://worldpopulationreview.com/countries/iraq-population/> 1 February 2018

[134] Aenab Allaa M, Singh SK and Lafta Ali Jabir (n 121) 68 and 69; Abdul Aziz, Tawfiq Khalid, and Mahmod Faiza. "Inventory of Gaseous Emission from Electrical Generators and Vehicles in Mosul City." *Tikrit Journal of Pure Science- Tikrit University* 15, no. 2 (2010): 167-173.

public network, or form part of a neighbourhood generator sharing arrangement.[135] Although the exact amount of gasoline and black oil burned in this way is unknown, this practice damages the quality of the air and harms to the environment to say nothing of noise pollution generated.[136]The generators, especially the more powerful ones, use diesel engines which yield high levels of hydrocarbons (HCs), carbon monoxide (CO) and volatile organic compounds (VOCs).[137]

Furthermore, municipal services in Iraq are poor, and one of the ways this shows itself is in the random burning of waste, a practice which discharges into the atmosphere large quantities of pollutants that have a negative effect on both the environment and human health.[138]

In addition, thermal power stations are the most popular type due to their high rate of production. These depend primarily on fossil fuels or their derivatives, and so are classified as high-pollution projects.[139] According to the report of the Iraqi Ministry of Environment about the air pollution from Al-Daurah thermal power station in 2014, it is demonstrated that there were high concentrations of air pollutants (SO_2; NO_2; H_2S and VOCs).[140]

In this regard, cities in Iraq have industrial zones that contain such air polluting industries as welding (gas and electric) the manufacture of pottery and the smelting.[141] There

245 Iraq Knowledge Network (IKN), Iraq Knowledge Network Survey 2011 <www.ilo.org/surveydata/index.php/catalog/31> accessed 1 February 2018; Ministry of Planning (n 77); Arab Union of Electricity, 'Statistical Bulletin 2010, Issue 19' <http://auptde.org/PublicationsCat.aspx?lang=en&CID=95> accessed 1 February 2018

[136] Fadi M. Doumani (n 5) 9

[137]Khalid A. Rasheed, Azeez Zaid A., and Al-Salhy Ali A. "Effects of Air Pollutants from Al-Dura Power plant in the Surrounding Area South Baghdad." *J. Int. Environmental Application & Science* 11, no. 2 (2016): 170-175.

[138] Richard R Brennan Jr and others, *Ending the US War in Iraq: The Final Transition, Operational Maneuver, and Disestablishment of United States Forces-Iraq* (Rand Corporation 2013) 260

[139] Kumar Sameer, Katoria Dhruv and Sehgal Dhruv, 'Environment Impact Assessment of Thermal Power Plant for Sustainable Development' (2013) 4(6) *International Journal of Environmental Engineering and Management* 567; Reena, R. K Singh, Gupta Singh, N. C., and Guha B. K. "Assessment of heavy metals in fly ash and Groundwater-A case study of NTPC Badarpur Thermal Power Plant, Delhi, India." *Pollution Research* 29, no. 4 (2010): 685-689.

[140] Aenab Allaa M, Singh SK and Lafta Ali Jabir (n 121); Khalid A. Rasheed, Azeez Zaid A., and Al-Salhy Ali A (n 137) 170

[141] Fadi M. Doumani (n 5) 9

are a number of cases where industrial areas that, when first established, were remote and outside the centre of the city and thus appropriate for industry are now encroaching upon residential areas which have expanded in response to the inrush of people described previously. There is no question that these areas are not fit for people to live in. Those who do live there are affected by constant air and noise pollution.[142]

2.5.3. Air pollution from movable industrial sources

A mobile source of air pollution is one which can move from one place to another, driven by its own power.[143]

Road transport emissions are a major source of air pollution.[144] This term is used to refer to all road traffic emissions, whatever the size and the use of the vehicle.[145] Although road transport emissions are considered in terms of the exhaust, this is only part of the story. Petrol or diesel fuel combustion produces exhaust gas, which contains a group of harmful pollutants such as carbon monoxide CO, oxides of nitrogen NO, VOCs and suspended particles.[146]

A number of developing countries see mobile air pollution sources as a cause for increasing concern.[147] Leaded gasoline is more common than unleaded gasoline in the great majority of developing countries.[148] Iraqi fuel contains two toxic substances: tetraethyl lead and tetra methyl lead.

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[142] Saeed Ismael Mohammed, Ramli Ahmad Termizi and Saleh Muneer Aziz (n 68) 58
[143] Thomas H Tietenberg and Lynne Lewis, *Environmental and Natural Resource Economics* (Routledge 2016) 584
[144] Abdul Aziz Saffawi, Tawfiq Khalid, and Mahmod Faiza (n 134) 167-173.
[145] Taha Al-Tayyar, and Al-Rawi Salem. "Reflections of Motor Vehicle Transportation on the Pollution of Iraqi Environment." *AL Rafdain Engineering Journal -Mosul University* 14, no. 4 (2006): 59-68.
[146] Psaraftis Harilaos N (ed), *Green Transportation Logistics: The Quest for Win-Win Solutions*, vol 226 (Springer 2015) 244
[147] World Health Organization and UNAIDS, *Air Quality Guidelines: Global Update 2005* (WHO 2006) 14
[148] Bruce Neil and Ellis Gregory M, *Environmental Taxes and Policies for Developing Countries*, vol 1177 (World Bank Publications 1993) 5, 64

Given the population density in cities and governorates, increasing public transport use has a negative effect on air quality and puts continuous pressure on the environment.[149]

In addition, since controls were removed from the import of vehicles, the number of vehicles on the road has increased dramatically, with a consequent deterioration in the quality of the air.[150] Moreover, most vehicles are in poor condition and require full maintenance, which for many owners is not possible or at least, not a priority, because of the economic condition of both individuals and the state.

2.6. Effects of Air Pollution on the Environment in Iraq

Air pollution, according to Tietenberg and Lewis,[151] also has economic consequences. The quest for unpolluted air is costly, as human beings will travel to places where the environment is pure. Likewise, preventing pollutants from escaping into the air and purifying the air once it has become polluted are expensive processes. However, those who have caused air pollution do not bear responsibility for paying the costs of mitigating its negative results.[152]

One of the most obvious effects of air pollution is visibility impairment or "haze". Haze is caused when light encounters pollutant particles and certain gases (nitrogen dioxide) in the air.[153] According to Marco and others,[154] air pollution is detrimental to the environment and worsens the effects of climate change due to crop damage, eutrophication and increased acidification in areas where the ecosystem is sensitive. Air pollution reduction policies

[149]Frank R Gunter. *The political economy of Iraq: restoring balance in a post-conflict society*. Edward Elgar Publishing, 2013. 9, 18, 210
[150] Ibid
[151] Thomas H Tietenberg and Lynne Lewis (n 143) 420
[152] Department for Environment, Food and Rural Affairs, *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland*, vol 1 (2007) 9-10 <www.gov.uk/government/uploads/system/uploads/attachment_data/file/69336/pb12654-air-quality-strategy-vol1-070712.pdf> accessed 31 January 2018
[153]Mark Jenner. "The politics of London air John Evelyn's Fumifugium and the Restoration." *The Historical Journal* 38, no. 3 (1995): 535-551.
[154]Marco Gemmer and Bo Xiao, 'Air Quality Legislation and Standards in the European Union: Background, Status and Public Participation' (2013) 4(1) *Advances in Climate Change Research* 50

calling for lower aerosol can also accelerate the pace of global warming owing to the removal of the cooling effect that these aerosols have.

There is evidence that air pollution has affected agriculture, not only by affecting air and water, but by affecting water and soil, which has a negative effect on crops. The European Commission[155] has estimated the value of crop losses in 2010 to be EUR 3 billion.

Iraq's Ministry of Environment has issued figures suggesting that environmental degradation in Iraq in 2008 cost between 4.9% and 8% of the country's GDP; using the mean estimate of 6.4% of GDP, this equates to 6.3 trillion Iraqi dinars or USD 5.5 billion.[156]

In the north of Iraq, civilians are subject to respiratory illnesses and regularly experience near suffocation because of the scorched-earth policy that has been used employed by ISIS militants as they retreat in the face of a military offensive to regain control of Mosul.[157] As UN Environment Chief Erik Solheim, however,

> This is sadly just the latest episode in what has been the wholesale destruction of Iraq's environment over several decades – from the draining of the marshlands to the contamination of land and the collapse of environmental management systems. […] This ongoing ecocide is a recipe for a prolonged disaster. It makes living conditions dangerous and miserable, if not impossible. It will push countless people to join the unprecedented global refugee population. That is why the environment needs to be placed at the centre of crisis response, conflict prevention and conflict resolution.[158]

[155]United States Environmental Protection Agency, '*2010 US Environmental Protection Agency (EPA) Decontamination Research and Development Conference Report*' (Office of Research and Development 2010) 8, 39

[156] Fadi M. Doumani (n 5) 9.

[157]Björnham, Oscar and others. "The 2016 Al-Mishraq sulphur plant fire: Source and health risk area estimation." *Atmospheric Environment* 169 (2017): 287-296.

[158] United Nations Environment Programme (UNEP), 'Mosul Battle Brings Environmental Damage, with Serious Impacts on Health, Prospects of Recovery' (*United Nations Environment Programme*, 27 October 2016) <www.unep.org/newscentre/mosul-battle-brings-environmental-damage-serious-impacts-health prospects-recovery> accessed 1 February 2018

Air pollution caused by war may be a major factor in the numbers of birth defects and cancers being reported in Iraq and other war zones, a study has suggested.[159]

Mozhgan Savabieasfahani, an Iranian toxicologist and lead author of the report, said *"alarming" levels of lead were found in the "baby" or "deciduous" teeth of Iraqi children with birth defects, compared with similar teeth donated from Lebanese and Iranian children*.

Savabieasfahani said "*the toxicological effects of the air pollution would inevitably have been damaging"*.

"*We found very high levels of mercury, lead, titanium and various toxic metals in hair of children and parents of children with disorders or severe birth defects, showing metal contamination has happened since 2003 – with increased disorders and defects*."

She added: "*We could see that when the bombing started so did the birth defects. In May 2010, 15% of 547 babies born at the [Basra] hospital had severe birth defects. This is in contrast to 2% to 4% that is normal*".[160]

2.7. Environmental Principles under the Iraqi Legislations

Given that the aim of this thesis is to make an environmentally positive contribution to the development of Iraqi environmental criminal law, it would be foolish not to briefly discuss the essence of these principles. Bearing in mind that environmental 'principles are general guides to action rather than detailed rules',[161] it is also necessary to discuss various regulatory mechanisms that may be used to give effect to these principles.

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[159] Inst Watson. For Int'l Studies, *Environmental Costs*, Costs of War Project, http://costsofwar.org/article/ environmental-costs (last visited Jan.13, 2015); Jessica Adley, and Grant Andrea. "The Environmental Consequences of War." *Sierra Club of Canada* (2003); Svante M Enzler,. "Environmental effects of warfare." *The impact of war on the environment and human health* (2006); Blake Lara. "The Failure of Environmental International Law during Times of War." *J. Land & Dev.* 4 (2014): 141.

[160] Vidal John. *Iraqi children pay high health cost of war-induced air pollution, study finds*. (2016), Guardian News and Media Limited. https://www.theguardian.com/global-development/2016/aug/22/iraq-children-health-cost-war-induced-air-pollution-study-toxic-waste-birth-defects.

[161] Stuart Bell, and McGillivray Donald, *Environmental Law* (7th edn, OUP 2008) 25

In view of an ever-increasing global population and the concomitant desire for higher standards of living for all humans through the increased provision of food, shelter, employment and recreation, effective environmental laws are urgently needed. To counter such usage and its consequences, environmental law is continually being developed and applied both internationally and domestically. Any such development and application are underpinned by a number of noteworthy principles through whose application environmental law seeks to maintain an appropriate balance between development and production on the one hand and conservation of the environment and natural resources on the other, while also allocating liability for environmental damage.[162]

On the other hand, the interpretation and enforcement of the principles of environmental law is a complex task. Despite global recognition of the importance of these principles, simply making reference to them in treaties or domestic legislation fails to provide guidance on how corporations, individuals or states should in fact conduct themselves so as to fulfil the purpose of these principles.[163] Various academics have, for example, noted that the principle of sustainable development is vague and that it identifies an important issue but fails to solve it.[164] Similarly, the "polluter pays" principle, which at first glance appears straightforward, is far more difficult to employ than one may think.[165] If, for example, the polluter is a large corporation, the possibility arises that the costs of pollution are simply viewed as overheads which are then passed onto the consumer in the form of increased

[162]Susan, Wolf, and Stanley, Neil. *Wolf and Stanley on Environmental Law* (4th edn, Cavendish Publishing 2004) 13

[163] That said, Bell and McGillivray submit that the mere adoption of environmental principles into legal instruments will, to some degree, positively affect the aims and objectives of administrative bodies and thus the setting of policies and the making of individual decisions. Stuart Bell, and McGillivray Donald (n 161) 60

[164] 'There is little sign yet of anything resembling an international legal consensus on what sustainable development might mean substantively.' Stuart Bell, and McGillivray Donald (n 161) 64. See also Lucas Alastair R, Tilleman William A and Hughes Elaine Lois, *Environmental Law and Policy* (Emond Montgomery Publication 2003) 26

[165] Vandekerckhove Karen, 'The Polluter Pays Principle in the European Community' (1993) 13(1) *Yearbook of European Law* 201

charges.[166] In other words, some believe that the "polluter pays" principle is a 'dishonest gimmick, making not the polluter pay, but the consumer'.[167]

There are three fundamental principles of environmental law. These are the principle of sustainable development, the precautionary principle, and the "polluter pays" principle. What follows is a discussion of these three cardinal principles as well as a few select subsidiary principles.

2.7.1 Sustainable development

Sustainable development is concerned with more than simply environmental issues and encompass three interdependent policy areas, which are (i) mutually reinforcing economic development, (ii) environmental protection and (iii) social development.

A nation that commits to sustainable development is committing to integrating and bringing into balance the environmental, economic and social aspects of their societies. There is a need for coordinated, concurrent and harmonious planning and delivery of services that address the environmental, economic and social goals of the nation. Managing air quality in a way that facilitates sustainable development places emphasis on the interfaces that exist between the economy and the environment, and the economy and society.[168]

Internationally, the challenge faced by those tasked with managing air quality is not just delivering cleaner air but also doing so without damage to the economy or to society. Sustainable development is especially critical in the developing world because countries face competing choices in relation to economic development, the use of natural resources and the management of environmental quality. It is possible that developing countries can avoid the

[166] Lucas Alastair R, Tilleman William A and Hughes Elaine Lois (n 164) 26
[167] Vandekerckhove Karen (n 165) 210
[168] Organisation for Economic Co-operation and Development (OECD), '*Sustainable Development: Critical Issues - Free Overview of the Report*' (2017) 1-4 <www.oecd.org/greengrowth/sustainabledevelopmentcriticalissues-freeoverviewofthereport.htm> accessed 31 January 2018

mistakes that have been made by industrialised countries and, by planning beforehand rather than attempting to remedy afterwards, can reduce the overall cost of degradation of the environment.[169]

This is not say that sustainable development is only important for developing countries. Even in developed countries,[170] sustainable development has a role to play in maintaining growth and prosperity; the fact the natural resource have a limited capacity means that sustainable utilisation of these resource is needed to protect them from degradation. In addition, if individuals or states have the absolute freedom to exploit and utilities natural resource irrationally then an inevitable environmental tragedy will emerge.[171]

Developing countries, should take into account significant developments in the field of long-term pollution control, and with due regard to the roles of relevant intergovernmental bodies and pollutant governing bodies in promoting the implementation of legal aspects relating to environmental regulatory mechanisms.[172]

International environmental and planning laws may demonstrate a significant principle of environmental law and its instruments which address the intersections between

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[169] Hafetz Jonathan L, 'Fostering Protection of the Marine Environment and Economic Development: Article 121 (3) of the Third Law of the Sea Convention' (1999) 15 *American University International Law Review* 583

[170] Notably, in 1997 the International Court of Justice ('ICJ') also recognised the importance of the principle of sustainable development with one of the most significant statements of recognition emanating from the separate opinion of Vice President Weeramantry in the Case Concerning the Gabcikovo-Nagymaros Project. This case pertained to an international treaty between Slovakia and Hungary, which governed the construction of a dam on the Danube River. In view of criticisms concerning its environmental impacts, Hungary abandoned the project only to be brought before the ICJ. Hungary argued, inter alia, that since the signing of the treaty environmental norms such as the principle of sustainable development had emerged which entitled them to abandon the project. The ICJ rejected this argument, noting that the development of such environmental norms was foreseeable at the time that the treaty was concluded; Case Concerning the Gabcikovo-Nagymaros Project (Hungaryl Slovakia) [1997] ICJ 3 reprinted in (1998) International Legal Materials 168, 204. See also: Vaughan Lowe. "Sustainable development and unsustainable arguments." *International Law and Sustainable Development: Past Achievements and Future Challenges* 19 (1999): 36-37; Alan E. Boyle, and Freestone David, eds. *International law and sustainable development: past achievements and future challenges*. Oxford University Press on Demand, 1999; Dire Tladi. *Sustainable development in international law: An analysis of key enviro-economic instruments*. Pulp, 2007.

[171] Hardin Garrett, 'The Tragedy of the Commons' (1968) 162(3859) *Science* 1243

[172] United Nations, *Report of the World Summit on Sustainable Development at Johannesburg*, South Africa, 26 August - 4 September 2002 A/CONF.199/20, para 29 <www.un.org/jsummit/html/documents/summit_docs/131302_wssd_report_reissued.pdf> accessed 25 February 2014

economic, environmental and social law (including other relevant aspects) and enable development that can last for the present and future generations.[173]

Principle 27 of the 1972 Stockholm Declaration states that 'States and people shall cooperate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development'.[174] The most widely accepted definition, however, comes from the 1987 United Nations Report of the World Commission on Environment and Development, known as the Brundtland Commission, which bore the title *Our Common Future.* It defined sustainable development as 'Development that meets the needs of the present without compromising the ability of the future generations[175] to meet their own needs'.[176]

The UN Conference on Environment and Development in Rio de Janeiro in 1992, reaffirmed many of the principles expressed in the Stockholm Declaration which provide a basic framework for environmental protection efforts such as the concept of sustainable development, which was formulated in Article 3 of the Rio Declaration as follows:

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[173] Centre for International Sustainable Development Law, '*What is Sustainable Development Law? A CISDL Concept Paper*' (2005) Centre for International Sustainable Development Law 1-4

[174]Ranee Khooshie Lal Panjabi. "From Stockholm to Rio: a comparison of the declaratory principles of international environmental law." *Denv. J. Int'l L. & Pol'y* 21 (1992): 215; Philippe, Sands, and Peel Jacqueline. *Principles of international environmental law*. Cambridge University Press, 2012.213; Yoshifumi Tanaka. "Human Security and International Law: Prospects and Problems." *Netherlands International Law Review* 55, no. 3 (2008): 416-420.

[175] There was at least one law case in which the rights of future generations were recognised as plaintiff in an action taken by a lawyer on behalf of the future generation against the Filipino Government. This was the Minors Oposa v. Secretary of the Department of the Environment and Natural Resources, Supreme Court of the Philippines, [G.R. No. 101083, 30 July 1993]. Mr. Oposa challenged the decision of the Department of the Environment and Natural Resources to permit a tree harvesting company to exploit a forest. The thrust of Mr Oposa's argument was that the tree harvesting scheme would obliterate the forest area and that future generations would be deprived of the benefits of this natural resource and denied the right to have a healthy and wholesome natural environment. His own children were present to represent the next generation and future generations. The Supreme Court of the Philippines agreed that Mr Oposa's action had merit and allowed the case to to proceed. The case was dealt with outside of court after the decision. Citation from Judge Davide: "*Needless to say, every generation has a responsibility to the next to preserve that rhythm and harmony for the full enjoyment of a balanced and healthful ecology. Put a little differently, the minors' assertion of their right to a sound environment constitutes, at the same time, the performance of their obligation to ensure the protection of that right for the generations to come*."; Eileen Skinnider,. *Victims of environmental crime: Mapping the issues*. International Centre for Criminal Law Reform and Criminal Justice Policy, 2012.39.

[176] World Commission on Environment and Development, Our Common Future (UN 1987) ch 2, para 1; Leeson JD. *Environmental Law* (Pitman Publishing London 1995) 38

> The right to development must be fulfilled to equitably meet developmental and environmental needs of present and future generations […] [T]o achieve this goal, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.[177]

Despite clear international and domestic recognition of the principle, certain commentators have noted that even if the Brundtland Commission's definition is adopted into law, it harbours too many ambiguities to enable a precise legal interpretation and the wording makes it impossible for it to be used to create a legally enforceable duty.[178] On this point, however, Boyle and Freestone state that whether it is a legal obligation or not, sustainable development is a goal capable of influencing the actions of states and international organisations and the outcome of litigation, and therefore has the potential to bring about significant change and development in the law.[179]

Notably, *sustainable development* has been identified by certain authors of environmental law as being 'undoubtedly the basic principle of environmental law'.[180]

An interesting aspect of sustainable development is that its accomplishment requires achievement of two aims: the striking of an equitable balance between present and future; and the efficient use of limited economic resources, which include social capital.[181]

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[177] Mark Jenner (n 153) 535-551.
[178] Stuart Bell, and McGillivray Donald (n 161) 52
[179] Alan E. Boyle, and Freestone David (n 170) 29
[180] Lucas Alastair R, Tilleman William A and Hughes Elaine Lois (n 164) 22, 28. When commenting on the status of the various principles of environmental law, specifically states that '[i]f any hierarchy exists in them it must surely be that sustainable development must be the first and greatest principle and that all others should serve that end'. See also Tromans Stephen, 'High Talk and Low Cunning: Putting Environmental Principles into Legal Practice' (1995) Journal of Planning and Environmental Law779, 791; Tromans states that 'as an article of faith internationally, within the E.C., and by the United Kingdom Government, it [the principle of Sustainable Development] is capable of subsuming all other principles'.
[181] Galizzi Paolo, '*Globalisation, Trade and the Environment: Broadening the Agenda after Seattle*?' (2000) 25-28

In view of all of the above, it is submitted that the challenge facing legislators wishing to develop environmental law is to ensure that the principle of *sustainable development* is incorporated into law in a way that makes it more achievable and enforceable.

Therefore, there is overwhelming support for the sustainable view that reform of air pollution control law will be needed in which the principle of sustainable development would fill many gaps in existing provisions. For example, legislative instruments and market-based mechanisms, may be involved or covered by the proposed legislation to ensure that air environment are sustainably aligned.[182]

In this context, control of air pollution through *sustainable development* has been seen as a necessary approach of long-term activity to restrict environmental impacts from air pollution within acceptable bounds.[183]

The Rio Declaration states that '*human beings […] are entitled to a healthy and productive life in harmony with nature*'.[184] Since air pollution damages both human health and the environment, air quality implicates both environmental and health concerns.[185]

Agenda 21 supports this principle through its objective of the elimination of "*unacceptable or unreasonable*" risks from air pollution "*to the extent economically feasible*".[186]

The Rio Declaration suggests that unreasonable risks should be eliminated for future generations as well as for this one.[187] To meet this objective, it states that countries '*should reduce and eliminate unsustainable patterns of production and consumption*'.[188] Eliminating unsustainable patterns of production and consumption would demand integrated decision

[182] Sunkin Maurice, *Sourcebook on Environmental Law* (Routledge 2001) 45-49
[183] Panaiotov Todor, *Economic Instruments for Environmental Management and Sustainable Development*. (UNEP 1994) 2
[184] Rio Declaration on Environment and Development (n 59) principle 1
[185] UN Conference on Environment and Development, Agenda 21, UN Doc A/CONF.151.26 (1992).Agenda 21 seeks to avoid impairment of human health and 'yet encourage development to proceed'.
[186] Ibid
[187] Rio Declaration on Environment and Development (n 59) principle 3
[188] Ibid, principle 8

making[189] with considerations of air quality being integrated into decisions concerning production and consumption, so that air quality goals are achieved in part by those decisions.

Most of the air pollution described here, though presenting in many forms, arises from one course: the burning of fossil fuels. The aim of Agenda 21 is to reduce 'adverse effect[s] on the atmosphere from the energy sector' by, for example, increasing the use of renewable energy and using energy more efficiently.[190]

In Iraqi environmental law, environmental protection from air pollution is based on the principles of sustainable development; maintaining and raising environmental protection standards; preventing the erosion of standards in response to the demands of industry and trade; and effectively enforcing environmental laws and regulations.

The importance of the principle of sustainable development is evidenced through its direct incorporation into Article 2, paragraph 16 of the Law on the Protection and Improvement of the Environment, No. 27 of 2009, which provides among other things that:

> Sustainable development: economic and social development that addresses the needs of current generations and which does not prejudice those of future generations, especially in respect of preserving environmental systems and the rational use of natural products.[191]

Moreover, Article 1 asserts that:

> This law aims to protect and improve the environment through the removal and rehabilitation of damage found or that has occurred in it, as well as to protect public health, natural resources, biodiversity, cultural and natural heritage. This is to be carried out in collaboration with

[189] Ibid, principle 4
[190] UN Conference on Environment and Development, Agenda 21, UN Doc A/CONF.151.26 (1992).Agenda 21 seeks to avoid impairment of human health and 'yet encourage development to proceed'; Driesen David M, 'Sustainable Development and Air Quality: The Need to Replace Basic Technologies with Cleaner Alternatives' (2008) 18 *Widener Law Journal* 883; John C Dernbach, *Stumbling Toward Sustainability* (Environmental Law Institute 2002) 5-6
[191] Ibid (n 21) art 2 (16)

specialized agencies to ensure *sustainable development* and the achievement of international and regional cooperation in this area [emphasis added].[192]

The principle is asserted again in Article 8, which provides that:

> State planning organs will assume responsibility for improving environmental protection, combating pollution; for the rational consumption of natural products and *sustainable development* in the formulation of development projects [emphasis added].[193]

The means through which humanity may achieve sustainable development are clearly stated in Article 8 as the 'linkage of environmental issues with the policy for development and planning'. Certain actions are necessary for sustainable development. One is to link development and planning policy with environmental issues; it is also necessary to reduce consumption, to move towards the use of renewable resources, to use technologies that are environmentally friendly and to apply policies to achieve effective waste management.

We should note here that this principle is falling under sustainable and planning measures rather than administration, civil or criminal measures. It was crucial to mention it in this chapter because it considered as one of the important principles in environmental law.

2.7.2 The "polluter pays" principle

The polluter pays principle was originally developed, in 1972, as a purely economic principle by the Organisation for Economic Co-operation and Development (OECD)[194] but has since developed into an environmental principle that essentially requires polluters to take responsibility for any damage that they cause.[195] The first instance where the principle was

[192] Ibid, art 1
[193] Ibid, art 8
[194] Vandekerckhove Karen (n 165) 201
[195] Stuart Bell, and McGillivray Donald (n 161) 52; Lucas Alastair R, Tilleman William A and Hughes Elaine Lois (n 164) 26

internationally received as an environmental principle was upon its incorporation into Principle 16 of the Rio Declaration,[196] which stated that:

National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution […].[197]

In addition, paragraphs 2.14 and 30.3 of Agenda 21 required that the price of goods and services should reflect environmental costs[198] implicitly endorsing the polluter pays principle.

Since then, the polluter pays principle has featured in numerous international treaties. These include the 2000 London Protocol on Preparedness, Response, and Cooperation to Pollution Incidents by Hazardous and Noxious Substances;[199] the 1992 OSPAR Convention;[200]the 1992 Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes;[201] and the 1996 London Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.[202] Unambiguously, the polluter pays principle is a widely accepted principle of environmental law.

The principle can be simply articulated to mean that those who cause environmental damage should bear the costs of compensating the victims of such damage. In this way, public financing of repairing environmental damage can be in most cases avoided, as the polluters themselves should finance those efforts, provided they can be identified.

[196]Birnie Patricia W and Boyle Alan E, *International Law and the Environment* (Clarendon 1992) 92
[197]'Rio Declaration on Environment and Development' Report of the United Nations Conference on Environment and Development UNGA (Rio de Janeiro, 3-14 June 1992) A/CONF.151/26 (vol I)
[198]Ibid
[199]Preamble
[200]art 2(2)(b)
[201]art 2(5)(b)
[202]art 3(2)

The polluter pays principle can be justified on various grounds, including economic efficiency and fairness,[203] for if those responsible for environmental damage are profiting from their harmful activities, then they should be made to pay for any damage that results. Making the polluter pay also increases efficiency by creating an economic incentive to minimise pollution.

Fairness also requires that the general public shall not be held responsible for the costs of measures taken to protect or restore the damaged environment; rather, it is polluters themselves who should bear the cost of environmental damage.[204] To allow the contrary means that innocent people would be made to pay such costs, which is certainly an unjust and undesirable result.

The polluter pays principle is an economic principle in the sense that the costs of pollution are incurred by the polluter themselves and not by society at large.[205] It is of particular importance for the effective implementation of the polluter pays principle that the polluter be known or identifiable so as to impose liability on him. While it is sometimes easy to identify the polluter if there is a direct and obvious link between the damage and the polluter's activity, this is not always the case.[206]

As noted above, the polluter pays principle is a liability principle, which means that it forms the basis of environmental liability, whether this liability is civil or criminal. Thus the polluter pays principle can be implemented by means of civil law as well as criminal law. Another aspect of this principle is its role as an economic instrument, for example in the form

[203] Wilkinson David, *Environment and Law* (Psychology Press 2002)121

[204] Rice P, 'From Lugano to Brussels via Arhus: environmental liability White Paper published' (2000) 8(2) *Environmental Liability* 39

[205] Sanford E Gaines. "The polluter-pays principle: from economic equity to environmental ethos." *Tex. Int'l LJ* 26 (1991): 463.

[206] Jones B, 'European Commission: Proposal for a Framework Directive on Environmental Liability' (2002) 14(1) *Environmental Law and Management* 5; Paterson John, 'Sustainable Development, Sustainable Decisions and the Precautionary Principle' (2007) 42(3) *Natural Hazards* 515; Resnik David B, 'Is the Precautionary Principle Unscientific?' (2003) 34(2) *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 329

of tax and other economic incentives which can play a significant role in the internalization of environmental costs.

The polluter pays principle is an important environmental policy tool, not only because it is consistent with the concept of fairness, but also because it provides a strong economic incentive for industries and individuals to change unsound environmental behavioural patterns and reduce pollution. The further weakening of the polluter pays principle will mean that there are ever few incentives for those whose actions threaten the environment to take steps to prevent pollution-related problems from arising in the first place.

Mention has already been made of the perception that the right to pollute can be bought for the monetary equivalent of the environmental cost sustained. This problem is compounded by the existence of the so-called "corporate veil" whereby responsibility for environmental harm is attached to a juristic person (the corporation) rather than natural persons (the directors or managers). Accordingly, the problem of "spill-over" is created where fines are simply passed on to innocent persons such shareholders and consumers.[207]

Unfortunately, simply imposing substantial fines with the hope that they will provide sufficient deterrence may well result in penalties in excess of a corporation's ability to pay, a predicament commonly referred to as the 'deterrence trap'.[208] There is also the related 'retribution trap', whereby the necessary services of a particular corporation may in effect be denied to consumers if a financial penalty is such that the corporation can no longer function appropriately.[209] Undoubtedly, the mere imposition of financial penalties on polluters does not necessarily equate to making them pay.[210]

[207] Fisse Brent, 'Sentencing Options Against Corporations' (1990) 1(2) *Criminal Law Forum* 211
[208] Ibid 217
[209] Ibid 218
[210] Leeson JD (n 176) 482

Understandably, the polluter pays principle has been described as meaningless in the absence of a system of liability, a mechanism for compensation, charges for effluents or other such solutions.[211]

Curiously, the "polluter pays" principle, which is the main principle related to environmental liability, are barely evident in the Iraqi legal system. Neither the Constitution nor any other legislation make reference to this principle.

As previously noted, environmental law in Iraq does not mention "the polluter pays" principle, but it is widely applied in the context of criminal offences that incur financial penalties. At the root of the principle is the requirement that polluters should meet the costs of their pollution and that those costs should not be transferred to the end user through the mechanism of higher prices. It is for the responsible authority in charge to take care over how the "polluter pays" principle is implemented, making sure that whoever has caused the damage compensates victims and restores the environment to its previous condition.

The Law on the Protection and Improvement of the Environment, No. 27 of 2009 deals with various environmental offences that have to do with pollution of one kind or another, including air pollution, noise pollution, polluting the marine environment and illegal handling of waste. These offences are punishable by a term of imprisonment and/or a fine; civil liability for acts and omissions that have caused damage to the environment can be pursued under the Iraq Civil Law.

However, Article 32, paragraph 1 of the Law to Protection and Improvement the Environment in Iraq No. 27 of 2009 provides for a civil liability doctrine in clear terms:

> Individuals are personally responsible for their actions, negligence or shortcomings in the conduct of tasks falling within their care, as well as for monitoring or controlling their personnel. This includes non-compliance with or violations of the laws, regulations and notifications relating to environmental damage. In cases of environmental damage, they will be

[211]Tromans Stephen (n 180) 790

asked to pay for the removal of the damage within an adequate period of time and to employ special means to ensure that conditions return to their original state and within the timeframe indicated by the Ministry.[212]

This provision states that any person who damages the environment or who is responsible for others who do so, and regardless of whether that damage occurred naturally or was the result of an intentional act, is liable to pay compensation.

The compensation in question includes compensation for environmental damage that interferes with the lawful use of the damaged environment by others, whether temporarily or permanently; damage that reduces the aesthetic and/or economic value of the environment; and whatever it costs to rehabilitate the environment. Important as these provisions are, there is a need for additional rules that would make the burden of proof easier to deal with and extend the limitation beyond that which is provided by the Iraq Civil Law.[213]

As noted above, the polluter pays principle is a liability principle, which means that it forms the basis of environmental liability, whether this liability is civil or criminal. Thus the polluter pays principle can be implemented by means of civil law as well as criminal law.

Moreover, Law on the Protection and Improvement of the Environment, No. 27 of 2009 and related legislations impose fines and punishments on polluters who commit certain environmental offences, and in theory, polluters with liability may face civil and criminal action to compensate victims of the environmental damage resulting from their activities.

To summarised, the polluter pays principle is related to the models mentioned in this chapter. This is because it's taking into account preventing any environmental harm, which has been highlighted in details in the next section of this chapter.

[212] Ibid (n 21) art 32 para 1
[213] Ibid (n 21) art 32, para1

2.7.3 The precautionary principle

Another important environmental principle, which receives a great deal of attention in environmental law and other international instruments tackling environmental protection, is the Precautionary Principle. This principle has become a critical aspect of environmental law throughout the world and has increasingly gained support within the global community.[214] The precautionary principle has been incorporated into a number of international legal instruments, including the United Nations Convention on Biological Diversity 1992; the United Nations Convention on Climate Change 1992; and the Convention of the Protection of the Ozone Layer.[215]

Principle 15 of the Rio Declaration states that:

> In order to protect the environment, the precautionary approach shall be widely applied by States according to their capability. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.[216]

[214] As with the principle of sustainable development, a judgement (this time a dissenting judgement) by Judge Weeramantry of the ICJ is used to support this contention. The case involved New Zealand contesting France's right to conduct nuclear tests in the South Pacific. Judge Weeramantry acknowledged that the precautionary principle was 'gaining increasing support as part of the international law of the environment' and concluded that it should be employed 'to prevent, on a provisional basis, the threatened environmental degradation, until such time as the full scientific evidence becomes available in refutation of the New Zealand contention.' It is submitted that although Judge Weeramantry may be correct in stating that the precautionary principle is gaining increasing support as part of the international law of the environment, the international conventions and cases already mentioned unfortunately demonstrate that such support fails to provide a unified understanding of the principle that can be adopted into, and made readily applicable through, various international and domestic legal instruments. In sum, it is evident that the precautionary principle is generally considered to be an important guiding principle for the development of environmental law. What is also evident, however, is that this principle will need be adopted into legislation and treaties in a way that provides greater consensus as to its significance; Owen, McIntyre, and Mosedale Thomas. "The precautionary principle as a norm of customary international law." *J. Envtl. L.*9 (1997): 221; *New Zealand v France* [1995] ICJ Rep 288 at 342.

[215] United Nations Economic and Social Council Commission on Sustainable Development, '*Rio Declaration on Environment and Development: Application and Implementation*' (1997) Report of the Secretary-General E/CN.17/1997/8 http://www.un.org/esa/documents/ecosoc/cn17/1997/ecn171997-8.htm

[216] World Health Organisation, '*Dealing with Uncertainty – How Can the Precautionary Principle Help Protect the Future of Our Children?*' in M Martuzzi and A Tickner (eds), *The Precautionary Principle: Protecting Public Health, the Environment and the Future of Our Children* (WHO) (2004) 15

The international conventions already mentioned demonstrate that such support fails to provide a unified understanding of the principle that can be adopted into, and made readily applicable through, various international and domestic legal instruments.

The precautionary principle is about "*being safe rather than sorry*".[217] The essence of the precautionary principle is the belief that the best way to protect the environment is through prevention rather than cure, as it is less expensive to prevent environmental damage in advance than to restore a damaged environment. The principle also recognises that some forms of environmental damage are beyond repair because of their irreversible nature or because the state of the art is not sufficiently developed to ascertain with complete certainty the potential of some activities to cause environmental harm; thus, its advocates argue, the precautionary principle should be applied despite the lack of scientific certainty or insufficient evidence of adverse environmental effects.

In the early stages of its development, the precautionary principle was the belief that society should seek to avoid environmental damage through careful planning and by blocking potentially harmful activities.[218] In practice, however, it is often difficult to predict all the environmental consequences that may result from human exploitation of natural resources. Such uncertainty has given rise to the formulation of the precautionary principle, which requires that where there are threats of serious environmental damage, a lack of conclusive scientific knowledge about the possible damage cannot be used as an excuse for postponing the implementation of measures to prevent such threats from becoming reality. The essence of the principle is that because science is not infallible, there may not always be proof how, when or why environmental degradation may occur, but there may nonetheless be reasonably

[217] Stuart Bell, and McGillivray Donald (n 161) 52
[218] Tickner Joel A, Raffensperger Carolyn and Myers Nancy, *The Precautionary Principle in Action: A Handbook* (Science and Environmental Health Network 1999) 23

sufficient information available to suggest that such degradation may occur, in which case action should be taken to avoid such degradation.[219]

In the context of air pollution control, it is not always easy to understand how or if the precautionary principle applies. In part, this uncertainty stems from the complexities arising from the difference between the precautionary principle and the prevention principle.[220] Both principles apply to air pollution control, given that each stage in the implementation process is to include different measures designed to manage a level of harm that can be difficult to determine or to reduce the probability of air pollution risks.[221] To avoid confusion, the difference between preventive approaches and precautionary approaches is basically related to the difference between environmental risk and scientific uncertainty.[222]

Preventive approaches respond to well-known risks from the impact of air pollution. When the risks associated with these effects are definitively known are known by those with primary responsibility for controlling air pollution with a given jurisdiction, legal measures must be taken to assess and manage the reduction of risks to human health and any environmental impacts. The purpose of preventive approaches is to mitigate the well-known risks that air pollution poses to human health and the environment.[223]

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[219] Pedersen Ole W, 'Environmental Principles and Environmental Justice' (2010) 12(1) *Environmental Law Review* 26; Tromans Stephen (n 180) 780

[220] Ortwin Renn, , Stirling Andrew, and Müller-Herold Ulrich, *The Precautionary Principle: A New Paradigm for Risk Management and Participation* (Institute du Development Durable et des Relations Internationals 2004) 2

[221]François, Benaroya, and Kosciusko-Morizet Nathalie, '*Making Sense of the Precautionary Principle*' (European Trade Study Group (ETSG) 2001 Conference, Brussels, September 2001) 2

[222]Trouwborst Arie, 'Prevention, Precaution, Logic and Law: The Relationship between the Precautionary Principle and the Preventative Principle in International Law and Associated Questions' (2009) 2 *Erasmus Law Review* 105

[223] This is an example of the offence of exposing others to hazrd or risk ("miseen danger d'autrui"), provided for in Article 223-1 of the French Criminal Code, which is committed by deliberately instigating an immediate risk of death or injury through injury or permanent impairment by the manifestly deliberate breach of a specific obligation to maintain safety or to act prudently in accordance with the law. This misdemeanour is punishable by one year in prison and a fine of €15,000. Some commentators, interpret Article 223-1 CC as providing criminal sanction for non-compliance with the precautionary principle. The Criminal Chamber of the Court of Cassation interpreted Article 223-1 CC as compatible with its application to environmental cases. In particular, this interpretation was applied to a case of the widespread contamination of water and soil by emissions of lead, arsenic and cadmium from a plant which recycled batteries and other metal residues and which was located only 500 meters from the centre of a village. The Court of Cassation ruled that the trial judge, in pronouncing an acquittal, despite having noted that the factory was very close to the village centre and in adjacent to a

On the other hand, precautionary approaches inherently deal with risks where scientific uncertainty limits understanding of the potential for harmful levels of air pollution, or where regulatory frameworks require steps to prevent harm to human health and the environment, even if the scientific evidence of the risk of harm is unverifiable.[224]

Environmental damage can affect areas far from their source and do not respect jurisdictional boundaries.[225] The principle manifests itself in a variety of ways,[226] but generally takes the form of due diligence, thereby preventing harmful action before an environmental harm has been caused. Its application should move law-making away from issues of causation and the need for 'conclusive proof' and towards legal actions based upon prevention.[227]

In summary, it is evident that the precautionary principle is generally considered to be an important guiding principle for the development of environmental law. What is also evident, however, is that this principle must be adopted into legislation and treaties in a way that provides greater consensus as to its significance. Where it has been embraced by legislators, it has had a significant influence on policymaking decisions concerned with the possibility of major human impacts and the ecological effects of pollution on the global and domestic environment.[228]

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playground which had to be closed because of the pollution of the soil, on the one hand, and that the presence of lead, arsenic and cadmium which posed a threat of renal cancer, on the other hand, had disregarded the meaning and scope of Article 223-1 CC. Indeed, according to the Court of Cassation, 'immediate risk' did not connote instantaneous risk, therefore rendering the law to be compatible with progressive poisoning by exposure to a contaminant; Philipsen, N. J., M. G. Faure, and K. Kubovicova. "*Fighting Environmental Crime in Sweden: A Country Report. Study in the framework of the EFFACE research project*." (2015).24.

[224] Gehring Markus W and Cordonier Segger Marie-Claire, '*Precaution in World Trade Law: The Precautionary Principle and its Implications for the World Trade Organization*' (2014) 3-4<http://cisdl.org/public/docs/news/brief_precaution_trade.pdf> accessed 11 March 2014.

[225] This is encapsulated in Principle 2 of the Rio Declaration (n.197) that states, 'States have […] the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction'.

[226] Pedersen Ole W (n 219) 35

[227] Bullard Robert D, *Dumping in Dixie: Race, Class, and Environmental Quality* (Westview Press 2008) 121-125

[228] Gardiner Stephen M, 'A core precautionary principle' (2006) 14(1) *Journal of Political Philosophy* 33

Curiously, the precautionary principle, which is the main principle related to environmental liability, are barely evident in the Iraqi legal system. Neither the Constitution nor any other legislation make reference to this principle, and the only environmental principle that has been referred to in the Law on the Protection and Improvement of the Environment is the environmental impact assessment. Consequently, it is unclear whether Iraq openly adopts these principles or not in a strict legal sense.

As described in Article 2, paragraph 17 of this law:

> Environmental Assessment of environmental impacts [involves] studies and qualitative environmental analysis of proposed projects that could lead to activities that are harmful to human health or the environment, both in the present and in the future'.[229]

The law reaffirms the application of environmental impact assessment to a wide range activities with the potential to affect the environment adversely, and the requirement that these assessments must precede the authorisation of new activities. To give this requirement teeth, the Environmental Impact Assessment Bylaw was promulgated in compliance with the Law on the Protection and Improvement of the Environment, No. 27 of 2009 and provides a detailed framework for how environmental impact assessment is to be processed and carried out.

While environmental law accepts environmental impact assessment as a clear principle, it has been regarded as a precautionary method, and environmental legislations in Iraq operates on the precautionary principle by insisting that their impact on the environment be assessed before a number of human activities can be authorised.

The precautionary principle is also to be seen at work at the administrative level, where public authorities charged with monitoring Iraq's public health and well-being are made aware that precaution is an essential part of meeting their responsibilities. Paragraphs 1

[229] Ibid (n 21) art 2 para 17

and 2 of Article 10of the Law on the Protection and Improvement of the Environment, No. 27 of 2009 stipulate that:

> Para (1). Project managers are obliged to submit an impact assessment report prior to beginning their work. This report will comprise the following:
>
> A. An evaluation of the positive and negative impacts the project may have on the environment, as well as the surrounding environment;
>
> B. The proposed means to eliminate and treat sources of pollution, including through controls and environmental warnings;
>
> C. Potential and emergency pollution incidents and the necessary steps needed to prevent them;
>
> D. Technological means that have the least damaging effect on the environment and guidance on their use;
>
> E. Reduction and recycling of waste, whenever possible;
>
> F. Present an environmental perspective in projects and evaluate the environmental load in relation to the output;[230]
>
> Para (2). Technical and economic studies on any project should refer to the objectives referred to in Article 1 above.[231]

The essentiality of the precautionary principle is underscored in Article 11of the Law on the Protection and Improvement of the Environment, No. 27 of 2009, which states that:

> Any activity undertaken by an organization with an impact on the environment cannot go ahead without first obtaining the approval of the Ministry.[232]

Thus, the purpose of preventive approaches is to mitigate the well-known risks that air pollution poses to human health and the environment.[233]

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[230] Ibid (n 21) art 10 para 1
[231] Ibid (n 21) art 10 para 2
[232] Ibid, art 11
[233] This is an example of the offence of exposing others to hazrd or risk ("miseen danger d'autrui"), provided for in Article 223-1 of the French Criminal Code, which is committed by deliberately instigating an immediate risk of death or injury through injury or permanent impairment by the manifestly deliberate breach of a specific

Therefore, criminal law applies as soon as the administrative provision (e.g. in the form of an emission limit in a licence) has been violated, whether or not this causes harm to the environment.[234] Hence, this principle is related directly with models A and B because both models are focusing on the administration and criminal provisions for protecting against environment.

2.7.4 Subsidiary principles

Although there is general academic agreement regarding the existence of the three aforementioned cardinal principles of environmental law, there is far less agreement on how many distinct subsidiary principles exist.[235] As it is outside the scope of this thesis to delve into the nature and status of the numerous subsidiary principles, only a few examples will be discussed.

The first is *the principle of prevention*, which is aimed at prohibiting damaging activities by requiring that timely action be taken to eliminate or minimise environmental damage before it occurs.[236] In other words, this principle requires that possible environmental harm should be pre-empted' at its source, thus favouring the prevention of harm rather than

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obligation to maintain safety or to act prudently in accordance with the law. This misdemeanour is punishable by one year in prison and a fine of €15,000. Some commentators, interpret Article 223-1 CC as providing criminal sanction for non-compliance with the precautionary principle. The Criminal Chamber of the Court of Cassation interpreted Article 223-1 CC as compatible with its application to environmental cases. In particular, this interpretation was applied to a case of the widespread contamination of water and soil by emissions of lead, arsenic and cadmium from a plant which recycled batteries and other metal residues and which was located only 500 meters from the centre of a village. The Court of Cassation ruled that the trial judge, in pronouncing an acquittal, despite having noted that the factory was very close to the village centre and in adjacent to a playground which had to be closed because of the pollution of the soil, on the one hand, and that the presence of lead, arsenic and cadmium which posed a threat of renal cancer, on the other hand, had disregarded the meaning and scope of Article 223-1 CC. Indeed, according to the Court of Cassation, 'immediate risk' did not connote instantaneous risk, therefore rendering the law to be compatible with progressive poisoning by exposure to a contaminant; Philipsen, N. J., M. G. Faure, and K. Kubovicova. "*Fighting Environmental Crime in Sweden: A Country Report. Study in the framework of the EFFACE research project*." (2015).24.

[234]Nuno Garoupa. *Criminal law and economics*. Edward Elgar Publishing, (2009).320

[235] Henderson Paul GW, 'Some Thoughts on Distinctive Principles of South African Environmental Law' (2001) 8(2) *South African Journal of Environmental Law and Policy* 139

[236]Susan, Wolf, and Stanley (n 162) 15

having to remedy what has already occurred.[237] The preventative principle is that measures taken in line with it do not hinge on the appearance of ecological problems but are taken in anticipation of such problems. An example of the principle can be found in Article 194 of the United Nations Convention on the Law of the Sea (UNCLOS), which obliges states to prevent, reduce or control pollution of the marine environment, whether within or outside of their own waters.

Secondly, *the preventative principle* generally pursues environmental activity and allows action to be taken to protect the environment at an early stage.[238]

The prevention principle has been established by a number of international environmental frameworks. It was put forward in the Stockholm Declaration as the obligation that nations have '*to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction*'.[239] The legal aspects of the preventive approach were set out in Article 30 of the United Nations General Assembly as international obligations with the provision that, among other things;

> All States have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[240]

To introduce a national responsibility for ensuring that measures to control environmental pollution and protect health and safety have been performed, domestic laws should meet both the standards set in these international environmental frameworks and the legal aspects of international environmental law. To do so would enable environmental and

[237] Stuart Bell, and McGillivray Donald (n 161) 52
[238] Beham Markus P, 'Book Review: Philippe Sands and Jacqueline Peel, Principles of International Environmental Law' (2016) 18(1) *Austrian Review of International and European Law Online* 407
[239] Declaration of the United Nations Conference on the Human Environment (1972) http://www.un-documents.net/unchedec.htm accessed 5 March 2014; Arie Trouwborst (n 209) 105
[240] United Nations Conference on Trade and Development, *International Investment Instruments: A Compendium*, vol XII (UN 2003) 57-70

planning laws in domestic jurisdictions to authorise environmental governing bodies and their local authorities to set standards of best practice in relation to air pollution prevention. In this way, the national laws for air pollution prevention could require relevant stakeholders to carry out preventive schemes or programmes to identify and assess inappropriate or unfriendly environmental practices For example, provisions within such laws could authorise schemes or programmes to reduce the harmful effects of air pollution.

Finally, many forms of air pollution control must be carried out on the basis of shared approaches to be effective. Therefore, the third subsidiary principle is the pursuit of various forms of *cooperative approaches or coordinated measures* to mitigate the risks that outdoor pollution poses to human health through economic activities that provide an opportunity to develop a useful level of understanding of cooperation, particularly in terms of how stakeholders prioritise the various stages and processes involved in air pollution control, and the specific potential consequences of complying with state-enforced environmental and planning laws.

2.8. How to Punish Environmental Pollution in Iraq? Some Reflections on Various Models of Criminalization of Environmental Harm

An effective environmental criminal system requires a combination of measures that penalises both abstract and concrete endangerment of the environment, as well as an independent crime for situations where pollution has had serious consequences.[241]

Several different possibilities for punishing environmental pollution exist in current legislation.

All of these models have different implications for what must be proven in a Criminal Court.[242] The question that is of particular interest to us is whether incrimination (and

[241]Michael Faure, and Heine Gunter. "*Environmental criminal law in the European Union: documentation of the main provisions with introductions*." (2000).128-130

therefore the information needed to prove a violation of this provision) is addressed directly towards the protection of the environment or whether such protection is only achieved in an indirect way, e.g. by criminalizing the violation of licencing conditions.[243]

Therefore we will give a brief overview of some of these modes of punishment and address the above questions from a critical perspective.

In order to facilitate the comparability of the description of the various models this section will try to follow a similar pattern. First, a general description of the way the particular model works will be provided; then the legal method of protecting the environment through the particular model will be outlined; in addition a brief critical perspective of the model will be presented, e.g. by referring to the *lex certa* principle. Then examine what must be proven in the particular model and what the practical consequences with respect to the requirements of evidence are. Finally it will be illustrated that the way the legislator chooses to provide criminal protection of the environment has a bearing on the role and task of the various parties involved, such as the Public Prosecutor, defence attorneys and the judge.

When describing the various models will use a comparative methodology. In order to make clear how environmental pollution should be proven may well vary with the model of criminalization, will distinguish between models of abstract endangerment (A), concrete endangerment (B) and serious pollution (C). Will deal separately with punishment on the basis of vague norms (D).

Indeed, most of these forms of criminalization of environmental damage can be found in some way or another in many legal systems. Therefore, examples will be given mainly from Iraqi law. The reader should, however, bear in mind that most legal systems make combined use of some of the models. Moreover, it is sometimes difficult to classify a certain provision under a specific model. The choice in that respect will often be arbitrary.

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[242]Heine, Günter. "Allemagne. Crimes against the environment."*Revue Internationale de Droit Pénal* 65 (1994) : 731-759.

[243]Meir Dan-Cohen. *Harmful thoughts: Essays on law, self, and morality*. Princeton University Press, 2009.150

2.8.1 Model A: Abstract Endangerment

The core idea behind the legal term 'abstract endangerment' is an offence of causing environmental pollution that is not usually punished directly. In the 'abstract endangerment' model, the criminal law takes the form of a simple addition to an existing scheme of administrative decisions based on the level and quality of emissions into the environment. Moreover, systems of administrative law are frequently based on administrative laws governing the conditions under which authorities can allow some measure of environmental pollution.[244] Of pivotal importance, however, is that these administrative laws lay down certain emission standards or limitation values that determine the maximum quantity of a given substance that can be released into the atmosphere. These thresholds can be stated in general legislation which is widely applicable to a range of organisations; or, they can also be stated in terms that are specific to a particular type of organisation and these are often stipulated on individual licences. Frequently these systems can be combined into a single one in which the criminal law usually applies only to enforce administrative decisions that are taken. Thus, a distinction can be made between a dependency upon general administrative rules and principles, on one hand, and the dependency upon individual decisions of administrative agencies on the other hand.[245]

Criminal protection is frequently provided in the form of an addendum at the end of an administrative statute in a provision stating that any violations of the provisions of the act or of regulations based on the act shall be punishable with a specified sanction.[246]

Sometimes there is specific mention of persons operating without a licence or failing to comply with licence conditions [247] is criminally liable under the specific provision.[248]

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[244]Antony Duff, Robin and S. E Marshall. "*'Abstract Endangerment, 'Two Harm Principles, and Two Routes to Criminalization.*" (2015) 6-12; Sindhu Virender. Environmental crimes: An analysis. *International Journal of Advanced Educational Research*. Volume 3; Issue 1; January 2018. 274-282

[245]Antony Duff, R. "Towards a modest legal moralism." *Criminal Law and Philosophy* 8, no. 1 (2014): 217-235.

[246]Al-Budairi Ismail and Ibrahim Hawra (n 4) 72-74

[247] An example the French provision criminalizes running a classified installation without a permit.

Nevertheless, it is contended by some commentators that this model is not directed towards the protection of environmental values. They argue that the only value that is protected by such provisions is the interest of the administrative authority in the proper enforcement of environmental law. However, more recently there has been a tendency to view such administrative statutes as also being directed at the protection of the environment, albeit in an indirect way.

Accordingly, it is now generally accepted that the criminal provision which imposes a penalty on a person who operates a chemical factory without a licence is also intended to be directed towards the protection of ecological values in an indirect way.[249] Indeed, to operate such a factory without a licence is frequently viewed as endangering a protected interest, namely a clean environment.[250] However, since criminal law takes effect irrespective of any specific damage or threat of harm to the environment, these provisions punish the abstract endangerment of the environment.[251] Although the goal of the criminal law provision can indirectly be the protection of the environment, this is not clear from the way these provisions are formulated and operate. Indeed, criminal law applies as soon as the administrative provision (e.g. in the form of an emission limit in a licence) has been violated, whether or not this causes harm to the environment.[252]

The first question that arises is what authority has the power to determine what the scope of the criminal liability under this model will be. Obviously, the institutions that come to mind to fulfil this task are the legislator, the administrative authorities and the judiciary. In most cases, the legislator laid down the scope of the sanction and granted authority to an administrative agency to set emission limits. In that case, the power to set the specific

[248]Philip Pettit. "Republican theory and criminal punishment. *"Utilitas* 9, no. 1 (1997): 59-79.
[249]Philip Pettit. "*Criminalization in republican theory*." (2014).
[250] An example the French Environmental Code that punishes the transmission of waste to anyone other than the operator of an approved facility and the disposal of waste without the required approval.
[251] Ibid (n 21) art 32
[252]Nuno Garoupa. *Criminal law and economics*. Edward Elgar Publishing, (2009).320

conditions of criminal liability is delegated by the legislator to the administrative agency.[253] In some cases, however, emission limits are set at the level of the legislator.[254] The greater the power of discretion of the administrative authority, the greater the power of the administrative agency to fix the conditions of criminal liability.[255]

At first sight, one would have the impression that the power of the judge to determine the scope of criminal liability is relatively limited within this model. Indeed, it seems that all the judiciary has to do is to verify whether e.g. the licensee complied with the conditions laid down in a licence. However, the power of the administrative agency to set the conditions of the licence is limited.

Also in legal practice, this task of the judiciary has great importance. If a suspect is prosecuted for an alleged violation of licence conditions it will often be argued by the defendant that the licence conditions are void, either because they did not correspond with the statutory framework or because they violated general principles guaranteeing a fair administrative procedure.

This shows that although the task of the judiciary in determining the scope of criminal liability is formally relatively limited under this model, the possibility of judicial control still allows for an active role of the Criminal Court in defining the scope of criminal liability.[256]

The first question that should be asked is whether this model fits into the general criteria for the use of the criminal law and what possibilities there are to limit the scope of criminal liability.[257]

This raises the issue as to whether or not the specific criminal provision is directed at providing protection against harm. This is rooted in theories of crime which hold that the

[253] Ibid (n 21) art 6 and art 24
[254]Douglas N Husak. *The philosophy of criminal law: selected essays*. Oxford University Press, USA, 2010.362.
[255] One could also think of general principles or rules that guide the behaviour of the licensee and are laid down by the legislator or by the executive. For reasons of simplicity, we now focus mainly on emission limits, since these most clearly show the consequences of the administrative dependency.
[256]Michael G Faure. "The revolution in environmental criminal law in Europe." *Va. Envtl. LJ* 35 (2016) : 321.
[257]Antony Duff, Robin and S. E Marshall (n 244) 6-12

criminal law should primarily be understood as a reaction to an actual harm. As already discussed, however, in this model, the actual occurrence of harm is not a prerequisite for criminal liability, since it is the abstract endangerment that can lead to criminal liability and, consequently, punishment can take place even though no actual harm occurs.

Indeed, the operation of a hazardous installation without a licence leads to criminal liability whether or not the activity gave rise to damage in that case. As far as it is not the mere operation of a plant without a licence that is criminalised, but the violation of emission limits that is punished, one could argue that this equals the punishment of harmful behaviour as these standards are set to prevent harm. However, even if this may be the case, one should note that actual harm need not be proven. The criminal law applies as soon as the standard is violated, irrespective of whether or not harm to the environment results.[258]

Another question that could be asked to determine whether an appropriate use has been made of the criminal law is whether the well-known legality principle has been respected. This refers to the fact that criminal liability must have a basis in a statutory provision. Equally important is the resulting *lex certa* principle meaning that the conditions for criminal liability should be specified in detail ex ante so that the prospective criminal knows exactly whether his behaviour will be subject to the criminal law.

In the light of the legality principle, the notion of abstract endangerment is open to some question based on the fact that frequently, the legislator only states the conditions for incurring criminal liability in broad terms which provides some latitude to the executive and its agencies to determine, in greater detail, the conditions under which criminal liability is incurred. One could argue that in that case the legislator in a Statute does not lay down the conditions for criminal liability, although most constitutional- and administrative lawyers

[258]Bernard E Harcourt. "The collapse of the harm principle." *The Journal of Criminal Law and Criminology (1973-)* 90, no. 1 (1999): 109-194.

would agree that parliament could empower the executive to provide detailed rules in administrative regulations or even in individual licences.

This leads to the problem that parliament only determines a punishment without having any idea as to what activities this criminal liability shall extend.[259]

A further criterion to determine the limit of criminal liability is the principle of guilt. Are there special requirements as far as the subjective element to the crime is concerned? In most cases, one can note that the legal system usually considers the offences falling under this model as offences of an administrative nature, not requiring specific conditions of intent. However, it seems fair to state that in most systems even reckless or negligent behaviour can lead to criminal liability for e.g. violation of licence conditions.

For example, in Iraq it is accepted that criminal liability is established the moment it is clear that no grounds of excuse or justification apply. Since there are usually no specific statutory or jurisprudential requirements of guilt related to these abstract endangerment provisions, the scope for criminal liability is potentially relatively large. However, in the Iraqi Penal Code, a distinction is made between violations which are committed negligently or intentionally. This distinction leads to a different qualification of the crime and thus to a different sanction.[260]

Another test is the well-known subsidiarity principle. Within this context, it refers to the question of whether criminal liability is needed to reach the goals set. Without going into too much detail in that respect, it could be argued that in many cases administrative sanctions such as e.g. administrative fines or injunctions would be adequate.[261]

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[259] Antony Duff, Robin and S. E Marshall (n 244) 6-12

[260] Penal Code No 111 of 1969, further amended in 2010, art 34 - *An offence is premeditated if the offender has, criminal intent*; art 35 - *An offence is not premeditated if the criminal consequence occurs as a result of a mistake on the part of the offender whether or not such mistake is due to negligence, thoughtlessness, lack of due care and attention or lack of consideration for any law, rule or regulation*.

[261] Michael G Faure (n 256) 321-350.

However, according to the economic theory of crime, in some cases a relatively large sanction might be needed to outweigh the low probability of detection of environmental crimes. Given the insolvency problem, non-monetary sanctions might also be needed if the potential magnitude of the administrative fee would outweigh the individual wealth of the polluter. For these and other reasons, deterrent, possibly non-monetary sanctions might be needed, which may justify the need for the criminal sanction.

The related proportionality principle relates to whether the criminal provision provides for a balanced relationship between the potential harm and the sanction that can be applied in case of a violation. Given the fact that abstract endangerment means that the criminal law will already intervene in case of an abstract threat to the environment, even in the absence of specific harm and given the fact that through the absence of a statutory requirement of guilt the scope of criminal liability is potentially relatively large, one would expect a relatively low sanction to apply to criminal provisions falling under this model.[262]

The problem is, however, that in many legal systems, relatively high prison sanctions apply to the violation of administrative values. Moreover, there are some examples of Iraq statutes where the violation of administrative values is punished more severely than the pollution itself. Finally it should also be noted that in some cases the violation of regulatory or licence conditions is punished in the same criminal provision, with the same criminal sanction as the pollution itself.[263]

A final criterium that is sometimes used to test the usefulness of a specific provision is an effectiveness- test. Can the criminal provision lead to the result it is aimed at? This effectiveness question relates more particularly, to whether the specific provision can

[262] 2010 , ناصر الجوراني,الجريمة البيئية والجزاءات المقررة لها في التشرع العراقي مجلة اداب ذي قار (Al - Jourani Nasser, *Environmental Crime and Sanctions in Iraqi Legislation* (2010) 190 translated from Arabic to English by the author]

[263] Ibid (n 21) art 33 and art 34; Ibid (n 260) art 240

effectively protect ecological values.[264] This is, in addition, related to the so-called specificity principle, which questions whether the criminal provision is specific enough to meet its aim and can avoid any possible undesirable side effects. Largely this question can only be answered when one looks in detail at the specific administrative rules that are enforced.

With respect to the effectiveness, I can refer to the discussion above where it was stated that these provisions do not aim at the direct protection of environmental values. Obviously, the effectiveness will, largely, also relate to the possibility of proving the violation of a certain provision in court.[265]

In this respect, I can once more refer to the discussion above. The criminal charge in this model usually relates to the fact that the defendant allegedly e.g. operated a plant without a licence, violated licence conditions or acted in contravention of other administrative rules.[266]

After having illustrated that only the violation of the administrative rule needs to be proven, the question now arises how this evidence is collected. Most environmental statutes now provide detailed procedures that must be followed when samples of e.g. solid waste, air emissions are taken.

One could state that this model makes it relatively easy for the Public Prosecutor, who can rely heavily on expert opinions gathered during the preliminary procedure by an expert and/or the administrative agency.[267]

The substantial disadvantage of this model, how unavoidably necessary it may be in practice, is that it does not focus on the direct protection of the environment and therefore

[264] Susan F. Mandiberg, and Faure Michael G. "A graduated punishment approach to environmental crimes: Beyond vindication of administrative authority in the United States and Europe." *Colum. J. Envtl. L.* 34 (2009): 447.

[265] Nevertheless, one should be careful with this criticism. For instance, the operation of a nuclear power plant without a licence is criminalised since it abstractly endangers many (environmental and human) values. Nevertheless, it is hard to doubt the usefulness of such a provision; one cannot argue that this provision is ineffective, simply because it does not react to actual harm.

[266] An example the French statute providing that he who hinders the exercise of functions by persons charged with inspection duties or with the monitoring of classified installations will be punished.

[267] Herbert Hart, Adolphus Lionel, and Green Leslie. *The concept of law*. Oxford University Press, (2012).128.

seriously limits the task of the judge in providing this protection. This model makes the judge a slave of the administrative authority and its experts. This does, however, not necessarily mean that this model should be avoided. The control in this model is provided for in a procedural way (e.g. by allowing the countercheck).[268]

2.8.2 Model B: Concrete Endangerment

Concrete endangerment specifies a situation where a violation of environmental values is considered to have occurred in virtue of a concrete threat being posed to the environment and this is a prerequisite for criminal liability.

In this case, unlike in model A, a mere abstract danger that e.g. the illegal operation of a plant might cause danger to the environment is in itself too abstract and therefore insufficient for criminal liability. In this model usually at least the occurrence of an emission is required. This is an existential threat which can lead to concrete danger to the environment although it is not required that actual harm be proven as well. Usually the threat of harm is sufficient.[269]

However, it must be admitted that being found guilty of causing concrete danger to the environment usually only carries a criminal liability provided a second condition is met, that is that this emission takes place illegally.[270] In model A, all that was needed to be shown was that the act violated administrative rules. In the case of model B, the emission or pollution that can pose an existential threat needs to be proven. However, as long as the

[268]Michael G Faure (n 256) 321-350.
[269]Douglas Husak. *Over criminalization: The limits of the criminal law*. Oxford University Press, (2008).71
[270] An example of this incremental approach to introducing models of environmental crimes that are more independent of administrative law can be found for example in a convention adopted by the Council of Europe on November 4, 1998, on the protection of the environment through criminal law (http://www.coe.fr/eng/legaltxt/172ehtm). Even though this convention has not yet been enshrined into many national laws, it is of interest for the current study because it employs subdivisions between various types of environmental crimes, as we suggest. Moreover, according to article 2.1 (a), an emission that has the serious consequence of creating death, serious injury, or a significant risk of death or serious injury leads to criminal liability irrespective of a violation of administrative obligations; Susan F. Mandiberg, and Faure Michael G (n 264) 449.

administrative rules are followed, usually no criminal liability follows since the act is not considered to be illegal. This is the principal point of difference between these two models and model C, which is discussed below, in which criminal liability can occur even if administrative requirements were formally met.

Indeed, even if no administrative regulatory framework has been violated, criminal liability can apply under B since the emission it can still be illegal, whereas in that case under a traditional model of abstract endangerment no criminal liability would arise.[271]

With respect to the provisions, falling under this model it is generally agreed that their aim is the protection of so-called "*ecological values*".

Again, the question should be asked which authority has the power to determine the scope of criminal liability. In this case, again the task of the legislator is obviously crucial in formulating the conditions of criminal liability. However, one should bear in mind that contrary to provisions falling under model A, the provisions under model B usually consist of two separate requirements. First, there is a requirement that either an emission took place or that a certain consequence resulted. A second condition for criminal liability under this model is that the act has to be illegal. Obviously, the authorities that have to decide upon how both aspects of the provisions will differ. , Largely, decide by the legislator or by the executive through generally binding rules or through licence conditions the question whether or not the pollution or emission was illegal will.[272]

Although one could take issue with the model's limited view of the notion of illegality it serves to illustrate the critical role of the administrative authorities in determining the scope of criminal liability within this model. However, just as was the case in model A, the judge will keep his power to exercise judicial control.

[271] Michael G Faure (n 256) 321-350.
[272] Al - Jourani Nasser (n 262) 180.

This model also raises the question whether such offences meet the general criteria for the use of the criminal law and what possibilities exist to limit the scope of criminal liability.

A question I addressed in that respect is whether the criminal provision aims at providing protection against harm. This is certainly more the case than in model A where abstract endangerment could already give rise to criminal liability. In this case an emission is needed which has the potential to cause harm. Nevertheless, in this case there is a clear link between the criminal liability and the threat of harm.

It is also interesting to examine whether the provisions falling under this model correspond to the legality- and its resulting *lex certa* principle. As far as the legality principle is concerned, the model of concrete endangerment has the advantage that the formal legislator determines the conditions for criminal liability.

As far as the guilt criterion is concerned it should be mentioned that the provisions in this model usually require some element of subjectivity.

For example in the Iraq Penal Code Articles 491 and 497 only apply if the emission took place knowingly, meaning that the defendant knew or should have known that the emission could endanger public health.

In the Law on the Protection and Improvement of the Environment No. 27 of 2009, however, there is no special statutory requirement of intent. The same conditions of guilt apply to provisions falling under the abstract endangerment and as to those under the concrete endangerment model. The latter seems to be true in the Iraq Penal Code as well. Criminal liability under Article 497 of the Iraq Penal Code is indeed possible even if the defendant only acted negligently.

With respect to the subsidiarity principle, I can again refer to the discussion under model A.

It is unlikely that, if concrete endangerment to the environment is caused, an inadequate degree of protection could be provided without the use of criminal law.[273]

In light of the proportionality principle, one would expect more severe sanctions in this case.

The Law on the Protection and Improvement of the Environment No. 27 of 2009 punishes more severely direct environmental pollution under Articles 32 and 34 than the violations of environmental statutes brought under the Penal Code.[274]

In that respect, it can be mentioned that a model of concrete endangerment is obviously more effective in protecting environmental interests than a model of abstract endangerment that merely relies on the violation of administrative rules.

The criminal charge under this model usually consists of two elements. First, it usually refers to an emission or an act of pollution, which the defendant has allegedly caused. Second, reference is also made to the fact that this act has been done in an illegal way. Again, I have to underline the statutory and jurisprudential duty to specify the facts that constitute this violation.

At first sight, it seems that no specific problems of proof arise under this model. This might be true for the second part of the charge, being the fact that the emission/pollution took place illegally. However, even there, in practice many problems may arise in relation to the justificative effect of the licence e.g. if the defendant met the conditions of his licence but the Public Prosecutor argues that he has nevertheless emitted in an illegal way.

There is a major difference between the methods of proof under the abstract endangerment model (A) and under model (B). In the abstract endangerment model, a charge is usually brought for having violated an emission limit set in a licence. In that case, the judge will rely largely on information provided by a technical expert or an administrative agency.

[273]Michael G Faure (n 256) 321-350.
[274] Ibid (n 21) art 33 and art 34; Ibid (n 260) art 491 and 497.

When looking at the roles of the various participants in a criminal trial, again the Public Prosecutor can rely on prior evidence gathered during the preliminary procedure by an expert and/or the administrative agency. However, in this case the question of evidence will not be cantered on the question whether or not a certain licence condition was violated. Since the provisions falling under this model aim at protecting against concrete endangerment, the Public Prosecutor will have to show that the act or omission of the defendant constituted concrete endangerment as described in the statutory provision. Therefore, within this model there is also a more active role for the judge.

The premeditated or wilful causing of damage to the environment is defined as impairments resulting from acts committed intentionally and which have a pernicious effect on the environment, any of its elements, and/or living organisms and their habitats. This is dealt with in Iraqi civil law by the provisions of articles 202 and 204, which obligates the perpetrator of the damage to pay compensation.

Harmful effects in terms of the natural environment are defined in Law No. 27 of 2009 on the Protection and Improvement of the Environment which also stipulates certain actions which are in breach of this law. It also lays down the fines and penalties to be imposed on violators.

2.8.3 Model C: Serious Environmental Pollution

The concept of serious pollution indicates which lies at the heart of this model aims at providing protection against cases of very serious pollution. The principal thrust of this model is that, unlike in Models A and B, it does not require delineating the relationship between criminal law and already existing administrative provisions. Significant wilful acts damaging to the environment are punishable in this model regardless of whether these were specifically

stated in the licensing terms, thus lifting the veil formerly provided by recourse to administrative provisions.

It could be useful to compare penalties for breaches of environmental laws with those meted out for the commission of acts causing bodily harm. In most penal systems, negligent or intentional injury caused to others is punishable regardless of whether such injuries resulted from environmental damage or otherwise. Thus, even though some provisions fall under the heading of serious environmental pollution, it is clear that these laws are still primarily focused on the protection of human interests.[275]

Obviously, the legislator, wishing to treat very serious cases of pollution in a separate way and notwithstanding the issue of an administrative licence, will have to decide what the crucial criterion is to treat some cases of pollution as very serious ones. Merely punishing 'serious' pollution would have been too vague and would have been contrary to the *lex certa* principle. Therefore, the option chosen in interpreting 'serious' pollution was to focus on emissions that would present a concrete endangerment to human life or health.[276]

Probably the most important task in limiting criminal liability in these provisions lies with the legislator. Indeed the legislator has to decide in the first place under what specific conditions criminal liability can be extended to situations when the licence was adhered to.[277] In this case, the administrative authorities do not play a role at all, since crimes falling under this model are punishable even if the conditions of the licence are met. Since the notions used to define the seriousness of pollution may sometimes be rather vague, again there is an important task for the judge in deciding whether it is acceptable in the particular case to accept that criminal liability exists despite the fact that the defendant followed the conditions of an administrative licence.

[275]Michael G Faure (n 256) 321-350.
[276]Anthony Duff, R. "A criminal law for citizens." *Theoretical criminology* 14, no. 3 (2010) 293-309.
[277]Anthony Duff, R. "Theories of criminal law." *Stanford Encyclopaedia of Philosophy* (2011) 63.

In the provisions falling under this model, harm is a prerequisite for criminal liability. Harm means not only an emission, but also the endangerment of human health or life. Since this provision really aims to criminalize the endangerment to human health or life, the use of the criminal law seems justified.[278]

The conditions for criminal liability are certainly fixed by the legislator. In addition, in this model there is no dependency on administrative law whatsoever. Illegality of the emission is no longer a prerequisite for the application of provisions falling under this model. The provisions falling under this model seem therefore to correspond with the legality principle in the sense that the legislator has defined the conditions under which criminal liability will arise.

The question one could obviously ask is whether this increased criminal liability complies with the *lex certa* principle. This is, as was mentioned above, a classic problem if one wishes to find a way to punish more serious cases of environmental pollution with increased sanctions.

The way this has apparently been solved is by referring to the concrete endangerment of human health or life.

Obviously, on the subjective side of the crime specific conditions will have to be met. Indeed, in this case the criminal law applies even though the conditions of an administrative licence were met.

As the defendant could otherwise escape criminal liability by arguing that, he did not know of harmful effects of the substances he was emitting. The crucial question is indeed, whether the defendant, although he did not know, should have known of these effects. Although the judge might be cautious in too broad an interpretation of this notion, the omission of knowing the harmful effects of these substances justifies criminal liability.

[278] ذنون المحمدي، نحو نطاق قانوني لتعويض الاضرار الواقعة على حياة الانسان وسلامة جسده، اطروحة دكتوراه، كلية الحقوق, 2007 , ص 1[Al-Mohammadi Zanoun, Towards a Legal Scope to Compensate Damages to Human Life and Body Safety, *Doktor Rahe, Faculty of Law*, 2007, p. 1 translated from Arabic to English by the author].

In that respect, I can be short. There do not seem to be other legal instruments that could provide equally effective protection in case of concrete endangerment of human health or life as the criminal law. It seems justified that these crimes should be punished with more severe sanctions than the emissions that do not create such endangerment.[279]

Again, the question should be asked whether the provisions falling under this model achieve their objective. The provisions are certainly effective in the sense that they apply even if the harmful emission was covered by a licence. The effectiveness could, however, be critized from the point of view of the protection of ecological values. One could argue that since the increased sanction and the reduction in the administrative dependency of the criminal law only apply if human health or life is concretely endangered, this shows once more the anthropocentric (instead of ecological) focus of the environmental criminal law.[280]

The criminal charge will therefore usually contain at least the fact that the defendant allegedly caused an emission or pollution. Secondly, reference will be made to the fact that this emission endangered human health or life.

The methods that will be used to prove the violation of provisions falling under this model will be largely similar to the ones used to prove model B-crimes. Indeed, first an emission will have to be proven. Information on that point can be provided by e.g. a technical expert or an administrative agency.

In order to show endangerment he might rely more heavily on information provided by experts on the dangerous character of certain substances.

Obviously, in this model, there is a lot of room for active participation of the judge. He will have an active role in, on the one hand, providing adequate protection against these serious cases of environmental pollution endangering human health.

[279]Michael G Faure (n 256) 321-350.
[280] Susan F. Mandiberg, and Faure Michael G (n 264) 447.

2.8.4 Model D: Vague Statutes

In recent years have seen that the practice of using vague norms which can be enforced in civil and administrative law has also been used in environmental criminal law. The vagueness of these norms results from the use of language which is inherently vague. The vagueness is further enhanced by the legal context itself, which requires that the legislative rules be general in nature.[281]

The reason which is often given by the legislative authorities and commentators for using vague norms is that they can serve as a safety net when specific norms in legislation are not fully effective. Furthermore, it has been claimed that the necessity of using such vague norms can give a signal to the legislative body, that they must regulate these cases in the future with more specific legislation. There are different ways in which vague norms can play a role in environmental criminal law. There are vague norms in Statutes and in executive regulations. Furthermore vague norms can also be used in licences.

In this model, vague norms in case of a duty of care are made use of, which reflect the main principle or principles of the legislation concerned. Thus, in environmental law, the aspects of the environment with which the law is concerned, are directly protected by the vague norm. This does, however, not mean that every violation of this vague norm can or should be enforced directly through the criminal law.[282]

In contrast with model A, criminal responsibility is now not largely determined by the administrative authorities.[283] With this kind of penalization, the Public Prosecutor has his own responsibility, and he can act independently when the norms are violated. Whether the damage does or does not violate the norm will be determined by the Criminal Court. In this

[281]Michael G Faure (n 256) 321-350.
[282]Antony Duff, R."Towards a theory of criminal law?" *InAristotelian Society Supplementary Volume*, vol. 84, no. 1, pp. 1-28. Oxford, UK: Oxford University Press, 2010.
[283] Antony Duff, R and others. *Criminalization: the political morality of the criminal law*. *Criminalization*, 2014.

model, it is up to him to determine the borderline between criminal and non-criminal actions. He can, therefore, do this only on a case-by-case basis, and thus ex post.

The Criminal Court thus has a large degree of discretion. Judges are duty-bound to apply the relevant legal rules in every case. In interpreting the licences criminal judges are, as have seen, tied to the administrative authorities.

This model seems to be suitable for criminally charging a party with behaviour harmful to the environment. In many cases the vague norm will directly serve the interests of the environment.[284]

The legality principle refers, as has been said before, to the fact that criminal liability must have a basis in a statutory provision. Equally important is the resulting *lex certa* principle meaning that the conditions for criminal liability should be specified in detail ex ante so that the suspect knows exactly whether or not his behaviour will be subject to the criminal law. In relation to this principle vague norms can pose problems. This will be the case when it is not clear to a citizen if his actions may be in violation of a criminal law.

One can then wonder if the legislator does not know the exact content of the criminal provision, how can expect the citizen to know.

Therefore, these vague notions seem to conflict with the *lex certa* principle.

In many vague norms which can be criminally enforced there is no explicit guilt requirement. This also applies to the duties of care laid down in specific environmental law.

It may be asked whether the use of vague norms is being limited to those cases where no alternative exists. It seems that vague norms in environmental law are used to help civil servants to detect criminal offences in cases where more specific regulations could also have

[284]Antony Duff, R. "The Incompleteness of 'Punishment as Fair Play': A Response to Dagger." *Res Publica* 14, no. 4 (2008): 277.

been used (i.e. regulations from models A, B or C). These regulations, however, put greater demands on the legislative knowledge and expertise of civil servants.[285]

As mentioned before, in this model there does not have to be damage to the environment to be in violation of the criminally enforceable vague norm. In these cases there is not a fair relationship between the damage caused by the act and the sanction applicable.

As indicated above there is a problem with the use of vague norms in relation to the legality principle. Partly because the norms are not very specific, it will not be very easy for citizens to know whether their behaviour is criminally punishable.

In general possible harmful behaviour towards aspects of the environment need to be proven. For this purpose all legal forms of evidence can be produced. On the basis of the information submitted the judge will decide whether there has been a violation of the duty of care.[286]

By choosing to make use of vague norms the legislator relinquishes control. The criminal law in this model is more independent from administrative authorities than in the models discussed above. Therefore in practice this model will often be used by the Public Prosecutor.

In this model the judge has great freedom in the execution of his role. In case of a possible violation of a duty of care he will, depending on the evidence submitted, decide whether or not there has been (potentially) harmful behaviour against (aspects of) the environment. For this ruling he can make use of information from experts.

The crucial question in this section, how environmental pollution is proven, will inevitably depend upon the statutory protection that has been chosen.

Inevitably a division between four models can never be so exact that every provision can be categorized under one of the models.

[285]Michael G Faure (n 256) 321-350.
[286]Ibid.

Within this section shall looking at these various models from a comparative perspective focussing, on the one hand, on the question of which models are probably most effective in protecting ecological values and on the other hand, in which models judicial protection as required by the rule of law is best guaranteed.[287]

This overview shows the strengths and weaknesses of the various models used as far as their capacity to protect the environment is concerned. Indeed, as far as the protected value is concerned, provisions falling under model A have the disadvantage that they apply even if no ecological harm exists; moreover they cannot provide adequate protection if there is no violation of existing administrative rules. This is because there is too strong a relationship with administrative law and too much dependency on administrative decisions. The effectiveness is therefore relatively low, particularly as the judge seems to rely on the technical experts within this model.

Model B provides for better protection since it aims more directly at protecting the environment and is not dependent upon a violation of existing administrative decisions. However, meeting the conditions of an administrative licence will have justificative effects. The effectiveness is greater than in A, but this justificative effect remains a weakness. In model B the judge has more power to provide autonomous protection of the environment.

Model C seems highly effective in the sense that the criminal law applies even if the conditions of a licence were actually met. However, the protection of ecological values under this model is only realised in so far as human health or life is endangered. Therefore this model has, in current its current provisions, an anthropocentric accent which neglects ecological harm. Again, under this model the judge has relatively wide powers to determine the limits.

[287]Andrew Ashworth, and Horder Jeremy. *Principles of criminal law*. Oxford University Press, 2013.81-90

Model D could protect ecological values, but the concepts used are so vague that one cannot recognize the protected value in many cases. A licence still seems to have a justificative effect and the judge has powers to limit the criminal liability under vague notions.

As far as the question is concerned whether the criminal provisions criminalize harm, this is certainly the case for C, which aims at concrete endangerment of human health and for B, aiming at concrete endangerment of the environment. Model A has the disadvantage that the criminal law applies, even if there is no specific threat of harm. The same is the case in model D where vague concepts are used. When moving from A to C one can note that the provisions indeed focus on more serious cases of harm. In addition, the requirements of guilt increases. This should, according to the proportionality principle, also lead to an increased sanction. As far as the *lex certa* principle is concerned there is an interesting reverse relationship when moving from models A to C. This obviously has to do with the difficulty of defining environmental pollution. The best protection is probably provided through model C, focussing on concrete endangerment of human health or life and applicable even if the conditions of a licence were followed. However, the disadvantage is that the notions used in provisions falling under model C are sometimes rather vague and can conflict with the *lex certa* principle. Provisions falling under model A on the other hand are usually extremely precise, but do not provide adequate protection of the environment, since they merely focus on abstract endangerment and are too dependent upon the violation of existing administrative rules. Here one will obviously have to look for a compromise between the searches for specific norms informing citizens exactly ex ante on the legality of proposed behaviour and on the other hand the usefulness of vague norms that might better be able to protect the environment. This conflict is certainly not new for environmental criminal law.

Not surprisingly one can indeed note that the question of evidence very much depends on the model of criminalization used by the Public Prosecutor. Obviously the task of the Public Prosecutor might, to a large extent, also depend upon the scope of the provision used. If e.g. the statutory provision requires that actual pollution is caused and not just concrete endangerment this burden of proof might be so high that such evidence could never be brought. Therefore shifts, especially towards model D, might be explained on evidential grounds as well although one can find little reference to problems of evidence in comminutions as justification for moving towards different systems of criminalization. However, the practical application of the provisions discussed might also give some indication of the "*probative value*" of the provisions.

From a policy perspective, an effective environmental criminal law should be eclectic drawing on the strengths of each of these models. Despite the importance of the approach to the penalisation of abstract endangerment which is based merely on infringements of administrative obligations, there is a weakness in that they apply regardless of whether ecological harm or danger exists or not. Furthermore, they can only provide adequate protection if there is an actual violation of existing administrative rules, because of its excessive reliance on administrative law and its dependency on administrative decisions.[288] Here, the provisions are simply directed to punishing breaches of administrative obligations (which remain necessary). However, there is a need for this approach to be combined with provisions based on concrete endangerment of the environment. This can be achieved by punishing unlawful emissions. The conditions of an administrative license would still have an effect and force in law. However, the protection granted to the environment by the judge already supersedes this and is more autonomous, since it is not limited to the penalisation of breaches of administrative obligations. Finally, the system needs to be complemented with an

[288] Michael Faure, and Visser Marjolein. "How to Punish Environmental Pollution-Some Reflections on Various Models of Criminalization of Environmental Harm." *Eur. J. Crime Crim. L. & Crim. Just* 3 (1995): 316-68

additional independent crime applicable to serious pollution where a concrete danger to human life or health exists. However, with such an additional law, the interdependence of environmental criminal law and administrative law is entirely superseded.[289]

[289] Michael Faure, and Visser Marjolein (n 288) 316-68

2.9. Conclusion

This chapter set out to assess the impact of air pollution and its sources on human health and the environment, as well as the climate. It has demonstrated that clean air is necessary for human health and wellbeing. Consequently, air pollution can have economic outcomes because of the cost of medical treatment for people affected by pollution, the loss of working days when affected people are off work, and the loss of people who are critically ill which leads to the lack of labour.

Gaseous emissions which occur in Iraq, are mainly derived from anthropogenic sources which are either stationary or mobile. Stationary sources comprise large industrial complexes such as petrochemical plants, oil refineries and power stations in addition to support systems such as workshops, backhouses, restaurants, electrical generators, and incinerators. These sources are responsible for emitting thousands of metric tons of gases into the atmosphere every day. In addition, there is the very significant contribution of cars and other vehicles which have become the predominant mobile source of gaseous emissions, because of significant increases in traffic.

It is worth mentioning that environmental principles as such have no legal force because there is no agreement on the definition that should be given to each of them. However, these principles may guide environmental policies toward achieving its goals.

The most important principles are the concept of sustainable development; the polluter pays principle and the precautionary principle, which was the content of the above debate.

This chapter has tried to address the question how environmental pollution should be proven. By focussing on material criminal law and asking ourselves what the consequences are of various existing models of environmental criminal law. Was interested in the consequences both with respect to the ability of the models to provide adequate protection of

the environment and in their ability to use the criminal law in a way that respects the rule of law.

In this chapter have looked at some of the implications of the various models by comparing them in several overviews. This shows that in fact, no ideal model exists.

Therefore it seems necessary to find a compromise between the wish to provide adequate protection of ecological values on the one hand and on the other hand the need to respect the *lex certa* principle. Moreover, it seems warranted that for very serious cases of environmental pollution the criminal law intervenes even if the conditions of a licence are met. But then again the question will arise how one can define cases of serious environmental pollution in a way that respects the *lex certa* principle. The way this is done today is usually by reference to concrete endangerment of human health which has the disadvantage that it takes a too anthropocentric focus on environmental protection, but on the other hand might be unavoidable as well.

We also discussed the role of the judge in the various models. Model A certainly has the disadvantage that the judge is very much dependent upon prior information of the administrative agency and other experts. In models B and C there is more room for judicial discretion. This could also lead to increased effectiveness as long as the judges use this discretion to provide optimal protection of ecological values, but at the same time asking themselves whether this case still meets the statutory requirements of the legislator.

In that respect one can be quite critical of the use of concepts which are too vague either in licences or in criminally enforced duties of care. The increased use of these vague notions seems to be an example of the use of the criminal law to deal effectively with a problem in a time when environmental pollution seems to be one of the major problems society has to cope with.

CHAPTER THREE
REVIEW AND EVALUATION OF ENVIRONMENTAL LAWS AND RELATED PROVISIONS OF AIR POLLUTION IN IRAQ

3.1. Introduction

The purpose of this chapter is to review and analyse the existing provisions for offenses involving air pollution in environmental and non-environmental legislation and specifically focusing on the criminal provisions, compensation for damages and penalties governing air pollution in Iraq, as well as the position as regards liability for environmental offences of air pollution in the various legislations. In addition, the duties and responsibilities of environmental authorities to enforce and implement the environmental laws of air pollution are evaluated.

It should be noted that the materials discussed in this chapter include some laws which are now outdated and no longer valid. In comparing these laws to the current legislation, the focus will be on those elements of the original laws that have been revoked or amended by the Iraqi legislator to better align with current realities.

To ensure consistency in the analysis, the relevant regimes in both Chapters 2 and 3 are assessed using the following set of themes: the penalty's nature and extent, and the circumstances which must exist before it can be applied; institutional arrangements for its use; the decision-making process - including the burden of proof and the factors for consideration in calculating the penalty; whether the penalty has an upper limit; the destination of the penalty funds; appeal and review procedures; the penalty's impact on criminal offences; and the implications of penalty non-payment.

The various regional and international conventions that were ratified by Iraq will then be reviewed, together with the Iraqi Constitution.

As shown in the previous chapter, there is an evident link between air pollution, poor health conditions and poor air quality of Iraq.[290]

In order to address this issue, it is necessary first to decide the goal for environmental protection from air pollution. This will determine the aims behind the environmental legislation, which in turn informs the purposes of enforcing that legislation. If, for example, the goal of the environmental legislation is to prohibit completely all pollution, then any act of pollution should be prohibited, from breathing (which releases carbon dioxide into the atmosphere) to the emission of toxic chemicals into the air. It is more likely, however, that environmental legislation is aimed at drawing a boundary between types of pollution that are acceptable (breathing, for example) and those that are not.

This chapter draws on data from the Iraqi Ministry of Health and Environment, the World Health Organization (WHO), other agencies of the United Nations system and the Government of Iraq, Iraqi Local Governance Law library, the gateway to environmental law (ECOLEX), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and the World Bank (WB). Articles, reports and other publications have also been used, as have articles about air pollution from the Iraqi Governance Law Library, Iraqi Parliament and the Iraqi Official Gazette.

[290] Nature Iraq (n 6) 5

3.2. Environmental Legal Framework with Respect to Air Pollution in Iraq

As we have seen, the environmental awareness which had been spreading all the over the world since the 1970s reached Iraq earlier than its counterparts in the region of the Middle East. Even so, environmental legislations in Iraq is still in its infancy in comparison with developed and industrialised countries which have more comprehensive and solid environmental regulatory and liability regimes such as the UK, the USA and Germany.

The relatively unsophisticated approach that has been adopted in Iraq to handle environmental degradation has some justification in the fact that Iraq is a developing country facing economic challenges that has yet to fully develop further its industrial sector, and bearing in mind that strengthening its environmental regime to enable injured parties to claim sufficient compensation for damage caused could deter potentially environmentally harmful investments.[291] These realities have put environmental protection far below first place on the Iraqi political agenda. Decision-makers in Iraq have many priorities for action at both the national and international level; these priorities affect the way in which Iraq deals with environmental initiatives.[292]

The Iraqi legal framework for environmental protection from air pollution has many dimensions, including the constitutional, the criminal, the administrative and the civil. Below is an overview for the Iraqi environmental laws package.

The various laws which presently govern air pollution in Iraq shall be addressed in-depth below, such as the Constitution of Iraq 2005, as this is the principal law of Iraq which is superior to all other laws. Although there are older statutes than the 2005 Constitution

[291] Salim Mudhafar (n 56) 87

[292] World Bank Group, 'The World Bank in Iraq: Overview' (*The World Bank*, 1 April 2017) 1-3 <www.worldbank.org/en/country/iraq/overview> accessed 1 February 2018; Cordesman Anthony H, Loi Charles and Mausner Adam, '*Iraq's Coming National Challenges: Transition Amid Uncertainty*' (CSIS 2011) <https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/110105_Iraq_1-Introduction.pdf> accessed 1 February 2018

which regulate the environment, the power to make such laws is derived from the Constitution. In accordance with the Constitution, various laws have been enacted over the years to deal with issues regarding the environment and air quality control.

Iraq's legislative framework is hierarchical, with higher forms of legislations having primacy over lower levels. This applies to all legislations including that passed by the previous regime prior to 2003, provided that it does not contradict the 2005 Constitution. A number of laws have been at least partially invalidated by this constitutional provision. The normal Iraqi process is for the executive functions of each institution to be set out in superior laws, while the authorities themselves issue rules governing the detail of implementation.[293]

The legislative hierarchy in Iraq can be summarised as follows:

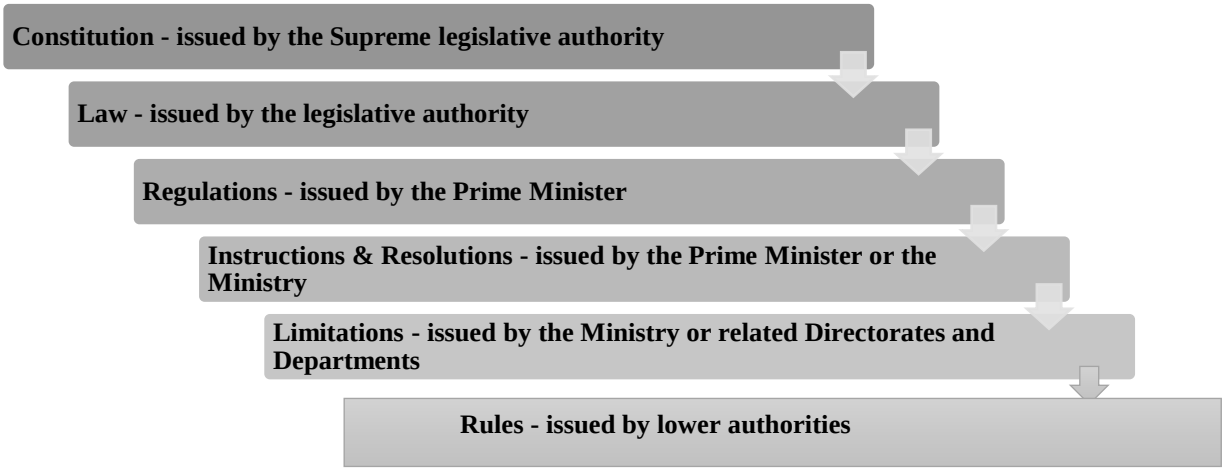

Figure 2: The legislative hierarchy in Iraq[294]

[293] United Nations Environment Programme, *United Nations Development Programme and the World Health Organization*. (2011).64.
[294] Ibid

Table 1: The Iraqi Constitution[295]

Title	No. and year of legislation	Type legislation (law regulation instructions)	The current situation	Issuing authority	Relevant provisions and Articles
The Iraqi Constitution	2005	Constitution	Valid	Iraq - Federal	33-paras 1 & 2, 114-para 3

Table 2: The Environmental Legislations of Air Pollution[296]

Title	No. and year of legislation	Type legislation (law regulation instructions)	The current situation	Issuing authority	Relevant provisions and Articles
The Law on the Protection and Improvement of the Environment	No. 27 for the year 2009	Law	Valid	Iraq - Federal	1-2, 15, 21, 32-34,37
Protection of Ambient Air Quality	No. 4 for the year 2012	Regulation	Valid	Iraq - Federal	2, 11, 12, 17, 19
National Emission Standards	No. 3 of 2012	Instruction	Valid	Iraq - Federal	2, 6, 17

Table 3: Related Provisions of Air pollution at Non-Environmental Legislations [297]

Title	No. and year of legislation	Type legislation (law regulation instructions)	The current situation	Issuing authority	Relevant provisions and Articles
Public Health Law	No. 89 of 1981 as amended	Law	Valid	Iraq - Federal	3, 96, 100
The Oil and Gas Law	2007	Law	Valid	Iraq - Federal	14, 31, 42
The Oil and Gas Law	2011	Law	Valid	Iraq - Federal	1, 47-48
The Civil Law	No. 40 of 1951	Law	Valid	Iraq - Federal	202,204,206,207,232
The Penal Code	No. 111 of 1969, further amended in 2010	Law	Valid	Iraq - Federal	491, 497

[295] Salim Mudhafar (n 56) 38-47
[296] Ibid
[297] Ibid

There are numerous provisions for offenses involving air pollution in Iraqi environmental and non-environmental legislation.

Based on the above tables, will describe the current legislations in the following order:

3.2.1. Iraqi Constitution of 2005

Environmental rights of citizens, and/or the obligations of the government to protect the environment and the natural resources that belong to the state, are now enshrined in a number of national constitutions. The number of constitutions that include the right to a clean, healthy environment now exceeds 100; the same constitutions impose on the state an obligation not to permit environmental harm. There are, however, issues that arise from embedding environmental rights in the constitution; these issues include limits on the ability of a court to exercise judicial authority (justifiability), how far such rights extend and what exactly they are a right to, and what remedies are available for breach of a constitutional right.[298] Furthermore, the role that the constitutional right to a healthy environment can play alongside statutory, common law, and regulatory protection is as yet unclear.[299]

Iraq recognises that the right to a healthy environment is enforceable, and that the people of Iraq have a fundamental right to live in a balanced, healthy environment.

The Iraqi Constitution of 2005 specifically gave assurance for the protection of the environment under Article 33(1), which stipulates that

> Everyone has the right to live in a safe environment.

In addition, Article 33(2) states that

[298] Colombia and Chile also recognise the enforceability of the right to environment. In *Fundepublico v Mayor of Bugalagrande y otros*, the Colombian court stated: 'It should be recognized that a healthy environment is a *sina qua non* condition for life itself and that no right could be exercised in a deeply altered environment'. Juzgado Primero superior, Interlocutorio # 032, Tulua, 19 December 1991

[299] Dinah Shelton and Alexandre Charles Kiss, *Judicial Handbook on Environmental Law* (UNEP/Earthprint 2005) 7

The state guarantees that it will protect the environment and bio-diversity and preserve it.[300]

However, Article 114(3) of the Iraqi Constitution 2005 outlines ensuring the following:

> The protection of the environment from pollution and maintaining cooperation with the regions and governorates that are not organised in a region.[301]

Article 33 includes the protection of the environment. However, this duty may be derived from the general duty on the government to ensure a satisfactory life to all citizens. It is the view of author that this Constitutional Article cannot be used to support the claim of an Iraqi citizen who wishes to sue a governmental agency for its failure to protect the environment, or to restore the damaged environment and demand compensation when he suffers an injury as a result of environmental damage.

On the other hand, the Iraqi Constitution does not include the right of citizens to have an active role in promoting environmental protection in general nor does it provide for public participation in access to justice regarding environmental rights.[302] Active public participation, one of the important principles that received due attention through Principle 10 of the Rio Declaration.

This was affirmed in principle 10 of as follows:[303]

> Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including

[300]Iraqi Constitution of 2005 published in the Official Gazette issue no 4012 of 28 May 2005. An English Language translation of the 2005 Constitution is available at <http://investpromo.gov.iq/policies-and-laws/>.
[301]Iraqi Constitution of 2005, art 114(3)
[302] Certain statutory schemes permit members of the public to participate in a judicial review (Ontario Environmental Bill of Rights, Sections 38 & 41) or allow for appeals or reviews of a decision regarding permits on behalf of an individual or individuals who feel aggrieved by the decision of the director (Environmental Management Act, Section 100). There is an example based on an aboriginal community which mounted a challenge against the decision to grant a mining company permission to mine in the area and the basis of the challenge was that there was a duty to consult the local community and the fact that the permit failed make it obligatory that no part of the operation would be injurious to human health or to the natural environment (Decision No. 2006-EMA-006(a) of the BC Environmental Appeal Board) ; Eileen Skinnider (n 175) 68
[303] Declaration of the UN Conference on Environment and Development, Rio de Janeiro, 3–14 June 1992 and UNGA Resolution 47/190 (1992)

information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes.

States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.[304]

Moreover, the 1994 Draft Declaration of Principles on Human Rights and the Environment provides that:

All persons have the right to active, free, and meaningful participation in planning and decision-making activities and processes that may have an impact on the environment and development. This includes the right to a prior assessment of the environmental, developmental and human rights consequences of proposed actions.[305]

All persons have the right to associate freely and peacefully with others for purposes of protecting the environment or the rights of persons affected by environmental harm.[306]

All persons have the right to effective remedies and redress in administrative or judicial proceedings for environmental harm or the threat of such harm.[307]

A particularly effective approach to propagate information is through widening participation by inviting communities and NGOs. When the public is involved in the process through consultation, they are more likely to have respect for environmental laws. Some NGOs are pressure groups which can influence government policymaking decisions.[308] This

[304] There is no equivalent principle to this in Stockholm Declaration 1972.
[305] Draft Declaration of Principles on Human Rights and the Environment 1994 art 18.
[306] Ibid, art 19
[307] Ibid, art 20
[308] According to the French environmental law "Any association approved under Article L 141-1 may, if it has been appointed by at least two of the persons concerned, may act for reparation before any tribunal on behalf of these persons. The appointment cannot be solicited. It must be given in writing by each person concerned. Any person who has given his or her agreement for an action to be brought before a criminal court is considered, in this case, as exercising the rights recognised as those of the civil party, in accordance with the Code of Criminal Procedure. However, the notifications are addressed to the association. The association which brings a legal action in accordance with the provisions of the previous paragraphs may claim for damages before the investigating judge, or the tribunal having jurisdiction over the headquarters of the enterprise implicated or, failing this, over the place of the first infringement". There is provision for associations dedicated to protecting

can include the coercing the government to be more transparent in disclosing relevant information to the public regarding levels of compliance with the laws. NGOs can also arouse public interest in environmental issues and can inspire communities to participate in the democratic process by holding elected politicians to account. Obviously, social media has become yet another means for holding the government to account. [309]

A good example is Article 15 of the Jordanian Environmental Protection Law which mandates the formation of an advisory committee where the NGOs can be members. In addition, Article 23 states:

> The Ministry, upon the approval of the Council of Ministers, may delegate any of it is duties and powers to any ministries, corporation or volunteer organizations concerned with the field of environmental protection, provided that such delegation shall be specific and in writing.[310]

On the contrary, the Iraqi Constitution does not include the right of NGOs to have an active role in promoting environmental protection in general nor does it provide for public participation[311] in access to justice regarding environmental rights.

On the other hand, public awareness plays an important role in pressurising governments to be more generous in funding endeavours aimed at reducing impacts on the

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the environment to bring their grievances to an administrative tribunal (Article L 142-1 Env. Code). Local authorities and their associations can exercise the rights recognised to the civil party with regard to acts which directly or indirectly damage the territory in which they exercise their powers and constituting an infringement of laws related to the protection of nature and the environment and the texts implementing them (Article L 142-4 Env. Code)"; Philipsen, N. J., M. G. Faure, and K. Kubovicova (n 233) 43-44.

[309] Report of the United Nations Conference on Environment and Development, UNCED,A/CONF.151/26 (Vol. III), Rio de Janeiro, 3 to 14 June 1992.

[310] Mosalha, M. *Non-Governmental Organizations and Their Role in Public Communication*. Jordan Environment Society Magazine. Amman, Jordan, p. 26. م. مصلحة، (1996). الاتصالات في ودورها الحكومية غير المنظمات. ص الأردن، عمان، .البيئة جمعية الأردن مجلة .العامة 26.

[311] Recently in Canada, NGOs have pursued the route of judicial review to force governments to take action in response to climate change and to keep their commitments to reduce national greenhouse gas emissions. Eco justice has represented several NGOs in cases where animal species faced extinction and the federal government was forced to respect and apply the Species at Risk Act. The NGOs have political clout. Friends of Earth commenced an application for judicial review on the grounds that the Canadian Minister of Environment had failed to comply with section 166 of CEPA 1999. *Alberta Wilderness Assn. v. Canada (Minister of Environment)*, [2009] F.C.J. No. 876; *Environmental Defence Canada v. Canada (Minister of Fisheries and Oceans)*, [2009] F.C.J. No. 1052; *David Suzuki Foundation v. Canada (Minister of Fisheries and Oceans)*, [2010] F.C.J. No. 1471. Eileen Skinnider (n 175) 68.

natural environment by working towards sustainable use of resources.[312] Furthermore, it promotes environmental awareness to all sectors of the society and helps create individual and national commitment to preserve the environment and deal with environment related issues.

Environmental education may play a useful role in increasing environmental awareness; this awareness will help to reduce pollution as well as enlightening individuals of their rights[313] to take legal action where industries have adopted a laissez faire approach to harming the environment in the pursuit of greater profitability.[314]

Indeed, if citizens are discouraged from playing a part in enforcement of environment laws, or denied education on green issues, even the most elegant programme of environmental protection laws may exist only on paper.[315]

3.2.2. Legislations of Air Pollution

The various laws which presently govern air pollution in Iraq shall be addressed in-depth below. This includes the obvious enactments dealing with air pollution.

The purpose of this section is to present a detailed analysis of Iraq's legal framework for the protection of the environment from air pollution.

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[312]Iina Sahramäki, Korsell Lars, and Kankaanranta Terhi. "Prevention of environmental crime through enforcement—Finland and Sweden compared."*Journal of Scandinavian Studies in Criminology and Crime Prevention* 16.1 (2015): 41-59.

[313] Recently in Canada and in other jurisdictions, NGOs have made applications for judicial review to compel governments to take action in response to climate change and their commitments to national greenhouse gas emissions. Eco justice has represented several NGOs in cases where they oblige the federal government to respect and apply the Species at Risk Act. The NGOs have standing as they represent the public interest, given that the species at risk cannot bring such an action;In Canada, Friends of Earth commenced application for judicial review asserting that the Minister of Environment has failed to comply with section 166 of CEPA 1999. *Alberta Wilderness Assn. v. Canada (Minister of Environment)*, [2009] F.C.J. No. 876; *Environmental Defence Canada v. Canada (Minister of Fisheries and Oceans)*, [2009] F.C.J. No. 1052; *David Suzuki Foundation v. Canada (Minister of Fisheries and Oceans)*, [2010] F.C.J. No. 1471. Eileen Skinnider (n 175) 68.

[314] Christopher D Stone. "Should Trees Have Standing--Toward Legal Rights for Natural Objects." *S. CAl. l. rev.* 45 (1972): 450.

[315] Katja Eman. "Environmental crime trends in Slovenia in the past decade." *Varstvoslovje* 15, no. 2 (2013): 240

It is obvious that the Iraqi laws on environmental protection from air pollution are overlapped and sometimes conflicted when dealing with environmental violations.

Environmental crime has not been determined or consolidated into a single law but is found in a range of separate pieces of legislation. Some of the most frequently used criminal sanctions are found in the Law on the Protection and Improvement of the Environment, No.27 of 2009 and of the Iraqi Penal Code No. 111 of 1969, legislation differ in their stringency and level of enforcement between different types of crimes with indeterminate. Some laws are imposed mixed penalties for e.g. mixing administration and criminal or civil and criminal penalties. In the following legislations, we will highlight each provision and how it linked to administration, civil, and criminal penalties.

3.2.2.1 Law No. 27 of 2009 on the Protection and Improvement of the Environment

The purpose of the Law is to be found in the Article 1:

> This law aims to protect and improve the environment through the removal and rehabilitation of damage found or that has occurred in it, as well as to protect public health, natural resources, biodiversity, cultural and natural heritage. This is to be carried out in collaboration with specialized agencies to ensure sustainable development and the achievement of international and regional cooperation in this area.[316]

Article 2 defines key terms as used in the law, including:

> 5. The environment: encompasses all the elements that exist, such as living creatures and the impacts arising from human economic, social and cultural activities.
>
> 6. Environmental elements: water, air, earth and living creatures.
>
> 7. Polluted environment: any solid or liquid matter, noise, tremors, radiation, heat, fire or biological agents that have a direct or indirect effect on environmental pollution.

[316] Ibid (n 21) art 1

8. Pollution of the environment: existence of any recent pollution in quantities or concentrations or in non-natural form, which have a direct or indirect negative effect on humans or other animals.[317]

This law also places a duty on those who own factories, vehicles, workshops or any entity whose activities may adversely affect the environment or emit pollutants to install equipment and to take whatever measures are necessary to prevent these emissions or bring them within the limits specified as permissible by national standards.[318]

Article 11 asserts the authority of the Ministry to approve or reject proposals for projects that may affect the environment as follows:

Any activity undertaken by an organization with an impact on the environment cannot go ahead without first obtaining the approval of the Ministry.[319]

The purpose of this Article is to control pollution by requiring all those planning to undertake projects that could cause environmental pollution to first receive approval from the Ministry of Environment and to be subject to certain conditions before beginning work.

The above mentioned article has an administrative nature and imposes administrative measures.

As described above, currently there is no legally binding definition under which air pollution. Although Law on the Protection and Improvement of the Environment, No. 27 of 2009 does not clearly extend its definition of air pollution definition to cover all sources of air pollution emitted from all public or private premises,[320] the following activities are prohibited and forbidden under Article 15:

[317] Ibid, art 2
[318] Ibid, art 10
[319] Ibid, art 11
[320] With regards to the environment element air, the Ministry adopts the definition of Air as defined by the Jordanian Standard (JS) No. 1140 of 2006: Environment-Air quality-Ambient air quality standards: "*a mixture of gaseous that has its own natural properties and of known constitutes*". The definition includes ambient air outdoors, in working areas, public places, and etc. Air pollution is understood as any change in the composition

1. The dissemination of smoke, gases and vapours or particles from production activities or the burning of material, except to undertake treatment, as foreseen in the provisions contained in national environmental laws;

2. Motors prohibited from use whose emissions exceed permissible levels contained in national environmental laws.

3. Burning of waste material, except in specially designated areas where measures are in place to safeguard the environment;

4. Drilling, foraging, construction or demolition works that leave raw materials, residues, except after taking the necessary preparations to store and safely transport these elements in order to avoid their release into the air.[321]

In terms of the oil and natural gas industries, Article 21 stipulates that:

Designated agencies involved in the exploration and extraction of oil and natural gas resources should take into account the following:

1. Take necessary steps to eliminate and prevent the harmful or dangerous aspects of their oil and natural gas exploration and extraction activities; make plans to undertake oil extraction activities in a manner that prevents pollution of the soil, air, water and water wells.[322]

We can notice that this article has an administrative nature and imposes administrative measures.

In terms of the Environmental Protection Fund:

Article 26:

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of the ambient air that may result in directly or indirectly harming the environment or human health. Changes to the composition of the ambient air may result from human activities or natural disasters. However, all organisations and enterprises in the agricultural, industrial, commercial, housing and mining sectors are subject to the provisions of the Air Protection Regulation No. 28 of 2005. Effluents must not exceed permissible limits specified JS No. 1140; الشراري ، صالح. "الهاشمية الأردنية المملكة في البيئة لحماية القانوني الإطار: تحليل 52 رقم البيئة حماية قانون لعام 2006." ج. بول & L.7 (2014): 16[Al-Sharari, Saleh. "The Legal Framework for Environmental Protection in the Hashemite Kingdom of Jordan: Analysis of the Environmental Protection Law No. 52 of 2006." *J. Pol. & L.*7 (2014): 16].

[321] Ibid (n 21) art 15

[322] Ibid, art 21

A fund entitled the 'Environmental Protection Fund' shall be established. It has a legal status and is represented by the President of the Administrative Council of the Fund or his deputy.

Article 28:

The revenue of the Fund shall be made up of the following elements:

1. Allocations by the State from its general budget;

2. Contributions to the Fund in accordance with the law;[323]

3. Fines that have been agreed upon or ruled upon, following damage caused on the environment;[324]

4. Assistance of countries, Arab organizations, regional and international organizations involved in the protection of the environment that have been accepted by the Ministry, in accordance with the law;

5. Fees that the Fund earns from the services it provides to the Ministry and the information it issues in this respect.[325]

Article 29:

The expenses of the Fund shall fall within the areas specified within this law.

[323] In Canada, for example, an Environmental Damages Fund has been set up on the basis of the "polluter pays principle". Those who cause damage to the environment are compelled to take responsibility for their actions by contributing to this scheme in order redress the damage caused. An Ontario court sentenced a company which violated CEPA's Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations by imposing a $30,000 fine, of which $18,000 was directed to the Environmental Damages Fund and $10,000 directed to the Technical Research and Development Fund. MEA-Ren news "Attempted Illegal Export of Hazardous Material Brings $30,000 penalty" (31 January 2011).

[324] In another case, the court ordered that the money which was directed to the Environmental Damages Fund be for use in Nova Scotia as that was where the harm occurred. MEA-Ren news "N.W. Cole Associates Appraisers Limited to Pay $10,000 penalty for violating Federal Environmental Law" (31 January 2011).

[325] In another case, the BC courts ordered a company to pay a sum which was then made available to a community environmental organisation to support its work on conservation and protection of fish and fauna habitat. This Fund is available to NGOs, universities, aboriginal groups and provincial, territorial and municipal governments. Individuals are ineligible to apply for funding but are encouraged to partner with those who can. The Fund provides financial assistance to projects such as restoration, environmental quality improvement, research and development, and education and awareness. Funding priority is given to projects that will help to restore the natural environment and conserve wildlife in the geographic region most affected by the original incident. R v Forrest Marine Ltd (29 April 2005) (BC Prov Court) as cited in Bendickson, supra note 35; Eileen Skinnider (n 175) 66.

In the Part 8 (Compensation for damages) Article 32 refers to the responsibility of individuals who cause environmental damage to repair this damage, as described in Article 32:

> 1. Individuals are personally responsible for their actions, negligence or shortcomings sub-gradients who are under his auspices, supervision, as well as for monitoring or controlling their personnel. This includes non-compliance with or violations of the laws, regulations and notifications relating to environmental damage. Shall be obligated to pay compensations, remove the damage within a suitable period and return the situation to the conditions prior to the damage happened by his own methods and within the timeframe indicated by the Ministry.

This Article refers to the environmental legislator applies the rules of civil liability for environmental damage. It was more effective to introduce a system of civil liability for environmental pollution than to rely on Law No. 27/2009 alone because its provisions (i.e. these rules) may not be appropriate to the nature of environmental damage and do not include appropriate compensation in this regard.

It is also noted that the Iraqi legislator has emerged as having environmental administrative responsibility for appointing an authority to determine the length of time required to remove the damage to ensure effective protection of the environment.

It is important here to mention to the Article 16 of the protection and Improvement of the Environment Law, No. 76 of 1986 the Penalties for the violation of the regulations and instructions of the Environmental Protection Council also are referenced in Article 16[326]:

> Shall be punished by imprisonment for a period not exceeding six months or a fine of not more than five hundred Iraqi dinars or both penalties, whoever contravenes the regulations and instructions issued by the Council for Environmental Protection.[327]

[326] المادة 19 من قانون حماية البيئة وتحسينها، رقم 76 لعام 1986[Article 19 of the protection and Improvement of the Environment Law, No. 76 of 1986; translated from Arabic to English by the author]
[327] Ibid, art 16

In addition the Article 17:

In relation to the punishment for the specific crime of pollution, Article 17 notes that:

> In addition to the penalties in Article 16, any person who carries out an activity resulting in pollution or damage to the environment will be required to compensate for damages caused by it. The compensation includes the costs of removing pollution and its effects.[328]

It is clear from the Article that this punishment applies to anyone whose actions cause environment pollution. Although no type of pollution is specified, it can be understood to include air pollution. Also noteworthy is the requirement that the polluter provides compensation. Although the language of the law on this point does not necessarily exclude other forms, the only form specified is the 'costs of removing the pollution and its effects'. Moreover, the legislator here did not mention compensation for the affected persons or environment, nor did he mention how to determine the compensation or the magnitude of the damage.

Furthermore the Article 18:

> The Supreme Council shall issue instructions to facilitate the implementation of this law, taking into consideration projects that cause pollution and damage to the environment, and considering the appropriate period for removing the contravention.[329]

According to the Article 20 of the protection and Improvement of the Environment Law No. 3 of 1997[330]:

> Without prejudice to any severe penalty stipulated in the laws and decisions, the contravener of the provisions of this law shall be punished with imprisonment and with a fine not less than

[328] Ibid, art 17
[329] Ibid, art 18
[330] المادة 20 من قانون حماية البيئة وتحسينها رقم 3 لعام 1997 [Article 20 of the protection and Improvement of the Environment Law No. 3 of 1997 ; translated from Arabic to English by the author]

fifty thousand (50,000) Dinars and not exceeding two hundred fifty thousand (250,000) dinars.[331]

Article 21 outlines the penalties imposed on violators of these instructions and provisions as follows:

Firstly:

1) Whoever contravenes the provisions of instructions issued by the Council shall be punished with a fine not less than fifty thousand dinar (50,000) and not exceeding two hundred fifty thousand dinar (250,000).

2) In case of repeated contravention, the penalty shall be with imprisonment for a period not less than three months and not exceeding six months, and with a fine not less than one hundred thousand (100,000) dinars and not exceeding (500000) Five hundred thousand dinars.

Secondly:

The chairman of the Council or whoever is authorized among those whose job is not to be less than the director general, shall be authorized the jurisdiction to impose the sanctions stipulated in Para. 1 of the first Item of this Article.[332]

Article 22 expands on these stipulations as follows:

In addition to the penalties stipulated in Article 20 and the first Item of Article 21 of this law, there shall be a binding obligation on whoever practises an activity that causes pollution of the environment to provide compensation against injuries incurred as a result of said pollution, and the compensation shall include the expense of removing the pollution and its effects.[333]

It should be noted here that the Iraqi legislator amended the provisions in the Articles (17 and 18) stipulating sanctions under the previous law, raising the level of sanctions and more

[331] Ibid, art 20
[332] Ibid, art 21
[333] Ibid, art 22

importantly including provision for compensation for injuries to people, while retaining the provisions of the previous law on the expenses of removing the pollutant and its effects.

Article 23:

> The Law on Protecting and Improving the Environment No. 76 of 1986 shall be repealed and the regulations and the instructions issued accordingly shall remain in force so as not to conflict with the provisions of this Law until issuance until issuance of whatever shall replace or abolish them.[334]

The Iraqi law No. 27/2009 allowed in-kind compensation for environmental damage. In so doing, it went beyond the general rule of compensation, which requires monetary compensation first and then compensation in kind according to the circumstances and at the request of the victim and upon the conviction of the court.

In Part 9 (Punitive measures) in Article 32 goes on to stipulate that:

> 2. In the case of negligence and shortcoming or the unwillingness to abide with what has been stated in clause one of this Article, the Ministry will take all necessary steps and measures to ensure that the damage is repaired, and the environment returned to its previous state.
>
> Administrative costs will be added to the costs of the above on the basis of opinions obtained on the following:
>
> a) The severity of the impact of the polluting substance and type of pollutant;
>
> b) The current and future impacts of the pollution on the environment.
>
> 3. The responsibility for the damage shall be allocated on the basis of non-compliance with paragraphs one and two of this prescribed Article.

As the foregoing indicates, this law built a system of liability based on the nature and extent of the damage done to the environment.

[334] Ibid, art 23; In both laws, there are no regulations or instructions issued by the legislator or the authorized person to facilitate the implementation of these laws, nor do we notice any significant difference between the two laws.

It is therefore possible to believe that the legislator, may have directed the intention to assume the fault of environmental responsibility.

Article 32 does not specify which party has the right to initiate proceedings, nor even the court in which such cases should be filed. The only instruction in this regard is that compensation should be deposited in the Environmental Protection Fund.

> 4. Any compensation due shall be paid into the Fund and used to redress the pollution, in accordance with Part 8 of this law.[335]

Upon consideration of this matter, compensation is imposed by the administrative authorities. In the view of this author, it is preferable that compensation be overseen by the judiciary rather than as intended by the legislator. Article 33 of the Environmental Protection Law No. 27/2009 included an administrative part by stipulating that:

> 1. The Minister can issue a warning to any company, factory or pollution source to remove the source of the pollution within a period of 10 days from the notification. In the event of non-compliance, the Minister can halt work or temporarily close operations for a period of 30 days, which can be extended until such time as the source of the pollution, is removed.

According to this provision, the competent authorities shall have wide authority to impose the appropriate administrative penalty if the legislator gives the competent minister the choice to approve either the suspension or administrative closure.

If the establishment does not remove the source of the pollution, the Minister may suspend the work or close it temporarily for the period mentioned above. The Minister also has the power to extend the penalty imposed in cases where the pollutant is not removed

[335] Ibid, art 33

because the ongoing activity of the violating entity constitutes a permanent source of pollution.[336]

Article 33 indicates that the dismissal is the same lawbreaker, and the legislator did not provide that the competent administrative authority could remove the violation through administrative closure, or at the expense of the violator. It only provides that the penalty imposed can be renewed until the source of the violation is removed.

It is clear from this Article that the Iraqi legislator has authorised the administrative authorities concerned with environmental protection to warn the party causing the pollution and remove the infringing work within the timeframe specified by the Ministry. If the concerned authority does not comply, then the environmental administrative control bodies can intervene by implementing the deterrent administrative sanctions.

Therefore, enabling the competent administrative control authorities to sign this penalty would support the role of administrative control in the field of environmental protection by ensuring speedy deterrence of the violator, because the warning includes a statement of the seriousness of the penalty that will be imposed if the violation continues.

> 2. In line with the regulations mentioned in paragraph 1 of this Article, the Minister, or someone that he may delegate (but holding no less a rank than General Manager) can impose a fine of no less than 1 million dinars. The fine shall not exceed 10 million dinars and may be renewed each month until the infraction specified in this law no longer exists, as well as other notifications or announcements that have been issued in this respect.[337]

The Law provides for sanctions ranging from administrative to criminal penalties. Administrative penalties may include revocation of business licenses or business closure,

[336] The Jordanian environmental legislations, by contrast, entrusted the administrative judiciary with the authority to review the decisions of the minister of the environment, especially those decisions issued in accordance with environmental impact assessment bylaw. This offers individuals and institutions a guarantee to challenge the abuse of power in this regard; Article 16-18 of the Jordanian Environmental Impact Assessment Bylaw.

[337] Ibid (n 21) art 33

while criminal penalties may include (depending on the seriousness of the violation) fines and imprisonment.

This law contains a good mix of criminal and non-criminal enforcement measures, and the criminal sanctions are meaningful – the maximum fines provided for are significant in the case of several offences. Unfortunately, although good on paper, this law has been poorly enforced. This undermines the law and is a situation that must be addressed if environmental law is to be taken seriously. It is all very well having good laws on paper, but inadequate enforcement is widely perceived (and with ample justification, it would seem) as a problem that renders such laws merely paper laws.

In addition, this law contains provisions providing for augmented penalties in the case of continuing violations and for rehabilitation of damage caused by an offence. These are both desirable provisions in environmental legislation.

As far as alternatives to criminal sanctions are concerned, less use is made of these than one might expect. Although several laws contain provisions for officials to make use of powers enabling directives to be given to offenders to remedy the situation or to take other necessary steps, the criminal sanction still appears to be the primary mode of enforcement.

If one considers the penalties provided for offences in this law considered in this chapter, however, the penalties provided for are, in most if not all cases, relatively serious. In most cases heavy maximum terms of imprisonment are imposed. Another recent trend has been for legislation not to specify the amount of the fine, leaving that to the discretion of the Court. Such discretion will probably be influenced by the maximum term of imprisonment provided for, which is not subject to the effects of inflation.

The Law on the Protection and Improvement of the Environment, No. 27 of 2009 is an example of an enactment that uses the classic ‘command and control’ type of enforcement

approach, declaring certain activities to be offences and providing for a maximum penalty, of the traditional fine and/or imprisonment type, for contravention thereof.

In addition to the standard criminal provisions described above, however, the law also contains a clause allowing the court to order the accused to remove any structure that has been erected in breach of the law, and also contains what will be described in this Chapter as a 'remediation clause', allowing the court to order the accused to repair any damage caused to the air by his or her illegal act. Both these clauses apply only once the person in question has been convicted of an offence under the law, so can be regarded as provisions which supplement the criminal sanction, rather than alternatives to it.

There is provision in parts of the Law for abatement control measures to be exercised before use of the criminal sanction (see Article 32 and 33) and this is certainly a sensible approach since it potentially leads to the cessation of the undesirable activity with minimal administrative burden. The inadequacy of the criminal sanctions provided by this Law have, as has been pointed out above, led to the relevant authorities using alternative, and seemingly more effective, means (i.e. an interdict) of ensuring compliance with this Law.

This Law contains several offences but also has alternative enforcement measures that are worth commentary. There are several procedures provided for whereby the (MoE) can take steps to prevent pollution of the air by harmful substances, including ordering the manager or the responsible person of a company to take specified measures.

Failure to comply with this primary enforcement measure is a criminal offence – so the criminal sanctions in this case work as back-up.

Where the criminal sanctions are utilised, the penalties provided for are substantial, reflecting the seriousness of the air pollution problems that the Law is designed to address.

Finally, but since then the penalties have not been updated, and the original penalty (for certain other offences) has not been amended since the law enactment.

Reviewing the provisions of Law on the Protection and Improvement of the Environment, No. 27 of 2009 demonstrates that it has failed to provide confiscation of assets and other sanctions as penalties for pollution, highlighting only the return of hazardous materials or waste to their source or their disposal in a safe manner.

It is the view of this researcher that the Iraqi legislator should have provided administrative confiscation to enable to enable competent authorities with administrative control of the application of this penalty to achieve the deterrence necessary to protect the environment. This helps to eradicate dangerous substances and reduce ongoing environmental pollution.

The Iraqi legislator has stipulated the prison sentence for crimes that pollute the environment in Article 35 as follows:

> Those contravening the obligations contained in parts one, two and four of Article 20 of this law will be imprisoned and will be obliged to return all the hazardous material and waste products, radioactive material to their establishments in order to be disposed of in a secure manner.[338]

It is noted in this Article, the Iraqi legislator took the penalty of imprisonment to mean an absolute penalty for crimes involving environment pollution with materials and hazardous waste in one Article only. It would have been better to extend this punishment to other environmental crimes such as air pollution and to and to tighten the sanction when the crime is compounded by aggravating circumstances as in the case of repeat offenders.[339]

Furthermore, Law No. 27/2009 does not mention the penalty of the cancellation or withdrawal of the license, in addition to the other administrative sanctions mentioned above,

[338] Ibid, art 35

[339] Such an approach can be seen in the Jordanian Environmental Law which applies a simple and clear criminal approach by prescribing environmental offences and determines the due punishment in the same provision. Article 16-18 of the Jordanian Environmental Impact Assessment Bylaw.

despite the importance of this penalty for increasing the effectiveness of the role of administrative control in the protection of the environment and as a deterrent of projects that and continue to carry out activities which pollute the environment despite warnings to desist.

It should be mentioned that the omission of the Iraqi environmental legislator of a sanction authorizes the Ministry to discipline officials responsible for protecting the environment in the event they breach their duty to protect the environment in order to ensure the best performance of the administrative control of its environmental duties.

These sanctions are one form of environmental administrative sanctions, and they apply both to officials responsible for implementing or supervising environmental protection laws as public health inspectors and to workers in environment-polluting projects such as petroleum refining plants.

The Iraqi Environmental Protection Law No. 27/2009 recommended to provide disciplinary sanctions to deter employees from damaging the environment because without such provisions means relying on the application of the penalties stipulated in Law No. 14 of 1991 on State and Public Sector Discipline, which may not be in line with the role to be exercised by the authorities for the administrative control of the environment.

Article 38 states that the legislator is required to issue instructions to facilitate the implementation of this law. In the interim, the provisions of Law No. 3 of 1997 shall remain in effect provided they do not contradict the provisions of this law. Despite the enactment of Law on the Protection and Improvement of the Environment, No. 27 of 2009, however, the instructions for its implementation were not issued.[340] It would have been more effective if

[340] For instance, according to the Egyptian Constitution, some regulations or instructions related to the protection of the environment have been promulgated, including the executive regulations of the Egyptian Environment Law No. 4 of 1994, issued pursuant to the Prime Minister's Decision No. 1741 of 1995, as stipulated in this law, Which states that (The Prime Minister, upon the presentation of the environment Minister concerns and after consulting the Board of Directors of the Environmental Affairs Agency, shall issue the executive regulations of the accompanying law within a period not exceeding six months from the date of started work.

the Iraqi environmental legislator had included a provision specifying the time required for issuing these instructions.

Article 37:

> The environment protection and improvement law No. 3 of 1997 shall be annulled and all regulations and directions duly issued shall be still in force in case of contradiction with the terms of this law until being replaced or abolished.

Furthermore, the Article cited by the legislator is ambiguous. Although stating that the regulations and instructions issued under Law No. 37 of 1997 for the Protection and Improvement of the Environment shall remain in force until the issue is replaced or canceled, Law No. 37 of 2008 on the Ministry of Environment authorized the Minister of Environment to issue instructions and internal regulations to facilitate the implementation of environmental protection law. Accordingly, the Ministry of Environment issued instruction No. 1 of 2010 for the prevention of non-ionized radiation from mobile telephone systems and Instruction No. 1 of 2011 on the internal regulations of the Ministry of Environment and its functions.

There is no doubt that the delay in the issuance of instructions to implement the environmental protection and improvement law No. 27/2009 will lead its Articles to become rigid and its fall short to address many cases of environment abuse. It is therefore advisable for the Council of Ministers or the Ministry expedite the issuance of instructions that facilitate the implementation of the provisions of this law.

A final observation concerns penalties. Criticism has often been levelled at this environmental law to the effect that the penalties provided for are so low as to make the use of criminal sanctions a pointless exercise. This is certainly the case in respect of several pre-1997 environmental statutes. If one considers the penalties provided for offences in this law considered in this chapter, however, the penalties provided for are, in most if not all cases, relatively serious. In most cases heavy maximum terms of imprisonment are imposed.

3.2.2.2 Regulation No. 4 of 2012 for the Protection of Ambient Air Quality

The purpose of ambient quality standards is to fix a maximum level of pollution in an environmental sector during normal periods. Examples include setting how much sulphur dioxide the air may contain.[341]

Article 2 of the Regulation No. 4/2012 defines the purpose of the Regulation as follows:

> This regulation aims to protect the ambient air from pollution and improve its quality by controlling the sources of pollution.[342]

Article 11 describes the responsibility of individuals for ambient air pollution, especially from the oil industry as follows:

> The owner of the source that emits into the ambient air shall take into account when burning any type of hydrocarbon fuel for the purposes of oil industries or other industries and power plants or any other commercial purpose that the smoke and gases and the resulting fumes are within the limits of the quality of emission.[343]

In addition, Article 19 provides that:

> The owner of the source of pollution polluting the air shall bear the cost of damage to the environment and health and its removal and compensation of the injured party if it is proved that the contamination exceeded its limits.[344]

However, while this Article is clear about the type of compensation required, the compensation mechanism is not mentioned.

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[341] Dinah Shelton and Alexandre Charles Kiss (n 299) 35.
[342] المادة 2 من نظام حماية جودة الهواء المحيط رقم 4 لعام 2012 [Article 2 of Regulation No. 4 of 2012 for the Protection of Ambient Air Quality; translated from Arabic to English by the author]
[343] Ibid, art 11
[344] Ibid, art 19

Moreover, in the event of a conviction in terms of this regulation the court may order that any damage to the environment resulting from the offence be repaired by the person so convicted. Failure to comply with such an order entitles the authority in question did not take the necessary steps itself and to recover the costs from the defaulting party. These provisions are useful and correspond with practice in other countries. Orders of this type are discussed in more details in Chapter 5.

3.2.2.3 Instruction No. 3 of 2012 on National Emission Standards

There are both national laws and international legal agreements that set standards for processes and products that have an impact on the environment. A standard is a prescriptive norm governing those processes or products or setting limits on the pollutants and emissions that can be produced. An emission standard specifies how much of a pollutant is allowed to be discharged from a given source. This type of standard generally applies to a fixed installation – for example, a home or a factory. Product standards are the type of standard normally used to regulate mobile pollutant sources.[345]

Pollution from vehicles has also become significant in recent times. The Ministry of Environment has developed National Emission Standards Instruction to combat pollution. Instruction No. 3 of 2012 obliges authorities and concerned bodies to publish a national air quality strategy which should set standards of air quality, measures for the restriction of levels of particular substances in the air to be adopted by local authorities for the purpose of achieving these objectives.

Regulations that govern fixed sources and those that govern movable sources are fundamentally different from each other. Fixed sources larger than a specified size will usually be authorised or licensed in accordance with strict criteria, after which they are

[345]Dinah Shelton and Alexandre Charles Kiss (n 299) 34-35

monitored regularly. Emission standards may also be set by regulation and can be specific or general; they can be different for different installation types or simply for different installations. Aspects particularly likely to be covered by such regulations include emissions of particulates and gas, the height of chimneys and the amount and kind of fuel permitted to be used.

A legislative instrument may establish an air-quality region or air-quality zone. The most frequent use of zoning laws involved their enactment at a local level to affect the location and amount of a polluting activity with the object, always, of adapting the general standard to the local geographic reality. There are, usually, two common factors: (i) the prohibition or limitation of polluting activities in such specific zones as a densely populated area or a site in which nature is protected, and (ii) where pollution is particularly bad, the establishment of stricter air-quality standards or emission standards.

As well as setting air-quality and emission standards, any serious attempt to reduce air pollution must also address the use of fuels that contain high levels of lead, sulphur or other pollutants, and should exercise control over combustion.[346]

The purpose of Instruction No. 3/2012 is stated in Article 2:

> These instructions are aimed at controlling the polluting emissions of air and regulating the environmental work among all environmental authorities.[347]

Towards that end, Article 6 provides for the control of emissions of air pollutants and stipulates the measures that should be taken to reduce them:

> When burning any type of hydrocarbon fuel, whether it is for the purposes of industry or power generation or construction, [steps should be taken] to make fumes, smoke and

[346]Dinah Shelton and Alexandre Charles Kiss (n 299) 80-81

[347]المادة 2 من تعليمات معايير الانبعاثات الوطنية رقم 3 لعام 2012 [Article 2 of the National Emission Standards Instruction No. 3 of 2012; translated from Arabic to English by the author]

> harmful gases resulting within the limits allowed. The operator should take all necessary measures to reduce the amount of pollutant emissions. Not to use black oil and other heavy petroleum products or crude oil in residential areas, excluding industrial facilities.[348]

If these instructions and their conditions are violated, Article 17 stipulates that the competent authorities will refer the violator to the judicial authorities:

> Ministries and competent authorities should refer irregularities in relation to the provisions in these instructions to the judicial authorities to take the necessary legal measures.[349]

3.2.3. Related Provisions of Air Pollution at Non-Environmental Laws

This sub-section adopts an approach that includes legislation that affects the environment (for example, the Public Health Law). In each case, only those aspects of the legislation that are relevant to the environmental problems arising from pollution in general or air pollution specifically will be considered if provided.

3.2.3.1 Law No. 89 of 1981 on Public Health as amended

The Public Health Law deals with a wide range of health issues, only some of which fall under the category of environmental law. The only offence under the law that could be regarded as an environmental offence is contained in chapter two in this law, which provides for a notice procedure requiring the recipient to take certain steps and non-compliance is an offence.

This law specifically gave assurance for the protection of the environment under Article 3(8), which charges three times with maintain, protect, improve, develop etc. under

[348] Ibid, art 6
[349] Ibid, art 17

Article 3(8) of the Public Health Act No. 89 of 1981 and its amendments,[350] and Article 30, which requires expanding the establishment of environmental laboratories to conduct various physical, chemical and biological laboratory tests to investigate water, air and soil pollutants'.[351]

Likewise, Articles 3 and 30 provide protection of the environment and prevention of pollution, including air pollution, as a cause of human health.

Article 96(1): is cancelled under Article 5 of the Eighth Amendment to the Public Health Law No. 89/1981, replaced by Law No. 54 issued in 2001 which mention:

> The Minister of Health can warn any establishment, project or any agency or environmental pollutant source within 30 days to remove the factor harmful to the environment, imposing a fine of not more than 250,000 Iraqi dinars IQD, or stopping the work for 90 days until the pollution has been treated, or both punishments if he violates the provisions, regulations and instructions of this law.[352]

Article 96 refers to punishment applicable to every person or entity that pollutes the environment, whether air, water or other. Similarly, Article 100 stipulates that:

> Without prejudice to any punishment forenamed in other laws, the Minister of Health is entitled to cancel the health permit, close the store, and stop the work when environment pollution that threatens life and health of citizens is proven.[353]

From the above articles we notice that the Iraqi legislator has implemented mix of three penalties, the administration, the civil, and the criminal.

[350] المادة 3 (8) من قانون الصحة العامة رقم 89 لسنة 1981 وتعديلاته [Article 3(8) of the Public Health Law No 89 of 1981 as amended; translated from Arabic to English by the author]
[351] Ibid, art 30
[352] Ibid, art 96
[353] Ibid, art 100

This Article also indicates that the Articles and penalties of this law do not conflict with other laws.

Moreover, although there is little direct reference in the law to punishment for the violator, it does stipulate a range of penalties from fine, imprisonment, closure and withdrawal of business license.

Most offences under this law are not strictly environmental offences, but there are some, relating to health and safety of the general public, that was discussed here.

The offences under the Public Health Law No. 89/1981 that can be categorized as environmental crimes are somewhat unremarkable. One comment that could be made, however, is that the penalties provided for are mild, given the polluter and the potential for serious environmental damage caused by failure to comply with these provisions.

3.2.3.2 Oil and Gas Law of 2007

The environmental damage caused by petroleum hydrocarbons is very serious; while it has occurred naturally since ancient times, in recent years man-made oil spills have become quite common. Roughly 14,000 cases of hydrocarbon flow to the atmosphere arise every year.[354] This clarifies the danger presented by the presence of very large quantities of crude oil in atmosphere.[355]

Crude oil is a mixture of different chemical compounds which may contain dissolved gases, liquids and bituminous solids, whereas refined petroleum products are typically a mixture of defined chemical compounds.[356]

[354]Considine Timothy J and Larson Donald F, 'Risk Premiums on Inventory Assets: The Case of Crude Oil and Natural Gas' (2001) 21(2) *Journal of Futures Markets* 109

[355]Nicholson Carla A and Fathepure Babu Z, 'Biodegradation of Benzene by Halophilic and Halotolerant Bacteria Under Aerobic Conditions' (2004) 70(2) *Applied and Environmental Microbiology*1222

[356] Susan J Robertson and others, 'Petroleum Hydrocarbon Contamination in Boreal Forest Soils: A Mycorrhizal Ecosystems Perspective' (2007) 82(2) *Biological Reviews* 213

The past twenty years have seen much greater public concern about the negative effect on the environment of exploration for oil. Crude oil and refined petroleum products have effects that can be devastating on the environment and the people, plants and animals in it.[357]

In Iraq, a large number of oil wells are distributed throughout the country.[358]

The most obvious source of income for the redevelopment of Iraq and its economy is the revenue from oil and gas. However, that does not take away the need to ensure that the objectives of the Constitution are adhered to or that the environment is preserved, nor should it prevent the realisation that oil resources will be exhausted one day.[359]

The Oil and Gas Law 2007 is the primary legislation on oil and gas activities in Iraq. It ensures public safety and environmental protection. The Articles relevant to air pollution under this law are as follows:

Article 14, Obligations of the Holders of Exploration and Production Rights, paragraph H:

> A holder of Exploration and Production rights is obliged, mutatis mutandis, to: Compensate the Injured parties for any losses or damages resulting from the conduct of the Petroleum Operations as provided by law.[360]

This Article has a civil penalty nature based on the violations mentioned in the context of this Article.

Article 31 Environmental Protection and Safety:

> In addition to carrying out their Operations in accordance with Good Oil Field Practices, INOC [Iraq National Oil Company] and other holders of Exploration and Production rights

[357] Elliott David, *Energy, Society and Environment* (Routledge 2004) 253; R Latha and R Kalaivani, 'Bacterial Degradation of Crude Oil by Gravimetric Analysis' (2012) 3(5) *Advances in Applied Science Research* 2789; Marwah Thamer and others, 'Biodegradation of Kirkuk Light Crude Oil by Bacillus Thuringiensis, Northern of Iraq' (2013) 5(7) *Natural Science* 865; Das Kishore and Mukherjee Ashis K, 'Crude Petroleum-Oil Biodegradation Efficiency of Bacillus Subtilis and Pseudomonas Aeruginosa Strains Isolated from a Petroleum-Oil Contaminated Soil from North-East India' (2007) 98(7) *Bioresource Technology* 1339

[358] Hussein Eman, Abedalrazaq Israa and Zainalabdeen Nada, 'Impact of the Oil Components on the Soil Properties in the Surrounding Sites of the North Oil Company in Kirkuk' (2014) 8(9) *Australian Journal of Basic & Applied Sciences* 125

[359] Oil and Gas Law of 2007, Preamble

[360] Ibid, art 14(H)

> shall conduct Petroleum Operations in accordance with environmental and other applicable legislation of Iraq to prevent pollution of air, lands and waters. They shall also conduct Petroleum Operations to comply with the environmental management standards of the ISO 14000 series, as amended.[361]

Articles 14 and 31 assert the responsibility of oil companies for causing damage to the environment, including air pollution, and stipulate their obligations to provide compensation for damage to public and private property.

Finally, Article 42:

> The relationship to existing legislation states that 'any Article in prejudice to this Law shall cease to be effective on adoption of this Law.[362]

3.2.3.3 Oil and Gas Law of 2011

Enormous environmental damage is caused by the pollution from oil and its derivatives because of incorrect maintenance, smuggling, and incorrect transportation.[363] The legal system must be integrated if adequate deterrents are to be developed against the deliberate spelling of oil, whether caused by sabotage, or by theft.[364]

For the purposes of the good common, the reason for updating the previous law, the Council of Ministers decided not to object to the change in formulations without prejudice to the essence of principles and foundations and procedures approved by the Council of Ministers on the Oil and Gas Law of 2007.

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[361] Ibid, art 31
[362] Ibid, art 42
[363] Tord Kjellstrom and others, 'Air and Water Pollution: Burden and Strategies for Control' in DT Jamison and others (eds), *Disease Control Priorities in Developing Countries* (2nd edn, World Bank 2006) 2-4; Abha Shukla and Singh Cameotra Swaranjit, 'Hydrocarbon Pollution: Effects on Living Organisms, Remediation of Contaminated Environments, and Effects of Heavy Metals Co-Contamination on Bioremediation' in Laura Romero-Zerón (ed), *Introduction to Enhanced Oil Recovery (EOR) Processes and Bioremediation of Oil-Contaminated Sites* (InTech 2012)185
[364] Iraq Ministry of Environment (n 1) 50-51

Based on what was passed by the House of Representatives and endorsed by the President of the Republic, and as per the provisions of item I of article (61), item III of article (73), and article (112) of the Constitution, the following law is hereby enacted:

For the purposes of this law, the following key words and phrases shall have the meanings assigned thereto Article 1 of the Oil and Gas Law of 2011, including:

> 26) Best International Petroleum Industry Practices: Good, safe, environmentally friendly, economic and effective practices in Petroleum Exploration and Production.
>
> […]
>
> 34) Best Practices in Pipeline Management: Good, safe, environmentally friendly, economic and efficient practices in the transport of Petroleum.[365]

This Article indicates that the Iraqi legislator intends this law to promote practices that protect the environment during the exploration for oil and gas and to prevent pollution by any type of contaminants.

In addition to the provisions of the Oil and Gas Law of 2007, this Law places further obligations and responsibilities on the oil companies for causing environmental damage and for compensating those affected in accordance with national laws and international standards. It is noteworthy that while this Article does specify the handling of contaminated water, it does not refer to the treatment of polluted air.

Article 47 stipulates the obligation of oil companies to compensate landowners whose property is damaged:

> First: Land utilization for the purpose of Petroleum Operations shall be in accordance with the Law, and shall consider the following:

[365] المادة 1 من قانون النفط والغاز لعام 2011[Article 1 of the Oil and Gas Law of 2011; translated from Arabic to English by the author]

c. Owners of lands within the Contract Area shall be compensated for damages caused by Petroleum Operations.[366]

This Article has a civil penalty nature based on the violations mentioned in the context of this Article.

However, Article 48 states that:

> The provisions of this law are not applicable to Petroleum refining operations and Gas manufacturing, and the industrial uses of the same; and to storage, transport and distribution of Oil products.[367]

As this chapter has shown thus far, there are numerous laws and provisions which govern the oil and gas industry in Iraq. However, while most of them are not as sophisticated or encompassing as the laws found in most developed countries, some of these laws, had they been properly enforced and complied with, would have given a measure of protection to both the environment and the people who live within close proximity of the oil industry's exploration and production operations.

Over the years, the pollution created by the oil industry in Iraq has not diminished and the attitude of the oil industry has not improved.[368]

3.2.3.4 Civil Law No. 40 of 1951

Injurious conduct "tort" under the Iraq Civil Law is a civil wrong resulting from an act or omission which has caused damage to other persons or property, regardless of whether or not the act or omission constitutes a crime. The general rule in tort liability is founded in Article 216, paragraph 1 of the Iraq Civil Law, which reads as follows:

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[366] Ibid, art 47
[367] Ibid, art 48
[368] Pollack Kenneth M, 'Oil and the Iraqi Civil War: How Security Dynamics May Affect Oil Production' (*The Brookings Institute*, 23 June 2014) <www.brookings.edu/blog/up-front/2014/06/23/oil-and-the-iraqi-civil-war-how-security-dynamics-may-affect-oil-production/> accessed 29 January 2018

> No ab initio or retaliatory injury: the injury will not be eliminated by inflicting a similar injury; a person who has suffered a grievance shall not inflict the same grievance as he had suffered on another person.[369]

This general rule is applicable to all kind of cases claiming damage unless a separate, and more specialised law governs the nature of specific harms. It is important to note that fault is not required in the defendant's conduct. Article 216 of the Iraq Civil Law provides that:

> Every injurious act or omission- shall render the person who commits it liable.[370]

The application of Article 216 of the Iraq Civil Law encompasses three conditions: (i) injurious act or omission, (ii) damage and (iii) a causal link between the injurious conduct and the damage inflicted. The regime adopted by the Iraq legislator can be applied to environmental damage. Importantly, Article 216 is worded so as to cover all kinds of damage, because its emphasis is on the damage rather than on the injurious conduct.

As for environmental damage, the award of damages is not always sufficient, particularly when the damage is permanent or irreversible (e.g. the destruction of habitat for a threatened species or the demolition of a heritage building). However, courts show great reluctance to award an injunctive relief, as they require the foreseen damage to be irreversible and devastating to justify such abatement.

The problem of estimating damage is a common issue in civil litigations. In addition, it may be of particular importance in cases involving environmental damage. However, it remains insufficient in the case of damage being caused to the environment per se or to its amenities, since it is arguable whether translating environmental damage into monetary terms is possible at all.

[369] The Civil Law no 40 of 1951, art 216
[370] Ibid

The traditional rule governing causation may not be suitable if environmental damage is in question. Environmental damage can take a long time to appear, which makes it more difficult to establish the elements of liability within the timeframe set by the law itself. Moreover, there might be uncertainty about whether a certain injury can be attributed to a certain factor; the damage may even be the result of multiple factors that combine in such a way that no clear factor is deemed the cause of damage.[371]

Although this law does not specifically mention air or environmental pollution, some of its Articles identify responsibility for wrongful acts and the damage they cause, including responsibility for environmental damage, and specify punishment for that damage. The relevant provisions therefore require clarification.[372]

According to Article 202:

> Every act which is injurious to persons, such as murder, wounding, assault or any other kind of inflicting injury entails payment of damage by the perpetrator.[373]

In addition, Article 204:

> Every assault which causes other than the injuries mentioned in the preceding Articles entails payment of compensation.[374]

However Article 206 states that:

> 1. The civil damages shall not be prejudicial to imposition of the criminal penalty if its elements have been satisfied.
>
> 2. The court will decide the civil liability and the amount of the compensation (damage) without being bound by the principles of criminal liability or by the judgment rendered by the criminal court.[375]

Moreover, Article 207:

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[371] Shavell Steven, 'Liability for Harm Versus Regulation of Safety' (1984) 13(2) *The Journal of Legal Studies* 357; Richard A Clarke, '"The challenge of going green." *Reader In Business And The Environment* (1994): 45
[372] The Civil Law no 40 of 1951 art 7
[373] Ibid, art 202
[374] Ibid, art 204
[375] Ibid, art 206

In all cases, the court will estimate the damages commensurately with the injury and the loss of gain sustained by the victim if the same was a natural result of the unlawful act.

Deprivation from (loss of) benefits of things will be included in the estimation of the damages and the liability may cover the wage (fee/remuneration).[376]

Article 209:

The court will determine the methods of payment of the damages according to the circumstances; the damages may be payable in instalments or as a revenue in the form of a salary in which case the debtor may be required to provide a security.

The compensation (damages) will be estimated in cash; the court may however depending on the circumstances and upon application being filed by the affected individual, order that the situation be reinstated to its original state or adjudge performance of a certain specified matter or restitution of a similar thing of the fungibles by way of compensation.[377]

Article 211:

A person who has established that the injury has arisen from a cause beyond control such as by an act of God, an accident, a force majeure, by the act of a third party or the fault of the injured himself shall not be liable on damages unless there is a provision (in the law) or an agreement otherwise.[378]

In this Articles 207, 209 and 211, the Iraqi legislator clarifies those cases that will be compensated according to the estimation of the court and how to determine damage, as well as the methods of compensation, including compensation cases, if the person proves that he is not responsible for the damage or that the damage is due to the fault of the injured person himself or to force majeure.

Article 219:

[376] Ibid, art 207
[377] Ibid, art 209
[378] Ibid, art 211

1. Government municipalities and other institutions which perform a public service as well as every person who exploits an industrial or commercial enterprise are responsible for the damage (injury) caused by their employees if the injury resulted from an encroachment committed by them in the course of their service.

2. The employer will be able to relieve himself of the responsibility if he establishes that he had exercised the necessary care to prevent the injury or that the injury would have happened had he exercised the necessary care (caution).[379]

Article 220:

A person who is responsible for the action of a third party is entitled to claim from such third party that which he had paid (in compensation).[380]

Article 231:

Every person who has at his disposal mechanical machines or such other things which require special care for protection against injury shall be responsible for the injury caused thereby unless he can establish that he has taken adequate precautions for preventing this injury without prejudice to any specific provisions in this regard.[381]

Articles 219, 220 and 231 establish the responsibility of governmental institutions for the commission of their actions that cause harm to others, as noted in Law on the Protection and Improvement of the Environment, No. 27 of 2009 as well as the Oil and Gas Law of 2007 and 2011. The legislator of the civil law is clear in these provisions for compensation in the event that third parties cause harm to a third person or cause a technical defect.

Finally, Article 232 provided for the application and expiration of the period of compensation as follows:

[379] Ibid, art 219
[380] Ibid, art 220
[381] Ibid, art 231

> A claim for damage resulting from whatever (kind) of unlawful act shall not be heard after the lapse of three years from the day on which the injured person became aware of the injury and the person who caused it; in all cases the claim will not be heard after the lapse of 15 years from the day of occurrence of the unlawful act.[382]

It is important to mention here, is that victims of air pollution crime may not realise their status as victims.[383] Even where they know what air pollution harm[384] has been done, they may not see themselves as *victims of crime* and they may not report what has happened to the agencies charged with enforcement and protection of the environment. It is often long after the time the crime was committed that the victim becomes aware of having suffered harm.[385]

The tendency for those who have been harmed by an air pollution crime to not to identify themselves as victims is increased by the likelihood that the harm is not immediate, or that it may not be possible to quantify it in financial terms. Victims who do not realise they are victims are likely to seek redress only through the civil law. This can also happen where victims are not aware that society's values have changed, so that air pollution damage is now identified as a crime, though in the past it would not have been.[386]

The fact that victims fail to identify themselves as victims means that there is under-reporting for many forms of air pollution *crime*; add to that the fact that they are not always easy to see and that the impact is not always immediately obvious and the challenges faced by law enforcement agencies will not be clear.[387]

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[382] Ibid, art 232

[383] Victim is defined as an "*entity, human or non-human, which has had its interests set back to its injury*";

[384] Harm is defined as "*any effect that results in altered structure or impaired function, or represents the beginnings of a sequence of events leading to altered structure or function;* Eric Chivian. "*Critical condition: Human health and the environment*." (1993).

[385]Eileen Skinnider, '*Effect, Issues and Challenges for Victims of Crimes that have a Significant Impact on the Environment*' (International Centre for Criminal Law Reform and Criminal Justice Policy2013) 1

[386] Antony Pemberton. "Environmental victims and criminal justice: proceed with caution." *Environmental Crime and Its Victims: Perspectives Within Green Criminology* (2016): 63.

[387] C. M.Spapens, A., White R. D., and Kluin M. "Invisible victims: The problem of policing environmental crime." *Environmental crime and its victims*. (2014): 221-236.

Victims may be unsure about who has caused them to become victims, and who is responsible. Identification of the perpetrator is a pre-requisite for victim remediation, since it both makes criminal investigation possible, and provides a target against whom the victim can proceed for damages under civil law. It can be very difficult to identify the perpetrator and establish criminal liability in environmental cases, as there can be a long, complicated chain from the perpetrator to the fact of the actual harm.[388]

The preceding discussion has sought to demonstrate the link between environmental law and civil law in Iraq because of its importance in the civil courts and to rights-based claims. Civil law is also relevant to cases involving a complaint about the actions of others that are not explicitly mentioned in the environmental laws, as well as the civil law also is relevant because such cases are commonly heard as civils suits rather than as cases brought under environmental legislation.

3.2.3.5 Penal Code No. 111 of 1969, further amended in 2010

Recent attention to the aerobic environment in Iraq encouraged the legislator from including provisions that criminalise actions which constitute an assault on the environment generally and specifically on the air, particularly in the Iraqi Penal Code No. 111 of 1969. The criminal legislature in this law cited provisions to criminalise acts that constitute assault on the air, although they come under different headings, this is unsurprising given that acts which pollute the air have not been specifically criminalised, and it has provided criminal protection of air through dissuasive sanctions against offenders of pollution.[389]

Criminal law is also used in the implementation of the "*polluter pays*" principle. Various Iraqi legislations include criminal provisions to protect the environment. The most effective and important of these is the Iraqi Penal Code No. 111of 1969 and its amendments.

[388]Eileen Skinnider (n 385) 1

[389]99 :(2010) "الحماية الجنائية للبيئة من التلوث - دراسة مقارنة" .شريف وراشد[Sharif and Rashid, '*Criminal Protection of the Environment from Pollution*: A Comparative Study' (Dar Al Nahdha Al Arabia 2010) 99]

The code includes provisions that criminalise some activities which have adverse environmental effects and impose criminal fines or imprisonment or both for non-compliance. These provisions include Articles 491 and 497 of the Code.

Article 491 states that:

> Any person who throws without due care and attention any solid, liquid or gaseous material at another, even though it does not cause any injury' is 'punishable by a period of detention not exceeding 1 month or by a fine not exceeding 20 dinars.[390]

Furthermore, Article 497 provides that:

> (3) Any person who deliberately or negligently causes an escape of gas, fumes, smoke, dirty water or other substance thereby causing harm, irritation or contamination to others [and]
> (4) Any person who is negligent when cleaning or repairing a chimney, oven or factory in which fire is used is guilty of misdemeanour and liable to imprisonment from one to 15 days or a fine of 10 Iraqi dinars.[391]

The amount of custodial penalties assessed on environmental pollution under the Iraqi Penal Code is insufficient, and the Code itself is not adequate to achieve the objective of the protection of the air from criminality, because of its failure to align with the magnitude of the damage caused by crimes that pollute the environment.[392]

In this Law, therefore, there is again the standard 'command and control'-type provision, without alternative modes of enforcement. The penalties have been overtaken by inflation, as is the case with several other environmental enactments discussed before in this Chapter.

[390] Ibid (n 260) art 491
[391] Ibid, art 497
[392] AL-Awaji Mustafa (n 40) 90.

Moreover, Law on the Protection and Improvement of the Environment, No. 27 of 2009 has several provisions (i.e. Articles 33, 34 and 35) that impose criminal sanctions in response to some unsound environmental activities.[393]

The negative effects of the Iraqi Penal Code No. 111 of 1969 reflect its poor performance in protecting the environment from pollution. This is revealed by the absence in the Code of a punitive deterrent against offenders of crimes air pollution, and the lack of follow-up on the implementation of legislation and regulations relating to maintaining the environment, which is one of the main reasons the problem of air pollution in Iraq worsened after 2003.[394]

3.3. Duties and Responsibilities of Environmental Agencies

Responsibility for protecting the environment is shared across a variety of institutions in a hierarchy which includes the Ministry of Environment (MoE). This hierarchy of government institutions has many aims and objectives which includes the sustainability of the nation's natural resources and the implementation of environmental protection regulation by means of a compilation of laws that are, at best, only partially integrated.

According to the Law No. 37/2008 on the Ministry of Environment Article 2 outlines the role and function of the Ministry as follows:

> 1. Establish a ministry called "the Ministry of the Environment" that has legal personality, which represents the Minister of the Environment or other, authorized representative.
> 2. The Ministry of Environment is in charge with the protection and improvement of environment on both national and international levels.[395]

[393]Al Ghurairi Adam (n 42) 382
[394]AL-Awaji Mustafa (n 40) 90.
[395]2008 لسنة (37) رقم البيئة وزارة قانون من 2 المادة [Article 2 of the Ministry of Environment Law No. 37 of 2008; translated from Arabic to English by the author]

This Article provides for the formation of the Ministry of Environment is formed and the appointment of a minister. The protection and improvement of the environment is the main objective of establishing the (MoE) under this law, and according to Article 3:

> The Ministry of the Environment aims to protect and improve the environment to maintain public health, the diversity of natural resources and cultural and natural heritage to ensure sustainable development and to achieve international and regional cooperation in this area.[396]

Article 4 explains how the Ministry will achieve these objectives:

> 1. Submit a proposal to protect the environment from pollution and work to improve the quality of the environment to the Council of Ministers for approval.
> 2. Coordination with relevant authorities in the regions and governorates to implement the policies of the Ministry.
> 3. Issuing instructions and regulations for environmental determinants, monitoring and other safety implementation.
> 4. Consider the regional conventions, treaties and protocols, and international organizations related to the environment and cooperate with them.
> 20) Preparation of draft law, regulations and instructions relating to the protection and improvement of the environment.[397]

In addition, according to the Instruction of Council for the Coordination of Policies and Programs that Affect the Environment No. 1/2005, Article 1 provides and states the authority by which its activities will be supervised:

[396] Ibid, art 3
[397] Ibid, art 4; This Article shows the most important duties of the Ministry of Environment, and these duties may not differ greatly from the role played by the Environmental Protection Council in the others mentioned laws, except paragraph 20 of this article, which authorizes the Ministry to prepare draft laws and issue regulations and instructions and express opinion thereon.

A council should be established in the Ministry of Environment called 'the Consultative Council for the Coordination of Policies and Programs that Affect the Environment' which should be directly under the supervision of the Minister of Environment.[398]

Article 4 outlines the core duties of this Council.

The Council shall exercise the following functions:

1) Provide technical advice on environmental problems;

2) Coordinate the preparation of national programs for the preservation of the environment;

3) Coordinate the preparation of local programs for the management of nature reserves;

4) Express opinions on regional and international conventions and treaties related to the environment;

5) Coordinate the activities of parties concerned with environmental protection.[399]

As is clear from the above-mentioned Articles, this council is performing the same role as the Environmental Protection Council. This overlap will create chaos and confusion over the distribution of tasks to the two councils by the Ministry, and within the Ministry of Environment itself. Hence, the above mentioned bodies have no significant extend of power to implement any provisions, thus, it has no capacity for criminal prosecution for polluters.

Furthermore, according to the Law on the Protection and Improvement of the Environment, No. 27 of 2009, Article 3:

A Council is established under this law and will be known as the Council for Protecting and Improving the Environment and will be attached to the Ministry, which shall be represented by the President of the Council or by a person that he may delegate.

According to Article 6:

1. The Council will meet to:

(a) Hold discussions on environmental issues that have been submitted to it;

[398] مادة (1) من المجلس الاستشاري لتنسيق السياسات والبرامج التي تؤثر على البيئة رقم (1) لسنة 2005 [Article 1 of the Advisory Board for the Coordination of Policies and Programmes Affecting the Environment No. 1 of 2005; translated from Arabic to English by the author]

[399] ibid, art 4

(b) Provide an environmental perspective on plans, projects and national programmes prepared by ministries before they are decided upon and implemented;

(c) Coordination between ministries and designated organs in the preparation of local environmental projects before implementation;

(d) Seek opinions on environmental issues through relations with Arab and international bodies;

(e) Consult the national plan and Ministry plans on emergencies and disasters;

(f) Coordinate and support the activities of ministries and designated organs active in the area of environmental protection;

(g) Support legal regulations on environmental protection and improvement of the governorates;

(h) Cooperate with ministries and designated organs on the preparations linked to the designation of sites of natural and cultural heritage and the nomination of such sites to the world heritage list;

(i) Seek opinions on the annual report on the state of the environment in the Republic of Iraq for submission to the Council of Ministers.

In addition, Article 7:

1. Each governorate will establish a council to be known as the 'Council on the Protection and Improvement of the Environment in the governorates'. This council will be headed by the Governor. The President of the Council will inform its members of the tasks and work they are to carry out.

2. The Council will invite specialists or sector representatives from the public, mixed, private or cooperation sectors to provide advice and information on environmental issues related to their respective sectors. These representatives shall have no voting rights.

We can summarise that the Council for Protecting and Improving the Environment has the same duties and responsibilities with the Instruction of Council for the Coordination of

Policies and Programs that Affect the Environment and the Ministry of Environment except for Article 20 which related to the Ministry of Environment.

It is important to mention here the passage of the Law on Environmental Protection and Improvement, Law No. 76/1986 abrogated the two decisions of the Revolutionary Command Council Nos. 1258/1975 and 750/1978, relating to the formation of the Supreme Body of the Human Environment. The Council for the Protection of the Environment from Pollution replaced this body. The most important characteristic of this Council is that all instructions, decisions and statements issued by it to facilitate the implementation of the provisions of law are binding.[400]

Article 3 provides for the formation of an Environment Council as follows:

> Under this law, a council called the Supreme Council for the Protection and Improvement of the Environment is formed by a President of the Council and linked to the Vice President of the Iraq.[401]

Article 7 sets forth the terms of reference of this Council.

> The Supreme Council exercises the following competencies to achieve the Council's objectives:
> First: To formulate the general policy for the protection and improvement of the environment;
> Second: To determine the controls related to environmental issues
> Third: To express opinion on the international relations of Iraq in the field of protection and improvement of the environment.[402]

Furthermore according to the Article 3 of the protection and Improvement of the Environment Law No. 3 of 1997 refers to the formation of an Environment Council.

[400] المادة 19 من قانون حماية البيئة وتحسينها، رقم 76 لعام 1986[Article 19 of the protection and Improvement of the Environment Law, No. 76 of 1986; translated from Arabic to English by the author]
[401] Ibid, art 3
[402] Ibid, art 7

There shall be established by virtue of this Law a Council in the name of 'Council of Protecting and Improving the Environment' which shall be associated with the Council of Ministers, and shall be represented by its chairman or whoever shall be authorized.[403]

Article 10:

Firstly, the Council of Protecting and Improvement the Environment shall exercise the following:

1) Following up the execution of decisions of the Council and the general policies.

2) Proposing plans to protect and improve the environment, and presenting periodic reports on the activities and the reality of the environment (factual findings) to the Council.

3) The coordination between activities of the authorities concerned with protecting and improving the environment and the rectification of these authorities functionality.

4) Investigating matters connected with the protection and improvement of the environment and taking the decision to halt interim work or closing same for a period not to exceed six months for the enterprises, factories, sections or any activity that has the polluted the environment, and submitting recommendations to the Council in cases where permanent closure is required for any resource due to environment pollution.

5) Inviting any one of the specialists or representatives of any of the State Departments and the public, mixed and private sectors to take advantage of his opinion or explication of environmental matters relating to the authority that he represents.

Secondly, the governorate Council may authorize some of its powers to its chairman.[404]

It is clear from this Article that the duties of this Council are broader than those of the previous Council under Law No. 3/1986.

[403] المادة 3 من قانون حماية البيئة وتحسينها رقم 3 لعام 1997 [Article 3 of the protection and Improvement of the Environment Law No. 3 of 1997 ; translated from Arabic to English by the author]

[404] Ibid, art 10; If we compare this law with the Law No. 76 on 1986, we find that the text of Article 3 of Law No. 76 on 1986 indicates that this Council is subject directly to the control of the Vice President of the Republic; Article 3 of Law No. 3 of 1997 refers to the association of this Council with the Council of Ministers. Here, it has found that there will be overlapping and conflicting duties between both Houses.
It is clear from this Article that the duties of this Council are broader than those of the previous Council under Law No. 3/1986. It worth mention that these Laws are currently invalid and it has been mentioned here for comparison reason between all mentioned bodies duties.

On the other hand based on the provisions of Article 25 of the Law on the Protection and Improvement of the Environment, No. 27 of 2009, Regulation No. 1 of 2015 on the Rules of Procedure of the Environmental Police were issued.

According to Article 25:

> An environmental police unit is formed under this law. It will be administratively attached to the ministry of the interior. Its structure and functions will be subject to the internal administrative regulations issued by the minister of the interior in coordination with the Minister of the Environment.

Moreover, Article 3:

> The following actions will be carried out':
>
> 1. Implementation of judgments, judicial decisions and administrative decisions issued by the Ministry of Environment and related authorities.
>
> 2. Compliance with laws, regulations and environmental regulations.
>
> 3. Provision of the necessary protection to the environmental control teams of the Ministry of Environment in the performance of its duties.
>
> 4. Receiving complaints and communications in coordination with the Ministry of Environment and referring them to the competent investigating judge in accordance with an agreement between the Ministries of Interior and Environment and the law and following up the results.
>
> 5. The exercise of judicial control powers legally granted to police officers and commissioners in relation to environmental crimes.[405]

The regulation makes clear that it assigns the duties and tasks to the Ministry of the Interior, and authorizes the environmental police to implement the judicial decisions and decisions

[405] رقم١لسنة٢٠١٥ البيئية الشرطة لقسم التنفيذية اللائحة المادة٣من [Article 3 of the Rules of Procedure of the Environmental Police No. 1 of 2015; translated from Arabic to English by the author]

issued by the Ministry of Environment against the convicted.[406] This constitutes a polluters of the work of the competent courts in considering legal cases and the role of the aforementioned Environmental Protection Councils.

The reasons for deleterious performance lies in the often conflicting administrative duties and responsibilities of different agencies resulting in failure to carry out their respective duties and obligations.

For example, the Law of Environment Protection states that the Ministry of Environment has authority over all issues relating to the protection of the environment, but the Ministry of Health, Ministry of Oil and other agencies, also are empowered with the duty of protecting the environment and combating pollution.

The Ministry of Health assumed the responsibility of executing the regulations relating to the combating pollution. It continues to be the proper authority for combating pollution. Yet this conflicts with Ministry of the Environment which has exactly the same powers. Similarly, the Ministry of Oil is responsible for ensuring that pollution arising out of their activities or any of their subsidiaries are minimised and that steps are taken to reduce adverse effects of their economic activities. Thus, there can be a diffusion of responsibility and grey areas which can result in failures to properly take action in the convenient belief that it is the responsibility of the other.

Personnel with roles in environmental agencies often lack technical knowledge or equipment. Many prosecutors in Iraq are inexperienced, young lawyers who are often 'thrown in the deep end'.[407]

[406] Similarly in the French system, OCLAESP is a specialised inter-institutional unit created in 2004, as a service of judicial police with a national competence, which is in charge of investigations of environmental crime, public health crimes and doping. The task of OCLAESP is to conduct and coordinate criminal investigations, to observe and analyse the most typical behaviour of offenders, to centralise information, to participate in training and information exchange, and to handle international requests for assistance (Europol, Interpol) relating to the areas of crime it covers. Moreover, in cases involving organised crime, OCLAESP may draw on special investigation powers. In 2012, the Office dealt with several investigations related to the management of hazardous waste, pollution and recycling of end of life vehicles, the protection of fauna and flora and traffic of plant protection products; Philipsen, N. J., M. G. Faure, and K. Kubovicova (n 233) 56.

However, the efficiency of various institutions is often determined by the financial systems which are in operation. Generally, there is a single unified financial system but these can differ in practice between different bodies and even different.[408]

Some departments are spending money, which was originally allocated for environment protection endeavours but have been reallocated to areas such as education, health and welfare, which were deemed more worthy of funding allocation.[409]

It is important to mention here, Iraq's Prime Minister, Haider al-Abadi, in a campaign to reduce corruption and mismanagement in the highest reaches of government, ordered an immediate reduction in the number of ministers to 22 from 33. One of the consequences of this action was the integration of the Ministry of Environment with the Ministry of Health.[410]

This merger led to overlap and conflict between the duties of the Head of the Department of the Environment into the Ministry of Health with other departments. Furthermore, the Minister lost its power to facilitate and implement this law and legislation of the provisions in times of need. In addition, this decision indicates the relative unimportance of the Ministry of Environment and the lack of seriousness on the part of the government in protecting the environment and human beings.

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[407] منديل اسعد,احكام المسؤولية المدنية الناتجة عن الأضرار البيئية, مجلة كلية القانون, جامعة القادسية (2013)1-2
[Asaad Mandel, Civil Liability Provisions Resulting from Environmental Damage, *Journal of the Faculty of Law, University of Qadisiyah* (2013) 1-2 translated from Arabic to English by the author]

[408] Ibid; United Nations Environment Programme (n 293) 64.

[409] (علي الفيل, دراسة مقارنة للتشريعات العربية الجزائية في مكافحة جرائم التلوث/مجلة الزرقاء للبحوث والدراسات ,الاردن,(2009
[Al-Fil Ali, Comparative Study of Arab Legislation in the Control of Pollution Crimes / *Al-Zarqa Journal for Research and Studies*, Jordan, (2009translated from Arabic to English by the author]

[410] 'Iraq's Abadi Cuts 11 Ministerial Positions in Reform Push' (*Reuters*, 16 August 2015) <www.reuters.com/article/us-mideast-crisis-iraq-reforms/iraqs-abadi-cuts-11-ministerial-positions-in-reform-push-idUSKCN0QL0S620150816> accessed 29 January 2018

3.4. Evolution of International Conventions and Treaties on Environmental Protection Approved by Iraq

Iraq has an obligation in terms of Article 33 of the Constitution to protect the environment, as individuals have a right to an environment not harmful to their health or well-being.

The State also has an obligation in terms of international law to protect the environment. This obligation arises from the various treaties and conventions which strive to protect the environment and to which Iraq is a signatory.

Iraq has agreed to numerous instruments and conventions on air pollution abatement globally and regionally. Among the significant global instruments to which Iraq is a co-signer is the United Nations Framework Convention on Climate Change (UNFCCC). The leading norm in the field of international environmental law in the context of Iraq is Principle 21 of the Stockholm Declaration, which states that:

> States have [...] the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdictions.[411]

A state has a duty to notify and consult other states if it plans to undertake an activity likely to harm the environment of another country.

Iraq environmental policy and laws have thus to be in tune with its international commitments. This may require structural changes in the environmental policies and laws of Iraq. Moreover, different legal systems have very different relationships between their national law and international law. International tribunals as well as the mediation of relations between states see international law as supreme. It follows that no violation of international

[411] Principle 21 of the 1972 Stockholm Declaration on the Human Environment

law can be excused by reference to national law. There is a law of state responsibility that says that every breach by a state of an international obligation of that state gives automatic rise to a duty both to compensate for injuries caused by the breach and to end the breach[412]; this is true whatever national law may say.[413]

There may be provisions in the constitution that make international law legally binding on the state and capable of being applied by its courts.[414] International law that has been made binding by legislative procedure or executive order may have a variety of rankings. It can be equivalent to constitutional law, or it can be equal to national legislation, or it can be either above or below that level. The question will be decided on the basis of the

[412] However, there are a number of cases where the international and regional human rights mechanisms have been used to seek justice for environmental victims but failed. A group of Canadian citizens alleged that the storage of radioactive waste near their homes threatened the right to life of present and future generations. Although the Committee found that the case raised a serious issue with regard to the obligation of States Parties to protect human life, the case was inadmissible due to failure to exhaust local remedies. In EHP v. Canada, (Communication No. 67/1980). See also Glick Richard D., "Environmental Justice in the United States: Implications of the International Covenant on Civil and Political Rights" (1995) 19 *Harv. Envtl. L. Rev*. 69). The Human Rights Committee ruled that the right to life encompasses some duty to protect human life from environmental hazards that threaten health and longevity. Victims in Canada also have applied to regional human rights mechanisms seeking remedies for environmental damage. For example, a petition has been addressed to the Inter-American Commission on Human Rights from representatives of the Inuit Circumpolar Conference who are seeking relief from the United States for the adverse consequences of climate change on their health and livelihoods. Jamie Benidickson, and others eds. *Environmental law and sustainability after Rio*. Edward Elgar Publishing, 2011.
European victims have had recourse to the European Court of Human Rights to pursue remedies for violations to their right to a clean and healthy environment. The Court noted that the right of respect for private and family life can apply to environmental cases, regardless of whether the pollution is directly caused by the State or caused by the failure of the State to regulate private-sector activities properly. Lopez Ostra v Spain 16798/90 [1994] ECHR 46 (9 December 1994). The Court has also upheld that the right to a fair hearing might be violated in cases where home owners experienced excessive lengthy administrative proceedings to determine the level of responsibility for defendant businesses with respect to the noise and pollution that, over the years, caused serious and long term health problems. *Leon and Agnieszak Kania v Poland*, Application no. 12605/03 (September 2009). *Zander v Sweden* [1993] IIHRL 103 (25 November 1993) was another right to fair hearing case. In that case the Court has also applied article 6, right to a fair trial, as a basis for finding that the applicants had been denied a remedy for threatened environmental harm, which concerned their ability to use the water in their well for drinking purposes; Eileen Skinnider (n 175) 46-47.

[413] Marsden Simon, *Strategic Environmental Assessment in International and European Law: A Practitioner's Guide* (Earthscan 2012) 32; Ip Eric C, 'Globalization and the Future of the Law of the Sovereign State' (2010) 8(3) *International Journal of Constitutional Law* 636; Kanetake Machiko, 'The Interfaces Between the National and International Rule of Law: The Case of UN Targeted Sanctions' (2012) 9(2*) International Organizations Law Review* 267; Whytock Christopher A, '*From International Law and International Relations to Law and World Politics*' (2016) <www.law.uci.edu/faculty/full-time/whytock/whytock-il-021216b.pdf> accessed 29 January 2016; Sloss David L, Ramsey Michael D and Dodge William S (eds) *International Law in the US Supreme Court* (CUP 2011) 11-14

[414] Anton Donald K and Shelton Dinah L, *Environmental Protection and Human Rights* (CUP 2011) 64-65; David Kennedy, 'The Sources of International Law' (1987) 2 *American University Journal of International Law & Policy* 1

hierarchy of legal sources in the particular nation which, if the country has a constitution, will usually be set out in it. How far an international law norm can be given effect in a national court is therefore dependent on whether and how international law norms are integrated into the constitution, and on the country's legal system.[415]

The Iraqi Treaty Law No.35 of 2015(1) provides that the negotiating and signing of all international agreements is the responsibility of the Executive Authority. An international agreement binds the Republic after it has been approved by resolution in both the Parliament and the Council of Ministers. This means that a treaty becomes law in the Republic only when it is enacted into law by national legislation; therefore an international treaty or convention is not binding in Iraq unless it has been enacted into national law.

Unfortunately, Iraq did not take measures that ensure that international environmental law within the national environmental law is properly enforced and that individuals, companies, and industry comply with international environmental law.

The relationship between national and international environmental law is increasingly important and increasingly acknowledged, and it is increasingly understood that effective enforcement of national environmental laws is required if the international environmental law is to be effective.

3.4.1 Law No. 7/2008 on Accession to the United Nations Framework Convention on Climate Change (UNFCCC)

While acknowledging that changes in climate are natural, the adverse changes in the climate and their deleterious effects on the environment were clearly recognised by the UN Framework Convention in 1992, which came into force in 1994 (UNFCCC, 2010) and whose aim was to avert 'dangerous anthropogenic interference' that occur in the environment.

[415]Dinah Shelton and Alexandre Charles Kiss (n 299) 12, 13, 15

A framework convention was endorsed by UNCED in 1992 to protect the world's climate system, most notably against the effects of greenhouse gases and their warming influence. Developed nations are required to reduce their emissions of carbon dioxide and other greenhouse gases to 1990 levels or below. Since then, a succession of international conferences has followed in Berlin, Geneva, Bonn, Kyoto and Buenos Aires. The Intergovernmental Panel on Climate Change (IPCC) remains the principal advisory body.

Article 3(3) of the Law on Accession asserts the wisdom of taking precautions in order to minimise if not altogether prevent the adverse effects of climate change. Articles 4 and 12 detail the obligations incumbent on all parties: i.e. the development, periodic updating and publication of national assessments of anthropogenic emissions and sinks. When that has been done, regional and national programmes must be formulated and implemented, and they must contain measures to reduce the impact of climate change and to promote emission control. Emission control measures must include technology transfer, the promotion of sustainable sinks and reservoirs, management of greenhouse gases, the elaboration of integrated plans for managing coastal zones and research collaboration.[416]

It is clear from the Articles 4 and 12 that states parties have implemented their obligations. Since Iraq has ratified this agreement, it should abide by it, but it is clear that Iraq is currently suffering from the problem of merging international and national legislation.

However, in the absence of agreed regional standards, it is doubtful that Iraqi laws alone are sufficient to protect the environment due to the close proximity of Middle Eastern countries. Therefore, Iraq believes that regional cooperation is inevitable to handle certain pressing environmental problems in the Middle East, such as water shortages and other demographic dilemmas. This belief is the reason why Iraq is a signatory to the regional environmental treaties discussed below.

[416] Jones D, 'Dictionary of Environmental Law – Alan Gilpin' (2001) 8(1) *Australian Journal of Environmental Management* 169

3.4.2 Regional Convention for Cooperation on the Protection of the Environment between Iraq and Syria 2007

The purpose of this agreement is to facilitate institutional, legislative and technical cooperation between the two countries in the fields of environmental protection, and in the exchange of experiences, the development of skills for dealing with cases of pollution of the environment from oil, and others and the safety of its citizens.

The following are the provisions of the Articles relating to the protection of the environment, including air pollution.

The Syrian Government and the Government of Iraq hereinafter referred to as "the Parties",[417] the parties agreed on the following:

According to Article 1:

> The Parties shall endeavour to develop bilateral cooperation in the field of environmental protection based on equality of rights and mutual duties in the framework of their respective laws.[418]

However, Article 2 states that:

> The Parties shall facilitate the establishment and development of cooperative relations between public and private bodies in the field of environmental protection.[419]

Finally, Article 4:

> The Parties shall endeavour to consolidate cooperative relations in the field of pollution treatment resulting from industrial, agricultural and service activities, air safety, chemical

[417] 2007 ديباجة الاتفاقية الإقليمية للتعاون فيما يتعلق بحماية البيئة بين العراق وسوريا عام [Preamble to the Regional Convention on Cooperation on Environment Projection between Iraq and Syria of 2007; translated from Arabic to English by the author]

[418] Ibid, art 1

[419] Ibid, art 2

safety, pollution from oil and any other environment-related area determined by mutual agreement.[420]

3.4.3 Law No. 14 for the Year 2015 Ratification of the Convention in the Field of Environmental Protection between the Government of Iraq and the Government of Kuwait 2013

For the purpose of cooperation in the protection and improvement of the environment, the Government of Iraq and the Government of the State of Kuwait agreed on the following:

According to Article 1:

> This agreement is a framework for cooperation between the two parties in the fields of protection and rehabilitation of the environment, the conservation of natural resources and sustainable development.[421]

In addition, Article 2:

> In order to achieve the objectives of this agreement, both parties will seek to promote bilateral cooperation between their public and private sector institutions in the field of the environment. The two facilitate parties also seek to coordinate their positions on environmental issues and other global activities.[422]

However, Article 3 states that:

> The parties agree to deliver this agreement to the public sector in the field of environmental protection in both countries, in accordance with the previous two Articles, and they must identify areas which are to be the subject of special cooperation between both parties, and how it can be achieved.[423]

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[420] Ibid, art 4

[421] المادة 1 من الاتفاقية في مجال الحماية البيئية بين حكومة جمهورية العراق وحكومة الكويت [Article 1 of the Convention in the Field of Environmental Protection between the Government of Iraq and the Government of Kuwait; translated from Arabic to English by the author]

[422] Ibid, art 2

[423] Ibid, art 3

Finally, Article 4:

> Both parties seek to strengthen cooperation in the following environmental areas:
>
> […]
>
> 10) Exchange of environmental studies and research in the field of air pollution and the protection of the atmosphere.
>
> […]
>
> 14) Development of environmental legislation.[424]

It has been noted that 'the difficulty in pursuing environmental governance on a universal scale is compounded by the fact that there is no central institutional "sovereign" to craft sweeping environmental protections at the international level and to insist on compliance'.[425] Another factor is that the mere signing or adoption of an international legal instrument by the Iraqi Government does not suffice to invest that instrument with the force of law in Iraq, except where such legal instrument has been ratified or domesticated by the parliament.[426] The process of ratification or domestication is typically slow and may take several years. This creates a situation whereby international legal instruments on pollution abatement cannot be directly invoked or applied in environmental protection cases. There is also a high probability that the general principles of such international legal instruments, such as the "polluter pays", the precautionary principle, public participation and public access to environmental information, may be watered down during the process of ratification or domestication. This gives rise to situations where domesticated international legal instruments will not be fully committed to the principles of international environmental law.

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[424] Ibid, art 4

[425] Olowu Dejo, 'Environmental Governance Challenges in Kiribati: An Agenda for Legal and Policy Responses' (2007) 3 *Law Environment & Development Journal* 259

[426] Enabulele AO and Imoedemhe CO, 'Unification of the Application of International Law in the Municipal Realm: A Challenge for Contemporary International Law' (2008) 6 *Electronic Journal of Comparative Law* 1, 6

As well as these matters, the Constitution of Iraq contains no other specific provisions relating to how international conventions and domestic laws should mesh. In contrast, for instance the Jordanian Government has ratified many of these agreements, and considers them as main sources for the Jordanian Environmental legislative framework. Article 5 of the Jordan Environmental Protection Law No. 52 of 2006 explicitly stresses the implementation of these agreements. This Article states:

> The Ministry, in cooperation and coordination with bodies concerned with environment matters on the local, Arab and international levels, shall be responsible for protecting the elements and components of the environment from pollution and shall endeavour to execute agreements concerning environment matters.[427]

There exists, therefore, a need to incorporate this Convention into Iraq's legal system to ensure that it is applied correctly and promptly. In this regard, there are two crucial points that must be clarified: first, the constitutional authorities which have the power to ratify international treaties and second, and the legal status of international treaties in the Iraqi jurisdiction.

In conclusion, the status of international environmental treaties in relation to Iraqi environmental law remains unclear. To compound matters, there is no rule provided by the Iraqi Constitution or the Iraqi Court of Cassation concerning the legal status of international environmental treaties and whether or not they should be automatically considered as a part of domestic law and consequently should prevail over conflicting domestic legislation.

[427] Al-Sharari, Saleh (n 320) 16.

3.5. Conclusion

The purpose of this chapter was to present a detailed analysis of Iraq's legal framework for the protection of the environment from air pollution.

Iraqi laws on environmental protection from air pollution overlap and sometimes conflict when dealing with environmental violations. The result is confusion over which law applies, and delay in sentencing. In addition, the fines laid down in the laws are, for the most part, inadequate with regard to the seriousness of the offenses and fail to fulfil their purpose of keeping violators from committing environmental offences. Environmental polluters pay their fines without argument and without great loss.

A challenge that hinders enforcement of the Environmental Protection Law is the jurisdictional overlap with other Iraqi Laws that also deal with environmental issues and that set down conflicting punishments. For example, Articles 32, 33 and 34 of the Law to Protect and Improve the Environment in Iraq No. 27 of 2009, stipulates that violation of the provision relating to environmental pollution the fine must not be less than 1 million or more than 10 million Dinars. The violator must also pay compensation and remove the violation. On the other hand, the Public Health Law No. 89 of 1981 Article 96 sets a maximum fine for environmental damage of 250,000 Dinars, and does not make the violator pay compensation.

It is worth mentioning here that Article 104 of this law states that:

Any legal provision contrary to the provisions of this law shall not be applied within the scope of its objectives, which means that it is up to the Courts to decide on the adequate punishment.

Environmental crime has not been determined or consolidated into a single law but is found in a range of separate pieces of legislation. Some of the most frequently used criminal sanctions are found in the Law on the Protection and Improvement of the Environment,

No.27 of 2009 and of the Iraqi Penal Code No. 111 of 1969, legislation differ in their stringency and level of enforcement between different types of crimes with indeterminate.

The Penalties set out in Iraq's Law of the Environment are no longer sufficient to keep pace with the rate of urban and industrial development or with increasing violations, in addition to which Iraq lacks suppressive environmental laws. Iraq's judicial system needs to be more assertive concerning crimes that affect both the environment and public health.

According to Iraq legislation, the fines imposed on the polluters have a criminal or administrative nature. That said, the fines dictated by these laws are not sufficient to deter polluters and are unlikely to create economic incentives to adopt environmentally friendly practice. Instead, their triviality may encourage polluters to continue to pollute, as the amount of the fine for an environmental offence may be considerably less than the cost of reducing or eliminating the environmentally harmful activity. The imprisonment as well as dictated by these laws are not sufficient to deter polluters.

Environmental crime has not been determined or consolidated into a single law but is found in a range of separate pieces of legislation. Some of the most frequently used criminal sanctions are found in Law on the Protection and Improvement of the Environment, No. 27 of 2009 and in the Iraqi Penal Code No. 111 of 1969, yet these two pieces of legislation differ in their stringency and level of enforcement between different types of crimes with indeterminate.

The Iraqi government also has an obligation in terms of international law to protect the environment. This obligation arises from Law No. 7/2008 on Accession to the United Nations Framework Convention on Climate Change as well as from the various treaties and conventions which strive to protect the environment and to which Iraq is a signatory.

Although environmental protection is legally the task of the Ministry of Environment, there remains ambiguity among different government bodies about responsibilities and duties

concerning environmental protection. Mostly this is because of the duality, overlap and contradiction in Iraqi laws, creating confusion in handling issues and problems related to the environment.

A number of institutions have overlapping jurisdictions and conflicting mandates, fragmenting the capacity to respond. Existing laws fail to assign the federal, governorate or district level responsible for effectively responding to pollution, while a number of laws refer to institutions that no longer exist.

CHAPTER FOUR
TYPES OF ENFORCEMENT OF PENALTIES OF AIR POLLUTION UNDER IRAQI ENVIRONMENTAL AND NON-ENVIRONMENTAL LAWS

4.1. Introduction

Despite the rhetoric surrounding damage to the environment, the literature reveals that offenders are generally treated with leniency by the law courts globally.[428] Many authors attribute such leniency to the fact that the real effects of environmental crimes are poorly understood. Environmental crimes receive less attention than other classes of crime such as drug crimes or sexual offences.[429] This indicates that court actors (i.e., prosecutors and judges) are less knowledgeable about the nature and extent of the damage caused by environmental crimes and consequently, are more likely to err on the side of leniency in dealing with such crimes.[430]

The perception in Iraq is that, penalties are inadequate, which, if true, would serve to undermine these goals.[431]The purpose of this chapter is to assess, first, whether this perception is correct.

Following that assessment, the chapter focuses on the penalties which companies and their co-defendants incur for infringements of environmental laws. This includes a survey of

[428]O'Hear Michael M, 'Sentencing the Green-Collar Offender: Punishment, Culpability, and Environmental Crime' (2004) 95 *Journal of Criminal Law & Criminology*133; Genevra Richardson, Ogus Anthony, and Burrows Paul. "Policing pollution: a study of regulation and enforcement."*Policing pollution: a study of regulation and enforcement*. Clarendon Press, (1982):283-298.

[429] Avi Brisman,. "The violence of silence: some reflections on access to information, public participation in decision-making, and access to justice in matters concerning the environment." *Crime, Law and Social Change* 59, no. 3 (2013): 291-303.

[430]Joshua C Cochran, and others. "Court sentencing patterns for environmental crimes: Is there a "Green" gap in punishment?." *Journal of Quantitative Criminology* 34, no. 1 (2018): 37-66; Reece Walters,, and Westerhuis Diane Solomon. "Green crime and the role of environmental courts." *Crime, Law and Social Change* 59, no. 3 (2013): 279-290.

[431] Hamid Abdul, Talal Salma, and Abdul Hadi Sarmed Reyad. "The Effectiveness of Environmental Legislation Inraq." *Al-Hiqouq- Al-Mustansyriah University* 5, no. 21 (2013): 122-139.

the full range of penalties which are available for the enforcement of these laws in order to assess their impacts or deterrent effects.[432]

Underlying this analysis is the conviction that infringements of environmental laws are serious matters calling for appropriate retributive sanctions and deterrents. This will help to understand whether the penalties for contravention of environmental legislation sufficient to meet these goals or not. There is no information in Iraq of penalties that have been imposed by the Courts, but information that there is, supported by anecdotal evidence, suggests that penalties (fines) imposed have been on the low side. There are no reported cases dealing with sentences of imprisonment (other than as an alternative to a fine) for environmental offences. Attempts at obtaining information and statistics relating to convictions and sentences imposed in Iraq for environmental offences have proved largely fruitless, hence the rather vague comments made about actual sentencing practices in Iraq.

For this reason, it will be useful to consider alternative penalties, those already in existence in developed countries and then those sentencing practices that are not currently provided for by our law, for both individual and corporate offenders.

Some attention is also given to the rules governing the imposition of various penalties and covers situations such as causing pollution without a licence or breaches of licence conditions. A range of sanctions is available to authorities including the issuance of warnings, imposition of financial penalties, revocation of licence and closure of the offending plant and the confiscation of assets. The state also has other sanctions available which include time restraints within which the offending activity must be corrected or, ultimately, the seizure of assets or complete closure of the offending company.

Environmental crime penalties have not been determined or consolidated into a single law but is found in a range of separate pieces of legislation. Some of the most frequently used

[432] Ibid.

criminal sanctions are found in Law on the Protection and Improvement of the Environment, No. 27 of 2009 and in the Iraqi Penal Code No. 111 of 1969, yet these two pieces of legislation differ in their stringency and level of enforcement between different types of crimes with indeterminate. In addition, some of the civil and administrative sanctions are found in Law No. 89 of 1981 on Public Health as amended, Oil and Gas Law of 2007 or 2011 and Civil Law No. 40 of 195.

Types of criminal penalties: fine and imprisonment for continuing offence, fine and imprisonment equivalent to the value, imprisonment, forfeiture, community service, adverse publicity and conviction. Types of civil penalties include compensation order, reparation order and redress facilitation. Types of administrative penalties include revocation of licence or permit, fines, forfeiture, managerial intervention, equity fines, prohibition of indemnification of corporate officers, disqualification from government contracts and prohibition of the further development.

4.2. Penalties provided and applied in Iraqi environmental laws

The 'default' penalties usually provided in Iraqi legislation are fines and imprisonment. These penalties will be discussed here but also other penalties that are provided by environmental and non-environmental legislation. These alternative penalties are usually supplementary to the primary penalty of fine or imprisonment, as is indicated below.[433]

4.2.1 Fine and imprisonment for continuing offence

A useful provision is one which provides for the imposition of a specified fine per month and imprisonment if the offence continues. This would give the offender ample

[433] Al-Fil Ali (n 409) 110

incentive to put a stop to the contravention as soon as possible.[434] This device is used in Article 33 of the Law on the Protection and Improvement of the Environment No. 27 of 2009.[435]

> 2. In line with the regulations mentioned in paragraph 1 of this article, the Minister, or someone that he may delegate (but holding no less a rank than General Manager) can impose a fine of no less than 1 million dinars[436]. The fine shall not exceed 10 million dinars and may be renewed each month until the infraction specified in this law no longer exists, as well as other notifications or announcements that have been issued in this respect.

Article 34, provides the option of imprisonment in the absence of redress:

> 2. Punitive measures will be doubled for each repeat offence.[437]

In addition, the Article 99of Law No. 89 of 1981 on Public Health as amended:

> 1. Without prejudice of any severe punishment forenamed in other laws, the dissenting of the rules of this law, regulations and instructions issued according to it, is punishable by imprisonment for a period not less than one month and no more than two years, and in case of repeated violation, he shall be subject to imprisonment and withdraw the licence permanently.[438]

4.2.2 Compensation order

Statutes often provide for a criminal court, having convicted the accused, to have the power to enquire into loss or harm suffered by the victim and to order compensation.

The advantage of this is that it obviates the need for a second civil trial aimed at compensation.[439]

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[434]Al-Budairi Ismail and Ibrahim Hawra (n 4) 89
[435]Ibid (n 21) art 33(2)
[436] Approximately GB £594
[437] Ibid (n 21) art 34 (2)
[438]المادة99 وتعديلاته 1981 لسنة 89 رقم العامة الصحة قانون من (8) [Article 99(1) of the Public Health Law No 89 of 1981 as amended; translated from Arabic to English by the author]
[439]Al-Budairi Ismail and Ibrahim Hawra (n 4) 92-93;الحماية, الجمال سمير القانونية النهضة دار, للبيئة (2007 القاهرة, العربية)

In the environmental context, probably the most important provision in this regard is section 32(1) of the Law on the Protection and Improvement of the Environment No. 27 of 2009.

The provisions read as follows:

> Individuals are personally responsible for their actions, negligence or shortcomings in the conduct of tasks falling within their care, as well as for monitoring or controlling their personnel. This includes non-compliance with or violations of the laws, regulations and notifications relating to environmental damage. Shall be obligated to pay compensations, remove the damage within a suitable period and return the situation to the conditions prior to the damage happened by his own methods and within the timeframe indicated by the Ministry.

Article 24 of the Oil and Gas Law of 2011stipulates that:

> First: License Holders shall in managing Petroleum Operations comply with the following:
>
> j. Compensate those affected by the Petroleum Operations activities in accordance with the law.[440]

Article 31of the Oil and Gas Law of 2007:

> In addition to carrying out their Operations in accordance with Good Oil Field Practices, INOC [Iraq National Oil Company] and other holders of Exploration and Production rights shall conduct Petroleum Operations in accordance with environmental and other applicable legislation of Iraq to prevent pollution of air, lands and waters. They shall also conduct

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[Al-Gammal Samir, Legal Protection of the Environment, Dar Al-Nahda Al-Arabiya,Cairo (2007)215translated from Arabic to English by the author]; For instance the Egyptian Environmental Law did not establish a special system to compensate for environmental damage, but only to apply the general rules of civil liability and international agreements, as mentioned above, to redress traditional and environmental damage caused by various pollution incidents. It also states that "the protection of the aquatic environment from pollution shall be aimed at achieving the following purposes ... (d) compensation for damage to any natural or legal person caused by pollution of the aquatic environment ...". It is clear to us that the Egyptian legislature has approved compensation for the environmental damage resulting from violating the provisions of this law as a civil penalty through the application of the general rules contained in international laws and conventions.

[440] المادة242011 من قانون النفط والغاز لعام [Article 24 of the Oil and Gas Law of 2011; translated from Arabic to English by the author]

Petroleum Operations to comply with the environmental management standards of the ISO 14000 series, as amended. In general, they shall carry out Petroleum Operations in order to:

9) Provide compensation for damages to State and private property in accordance with the applicable laws and regulations.[441]

According to Article 202 of the Civil Law No 40 of 1951:

Every act which is injurious to persons, such as murder, wounding, assault or any other kind of inflicting injury, entails payment of damage by the perpetrator.[442]

Article 204 of the Civil Law No 40 of 1951:

Every assault which causes other than the injuries mentioned in the preceding Articles entails payment of compensation.[443]

Article 19 of the Regulation No. 4 of 2012 for the Protection of Ambient Air Quality provides that:

The owner of the source of pollution polluting the air shall bear the cost of damage to the environment and health and its removal and compensation of the injured party if it is proved that the contamination exceeded its limits.[444]

Such provisions are important in that they are aimed (at least in part) at the remediation of environmental damage,[445] which is in keeping with the general aims of environmental law.[446]

[441] Oil and Gas Law of 2007, art 31
[442] The Civil Law No 40 of 1951, art 216
[443]Ibid, art 204
[444] the Regulation No. 4 of 2012 for the Protection of Ambient Air Quality, art 19
[445] With regard to the application of this penalty in the Iraqi Environmental Protection Law No.27 of 2009, it states that "any person who is caused by his own act any harm to the environment shall be compensated ..."
In this text, we can say that the damage caused by environmental pollution has a special effect, so the Iraqi legislator should have given the issue of compensation more attention by subjecting them to special rules that are broader and more comprehensive than the above mentioned text.
[446] The Egyptian Environmental Law also states that compensation includes restoring the case to its previous state before the damage, it states that "Means compensation for all damages resulting from pollution incidents resulting from violation of the provisions of the laws as well as international conventions to which the Egypt is part of, or from accidents involving pollution from toxic substances and other harmful substances, air pollution, ship accidents, collisions or accidents during shipment or unloading, or any other incidents. Compensation includes reparation for conventional and environmental damages and the cost of restoring the environment. It also states that "the penalty shall be imprisonment and fine ... with the offender's obligation to pay the expenses of removing the effects of the violation in accordance with what is determined by the authorities responsible for the removal of anyone who violates the provisions of Article (54 / B) of this law.

A pertinent example is the Environmental Law of the Emirates which permits for civil liability in the event of environmental damage and asserts the rights of affected parties to claim compensation even if the pollution is primarily affecting only the environment itself. Article 71 of the Emirate Environmental Law states that:

> Any person who, intentionally or by way of negligence causes damage to the environment or others as a result of violation of the provisions stated in this Law or the orders or resolutions issued for its enforcement, shall be held responsible for all the costs of treatment or removal of such damages and any compensation incurred as a result.[447]

Moreover, Article 72 went on to provide that:

> The compensation for the environmental damage referred to under article (71) of this Law, shall include the damages which affect the environment in such a way that prevents or reduces temporary or permanent lawful use or damages the economic and aesthetic value as well as the cost of the environmental rehabilitation.[448]

In a case where, following an assessment of environmental impact, a licence application is rejected, there is no notification of an appeal process but simply a notification of the decision and the grounds for denying the granting of the licence. In contrast, Jordanian law grants the applicant the right to appeal against the decision.[449]

[447] In the UAE, the environmental law committed the violator to pay all costs necessary to remove the effects of the violation. In which case it is stated that "the judicial control officers shall have the right to receive immediate amounts temporarily under the account of the enforcement of the fine or compensation ... plus all the expenses and compensation determined by the competent authorities in agreement with the Ministry to remove the effects of the violation ..." In another text, it states that "anyone who causes or neglects to cause damage to the environment ... shall be liable for all costs necessary to remedy or remove such damage ...".

[448] The Federal Constitution of the United Arab Emirates for the year 1971, Available in English at: http://www.uaecabinet.ae/English/UAEGovernment/Pages/Constitution of UAE.aspx

[449] Abdelnaser Hayajneh. "Legal Protection for the Environment in Jordan and the United Arab Emirates: Comparative Outlinel." *British Journal of Humanities and Social Sciences* 7, no. 2 (2012): 79-80.

4.2.3 Reparation order

Similar to the order for compensation discussed above, certainly as far as the aims are concerned, but using a slightly different method, is what can be called a reparation order.[450]

Instead of a court ordering the convicted person to pay monetary compensation, this order requires the individual to carry out the reparations himself or herself. This device is used in the Law on the Protection and Improvement of the Environment, No. 27 of 2009, in conjunction with an order for compensation provision in the case of default of the reparation order.

A good way of providing for this type of device is to link it to the power of the authorities concerned to take the necessary steps in default of the offender and then to claim the costs.

Article 32 of the Law on the Protection and Improvement of the Environment, No. 27 of 2009 refers to the responsibility of individuals who cause environmental damage to repair this damage, as described in Article 32:

> 1. Individuals are personally responsible for their actions, negligence or shortcomings sub-gradients who are under his auspices, supervision, as well as for monitoring or controlling their personnel. This includes non-compliance with or violations of the laws, regulations and notifications relating to environmental damage. Shall be obligated to pay compensations, remove the damage within a suitable period and return the situation to the conditions prior to the damage happened by his own methods and within the timeframe indicated by the Ministry.[451]

Article 32 of the Law on the Protection and Improvement of the Environment, No. 27 of 2009 provides that,

[450] Al-Budairi Ismail and Ibrahim Hawra (n 4) 92-93; Al-Gammal Samir (n 439) 215
[451] Ibid (n 21) art 32 (1)

2. In the case of negligence and shortcoming or the unwillingness to abide with what has been stated in clause one of this Article, the Ministry will take all necessary steps and measures to ensure that the damage is repaired, and the environment returned to its previous state. Administrative costs will be added to the costs of the above on the basis.[452]

Article 19 of the Regulation No. 4 of 2012 for the Protection of Ambient Air Quality provides that:

The owner of the source of pollution polluting the air shall bear the cost of damage to the environment and health and its removal and compensation of the injured party if it is proved that the contamination exceeded its limits.[453]

Failure to comply with such an order entitles the authority in question to take the necessary steps itself and to recover the costs from the defaulting party.

The reparation order is an effective measure for the same reasons given in favour of the compensation order above. It could well be combined with a compensation order by the provision of a reparation order that has to be complied with within a specified time, failing which a compensation order would take effect.

4.2.4 Fine and imprisonment equivalent to value

This device is currently used only in the Law on the Protection and Improvement of the Environment, No. 27 of 2009.[454]

Article 34, provides that:

2. Punitive measures will be doubled for each repeat offence.

This measure is an important deterrent in cases involving crime motivated by profits.

[452]Ibid (n 21) art 32 (2)
[453]The Regulation No. 4 of 2012 for the Protection of Ambient Air Quality, art 19
[454] Al-Budairi Ismail and Ibrahim Hawra (n 4) 92-93; Qabas Abaad. "Financial Legislation and Environmental Protection." *Alrafidain of Law- Mosul University* no.45 (2010): 199-220.

4.2.5 Imprisonment

Imprisonment is a particularly useful sanction in the case of impecunious offenders.[455] In terms of the Article 34 Law on the Protection and Improvement of the Environment, No. 27 of 2009 provides:

> 1. If no redress has taken place, the financial penalty shall be more severe. As stipulated in this law, as well as regulations of this law, notices or announcements, infractions will be punished with an arrest for a period of no less than 3 months or by a fine of no less than 1 million dinars, which shall not exceed the sum of 20 million dinars or the total of the two penalties.[456]

In this Article that the Iraqi legislator made the penalty of imprisonment inclusive of all environmental crimes resulting from violation of the provisions of Law No. 27/2009 without taking account of seriousness of the crime and the resulting damage. It would be preferable to stipulate which provisions of this law shall be punishable by imprisonment.[457] It is the view of this author that the environmental protection laws should include provisions that adopt a range of penalties in proportion to the importance of the interest on which these crimes constitute an assault.[458]

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[455]Susan Hedman. "Expressive functions of criminal sanctions in environmental law." *Geo. Wash. L. Rev.* 59 (1990): 889; Al-Fil Ali (n 409)

[456] Ibid (n 21) art 34 (1)

[457] Some Environmental legislation that pointed the prison sentence as a penalty for the commission of crimes of environmental pollution has been mentioned in the Egyptian constitution, which established this penalty for serious crimes related to dangerous substances, waste and radioactive materials, Anyone who contravenes the provisions of Articles 29/32/47 of this Law shall be punished by imprisonment for a period not less than five years. In another text, the Egyptian legislator stressed the existence of an aggravated circumstance: "Any person who intentionally commits an act contrary to the provisions of this law shall be punished by imprisonment for a period of no more than ten years if found that a person has suffered a permanent disability which is impossible to acquit. The penalty shall be imprisonment if three or more persons are suffered a permanent disability as a result.

As for the UAE environmental legislation, it also approved the prison sentence for serious crimes related to the pollution of the marine environment with hazardous and harmful substances, and stressed them in case of violation of handling of nuclear materials and (Any person who contravenes the provisions of Articles 26/27/31/62 section 1/62 -section 3 of this law shall be punished by imprisonment and a fine. Any person who contravenes the provisions of Article 26 - Section 2 of this Law)

[458] In Egypt, the environmental legislator imposed the penalty of imprisonment in several articles and in different ways, including that (A penalty of imprisonment for a period of not less than one year and a fine shall be imposed ... or one of those two penalties shall be imposed on whom violated Article 31 (30) 33 (161). In another article, it has mentioned that (the penalty shall be imprisonment and a fine ... or one of these two

In addition, the Article 99 of Law No. 89 of 1981 on Public Health as amended:

> 1. Without prejudice of any severe punishment forenamed in other laws, the dissenting of the rules of this law, regulations and instructions issued according to it, is punishable by imprisonment for a period not less than one month and no more than two years, and in case of repeated violation, he shall be subject to imprisonment and withdraw the licence permanently.[459]

Article 491 Iraqi Penal Code No. 111/1960 and its amendments states that:

> Any person who releases without due care and attention any solid, liquid or gaseous material at another, even though it does not cause any injury' is 'punishable by a period of detention not exceeding 1 month or by a fine not exceeding 20 dinars.[460]

Furthermore, Article 497 provides that:

> (3) Any person who deliberately or negligently causes an escape of gas, fumes, smoke, dirty water or other substance thereby causing harm, irritation or contamination to others [and]

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penalties (162) as well as it has mentioned that (a person shall be punished by imprisonment for a term not exceeding six months and a fine ... or by one of these two penalties when contravene the provisions of Articles (73) and (74) of this Law). It is clear from these articles that the Egyptian legislator provided for the punishment of imprisonment in several ways, but in all these texts he combined the penalty of imprisonment and the fine and authorized the introduction of one of them. In other texts, the Egyptian environmental legislator stressed the tightening of the penalty of imprisonment in case of return, stating that "Anyone who contravenes the provisions of Articles 22 and 37 (Article A) and (69) of this Law shall be punished by imprisonment for a period not exceeding one year. In the case of returning doubles ... the maximum penalty of imprisonment.
As for the UAE legislator, it stipulates that the penalty of imprisonment as a criminal penalty for crimes of aggression against the environment in a manner similar to that stipulated by the Egyptian legislator, stating that "... the penalty shall be imprisonment for a period not less than two years and not more than five years ... and the fine .. or one of these penalties for anyone who violates the provisions of Articles (18) (58) of this law ...)". It also stipulates that "Any person who contravenes the provisions of Articles (24) and (26) of this Law" shall be punished by imprisonment for a period not less than one year and a fine. It also state that "Any person who violates the provisions of Article 12 and (1) of Article (64) of this Law, shall be punished as follows: 1. Imprisonment for a period not less than six months and a fine ... 2. Imprisonment for a period of not less than three months and a fine ... 3. Term imprisonment not less than one month and a fine. In addition to the confiscation of birds and animals seized.
As for the Iraqi legislator in the law of environmental protection, it differs from the comparative environmental legislation mentioned above, where it stipulated the penalty of imprisonment in one article by stipulating that: (1).... Violating the provisions of this law and the regulations, instructions and statements issued for imprisonment for at least (3) three months or a fine ... or both.

[459] المادة (99)1 وتعديلاته من قانون الصحة العامة رقم 89 لسنة 1981 ([Article 99(1) of the Public Health Law No 89 of 1981 as amended; translated from Arabic to English by the author]

[460] Ibid (n 260) art 491

(4) Any person who is negligent when cleaning or repairing a chimney, oven or factory in which fire is used is guilty of misdemeanour and liable to imprisonment from one to 15 days or a fine of 10 Iraqi dinars.[461]

Many legal commentators argue that the threat of imprisonment is a more effective deterrent[462] than any other type of deterrent.[463] This argument is based on empirical evidence that terms of imprisonment being imposed on corporate representatives is a most effective deterrent due to the stigma attached to such a penalty within that official's social group.[464]

4.2.6 Revocation of licence or permit

If an offence involves contravention of the conditions of a permit or licence,[465] it would seem reasonable for a court to be able to revoke such permit or licence as part of the sentence.[466] Curiously, however, only one environmental law, the Public Health Law No. 89/1981, contains such a provision.[467]

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[461]Ibid (n 260) art 497

[462] It should be noted that the UAE legislator alone introduced the death penalty for anyone who deals with nuclear materials and waste in any way in the state environment. The French Criminal Code also enumerates some environmental crimes as part of the crimes of terrorism such as air pollution, underground, or territorial sea life, which causes harm to human or animal health and exposes the natural environment to danger.

[463]Michiel A Heldeweg, Seerden Rene JGH, and Deketelaere Kurt R.. "Public Environmental Law in Europe; a Comparative Search for an ius Commune."*Eur. Envtl. L. Rev.* 13 (2004): 78; Gobert, J., and M. Punch. "Rethinking Corporate Crime (London: LexisNexis/Butterworths)." (2003).220; Michael Vitiello. "Three Strikes Laws-A Real or Imagined Deterrent to Crime." *Hum. Rts.* 29 (2002): 3; Kevin C. Kennedy, "A critical appraisal of criminal deterrence theory." *Dick. L. Rev.* 88 (1983): 1.

[464] Donald Ritchie,. *Does Imprisonment Deter?: A Review of the Evidence*. Sentencing Advisory Council, 2011; Rob Allen, "A presumption against imprisonment: social order and social values." In *British Academy*. 2014; Iulia Pop Anca. "Criminal Liability of Corporations—Comparative Jurisprudence." (2006); Nagin, Daniel S. "Deterrence in the twenty-first century." *Crime and Justice* 42, no. 1 (2013): 199-263.

[465] The provisions of the Egyptian Environment Law, which authorized the competent administrative authorities to grant a license to discharge contaminated materials that can be analysed in the aquatic environment after treatment and it can Withdrawal of the license from the company which causes serious damage to the aquatic environment by stating that "the discharge shall be stopped by the administrative road and the license issued to the company shall be withdrawn without prejudice to the penalties stipulated in this law".
On the same law it stipulated the cancellation penalty within the provisions of other penalties, stating that "the Ministry of Public Works and Water Resources shall take removal or correction procedures at the expense of the violator without prejudice to the Ministry's right to revoke the licenses'

[466] 2009 عيد العازمي، الحماية الإدارية للبيئة، دار النهضة العربية، القاهرة [Al-Azmi Eid, Administrative Protection of the Environment, Dar Al-Nahda Al-Arabiya, Cairo 2009 translated from Arabic to English by the author] ; Al-Budairi Ismail and Ibrahim Hawra (n 4) 88

[467] المادة100 وتعديلاته من قانون الصحة العامة رقم 89 لسنة 1981 [Article 100 of the Public Health Law No 89 of 1981 as amended; translated from Arabic to English by the author]

Article 100 stipulates that:

> Without prejudice to any punishment forenamed in other laws, the Minister of Health is entitled to cancel the health permit, close the store, and stop the work when environment pollution that threatens life and health of citizens is proven.

This should be a standard provision in statutes which provide for licensed or permitted activities,[468] but it should be phrased permissively rather than in a mandatory fashion, since in certain cases revocation of a licence may amount, in effect, to a complete prohibition on carrying out a person's livelihood; for that reason, it is a sanction that should not be imposed lightly.[469] That said, however, it is a sanction that will be warranted in certain cases, even if it amounts to loss of livelihood or, in extreme cases, a 'corporate death penalty'.

4.2.7 Fines

This provision provided in Article 33 of the Law on the Protection and Improvement of the Environment, No. 27 of 2009:[470]

> 2. In line with the regulations mentioned in paragraph 1 of this article, the Minister, or someone that he may delegate (but holding no less a rank than General Manager) can impose a fine of no less than 1 million dinars. The fine shall not exceed 10 million dinars

[468] It was the duty of the Iraqi legislator to take this penalty on board as did the Egyptian legislator and authorized the competent authorities to control the projects and facilities committed environmental pollution. But the cancellation of the license was found to be applied within the framework of the provisions of the water conservation system mentioned above. The legislator authorized the Department of Environmental Protection and Improvement to revoke the license issued in accordance with the legal conditions in two cases by stipulating that the Department shall cancel the license issued under this Article in one of the following two cases: First: If it becomes clear that the discharge affects the safety of the environment Or public health; second: if the license is used for the purpose other than the purpose for which it was granted).

[469] Abdulkadhim, Asmaa. (n 26) 82.

[470] Al-Fil Ali (n 409) ;Al - Jourani Nasser (n 262) 21;العقوبات علي جعفر:للدراسات الجامعية تنفيذها, المؤسسة وأساليب والتدابير والنشروالتوزيع, بيروت (1988)

[Jaafar Ali: Sanctions, Measures and Methods of Implementation, University Institution for Studies and Publications Distribution, Beirut (1988)49translated from Arabic to English by the author]

and may be renewed each month until the infraction specified in this law no longer exists, as well as other notifications or announcements that have been issued in this respect.[471]

In addition, Article 34, provides:

1. If no redress has taken place, the financial penalty shall be more severe. As stipulated in this law, as well as regulations of this law, notices or announcements, infractions will be punished by a fine of no less than 1 million dinars, which shall not exceed the sum of 20 million dinars or the total of the two penalties.[472]

In stipulating the method to be used to set the value of the fine as a criminal penalty for violating the provisions of the law of the environment and improve it, the Iraqi legislator didn't stipulates the upper and lower limits, leaving it to the judge to estimate the specific value of the damage done in each case.[473]

In relation to this Article, the Iraqi environmental legislator was not successful in taking this approach. He should have set a relative fine, considering that the true extent of environmental hazards and damage caused by environmental pollution offenses is often difficult to determine, so it is appropriate here to stipulate the penalty of relative fine based on an estimation of the damage to the environment.[474]

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[471] Ibid (n 21) art 33 (2)

[472] Ibid, art 34 (1)

[473] For instance as for the Egyptian legislator, it also stipulated the minimum and the highest fine, where it states: "A fine of not less than ten thousand pounds and not more than twenty thousand pounds or one of these two penalties shall be imposed on anyone who contravenes the provisions of articles 30,31,33 179,". In another provision, it states that "a fine of not less than two hundred pounds and not more than three hundred pounds shall be imposed on anyone who contravenes the provisions of Article (36) of this law".
In the UAE, the legislations did not differ from the environmental legislations in Egypt in terms of the method of stipulating the fine with a minimum and higher limit. This is to say that a fine of not less than ten thousand dirhams and not more than fifty thousand dirhams shall be imposed on anyone who contravenes the provisions of Article 51 of this Act).

[474] Qabas Abaad (n 454) 199-220; The findings of the ERM study support this conclusion that financial penalties continue to be significantly below the maximum available to the magistrates even though in the R v Anglian Water Services Ltd sub nom Hart v Anglian Water Services Ltd. case, the need for higher financial penalties was underscored. In this case, the Court of Appeal advised that Magistrates should impose higher fines especially where health and safety has been compromised. This mentality of increasing the level of penalties should also be extended to the protection of flora and fauna. Existing levels of fines are seen as inadequate to deter persistent offenders and should be considered to be falling outside the requirements of the Aarhus Convention, in that the penalties are neither "adequate" nor "effective" to act as deterrents to the commission of environmental and wildlife crime; Dupont, C., and P. Zakkour. "Trends in Environmental Sentencing in England and Wales." *A Report by Claire Dupont and Dr. Paul Zakkour, Environmental Resources Management Ltd.(ERM)* (2003) 22

There are ‘additional penalties’ stipulated in Article 96 of the Public Health Law No. 89/1981, which mention:

> The Minister of Health can warn any establishment, project or any agency or environmental pollutant source that within 30 days the cause should be removed imposing a fine of not more than 250,000 Iraqi dinars IQD, if the perpetrator violates the provisions, regulations and instructions of this law.[475]

4.2.8 Removal

In Iraq, the legislator granted the competent administration - the minister - the authority to impose the penalty of removal under the Article 33 (par1 &2) of the Law on the Protection and Improvement of the Environment, No. 27 of 2009:

> 1. The Minister can issue a warning to any company, factory or pollution source to remove the source of the pollution within a period of 10 days from the notification. In the event of non-compliance, the Minister can halt work or temporarily close (operations) for a period of 30 days, which can be extended until such time as the source of the pollution is removed.
> 2. In line with the regulations mentioned in paragraph 1 of this article, the Minister, or someone that he may delegate (but holding no less a rank than General Manager) can impose a fine of no less than 1 million dinars. The fine shall not exceed 10 million dinars and may be renewed each month until the infraction specified in this law no longer exists, as well as other notifications or announcements that have been issued in this respect.

It is clear from this article that the removal is the same violator, without specifying that legislator or competent administrative authority could remove the violation by the

[475] المادة96 من قانون الصحة العامة رقم 89 لسنة 1981 وتعديلاته [Article 96 of the Public Health Law No 89 of 1981 as amended; translated from Arabic to English by the author]

administrative way on the expense of the violator and only repeated the penalty imposed until the removal of the violation by the party causing it.[476]

We believe that it was desirable for the Iraqi legislator to follow the example of the Egyptian and French legislators by authorizing the competent authority to protect the environment by removing the violation and on the expense of the violator when the violator does not remove it to stop the source of pollution and prevent the aggravation of its impact to achieve the speed and efficiency required by the administrative penalty to deter the violator.

4.3. Penalties not provided nor applied in Iraqi environmental laws of air pollution

Sentencing corporations is an issue that has vexed commentators throughout the ages. The main reason for this is that corporations have 'no body to kick and no soul to damn'.[477] Put in more real terms, corporations cannot be imprisoned, which means that the only alternative penalty of the 'traditional' criminal sanctions is the fine. Many critics have indicated that fining corporations is an inadequate penalty[478] as the corporations are likely to absorb the fine simply as a cost of doing business.[479]

[476] Because of the importance of this penalty, the Egyptian Environmental Law stipulates this penalty, stating that "... In all cases, the offender is committed to remove the effects of the violation at the time specified by the competent administrative authority if the person does not do so.
In the UAE, the environmental law committed the violator to pay all costs necessary to remove the effects of the violation. In which case it is stated that "the judicial control officers shall have the right to receive immediate amounts temporarily under the account of the enforcement of the fine or compensation ... plus all the expenses and compensation determined by the competent authorities in agreement with the Ministry to remove the effects of the violation ..." In another text, it states that "anyone who causes or neglects to cause damage to the environment ... shall be liable for all costs necessary to remedy or remove such damage ...".

[477] John C Coffee. "" No soul to damn: no body to kick": A scandalized inquiry into the problem of corporate punishment." *Michigan Law Review* 79, no. 3 (1981): 386-459.

[478] John D Wilson. "Re-thinking penalties for corporate environmental offenders: A view of the law reform commission of Canada's sentencing in environmental cases."*McGill LJ* 31 (1985): 313.

[479] Steven Zipperman,. "The Park Doctrine--Application of Strict Criminal Liability to Corporate Individuals for Violation of Environmental Crimes." *UCLA J. Envtl. L. & Pol'y* 10 (1991): 123.

4.3.1 Forfeiture

Only one statute provides for forfeiture of items upon conviction of an offence.[480] Such items include the Article 35 Law on the Protection and Improvement of the Environment, No. 27 of 2009 provides:

> Those contravening the obligations contained in parts one, two and four of Article 20 of this law will be imprisoned and will be obliged to return all the hazardous material and waste products, radioactive material to their establishments in order to be disposed of in a secure manner.[481]

There would seem to be good sense behind the forfeiture of items used in the commission of the offence.[482] It has been suggested that the only real problem with forfeiture of instrumentalities is that the forfeiture must not constitute unfair and excessive punishment (in addition to the basic sentence).[483] In such cases, according to van der Walt:

'proportionality jurisprudence can be employed to indicate whether it is reasonable and justifiable to forfeit the property in question, given the court's findings on the facts, the nature of the property forfeited, the guilt of the defendant and the sentence already imposed'.[484]

In addition, there must be a necessary connection between the use of the instrumentality in question and the commission of the offence. If something is used only incidentally to the commission of the offence, then forfeiture of that item will not be countenanced.

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[480] Ibid (n 260) art 101
[481] Ibid (n 21) art 35
[482] Most of the comparative environmental legislations have focused on the text, including the provisions of the Egyptian legislator in the Environment Law that "... whoever violates the provisions of Article 28 of this law shall be punished by confiscating birds, animals, living organisms, plants, Weapons, tools and means of transport used in the commission of the crime".
Another application of this penalty was found in the UAE Environmental Law, which states: "Anyone who violates the provisions of the article shall be punished ... In addition to the confiscation of birds and animals seized.
[483] Walt, A. J Van der. "Civil forfeiture of instrumentalities and proceeds of crime and the constitutional property clause."*South African Journal on Human Rights* 16, no. 1 (2000): 1-45.
[484] Ibid

It is submitted that this kind of penalty is one, which can legitimately be used against environmental offenders, particularly those who deliberately flout the law in order to pursue profits. Examples of such offenders would be persons who illegally dispose of hazardous waste in order to avoid having to pay for its correct disposal.

Where there are prohibitions, however, the nature of the serious damage or harm that can be caused by nuclear or radioactive material dictates the imposition of heavy potential penalties for contravention of the Act and perhaps explains why the only enforcement mechanism provided for is the criminal sanction.

In this regards, the Iraqi environmental laws do not provide any article for this provision to punish environmental crimes excluding the crime of hazardous material and waste products, radioactive material; this sends a message that environmental crimes are not important.[485]

4.3.2 Conviction

It can be argued that conviction alone does have a potential retributive and deterrent impact on corporate environmental offenders. The stigma imposed by criminal conviction for corporations cannot be written off as a cost of doing business. However, the stigma of criminal conviction will only be significant if there is publication of the conviction, which is often not the case.

In practice, then, the deterrent and retributive impacts on the corporation imposed by conviction alone are unlikely to be strong.[486]

[485] Al-Budairi Ismail and Ibrahim Hawra (n 4) 92-93
[486]Brent Fisse. "Reconstructing corporate criminal law: Deterrence, retribution, fault, and sanctions." *S. Cal. L. Rev.*56 (1982): 1141.

In this regard, the Iraqi environmental laws do not provide any article for this provision to punish corporate environmental crimes; this signifies that the environmental crimes are not considered to be important.

4.3.3 Fines

The main problem with corporation's fines is that, firstly, they do not deter the offending company from repeating the offence as the fine can be written off as the cost of doing business. Secondly, fines can come to be seen as the price to be paid for permission to commit the crime in the first place.[487] This conflicts with the goals of deterrence and retribution which are, in part, to express the view that offences are 'socially unwanted and that money alone cannot adequately compensate'.[488]

Fines can easily fall victim to what Coffee calls the 'deterrence trap',[489] which arises when the size of the fine that is necessary to bring about effective deterrence is larger than an amount that the corporation can pay. A small corporation will not be more threatened by a 5 million dinars fine if it cannot pay one of 50 000 dinars. At least where an individual is unable to pay a fine, he or she can be deterred by the threat of imprisonment.[490]

As Coffee points out, 'our ability to deter the corporation may be confounded by our inability to set an adequate punishment cost which does not exceed the corporation's resources'.[491]

Not only do fines suffer from the problem with deterrence in the context of corporate offenders, but there is also a 'retribution trap'. A retributive fine based on the idea of justice

[487]Ibid, 1217.
[488]Ibid
[489]John C Coffee (n 477) 386-459.
[490] Qabas Abaad (n 454) 199-220.
[491]John C Coffee (n 477) 386-459.

as fairness[492] may also be far larger than that which the offender can pay. As Braithwaite says,[493]

Given what we know about how disapproving the community feels toward corporate crime, there may be many situations where the deserved monetary or other punishment bankrupts the company. The community then cuts off its nose to spite its face.

In addition to the problems of the deterrence trap and retribution trap, fining corporations may also operate unjustly in that the cost of paying the fine falls largely on innocent shareholders, or they can be externalised by imposing the costs upon consumers or employees of the corporation.[494]

Further problems with fining corporations are what Coffee calls the externality problem and the nullification problem. The externality problem, put simply, is that the imposition of a fine on a corporation imposes costs (externalities) on persons who are largely innocent (some completely innocent). This can be referred to as overspill of the costs of deterrence. Persons thus affected are stockholders (who can perhaps be regarded as not completely innocent since they have been benefiting from tainted proceeds), creditors (through a diminution of the value of their securities reflecting the increasing riskiness of the enterprise), employees (who may be affected, maybe even retrenched, as a result of cost-cutting in response to a severe fine) and consumers.[495]

The externality problem gives rise to the nullification problem: that judges are reluctant to impose fines approaching the maximum available because of their perceptions of the overspill of negative impact on innocent persons. This leads to nullification of the legislation.

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[492]Ibid.
[493]John Braithwaite. "Challenging just deserts: Punishing white-collar criminals." *J. Crim. L. & Criminology* 73 (1982): 723.
[494] Qabas Abaad (n 454) 199-220.
[495]John C Coffee (n 477) 401.

4.3.4 Managerial intervention

This penalty would entail a court order requiring internal discipline and organisation reform. Internal discipline orders would place responsibility upon the corporation for investigating the offence and bringing the appropriate individuals within the corporate structure to book.[496] Organisational reform would involve the installation of preventive policies or procedures, or modification of existing ones, in order to prevent the repetition of offences. Fisse recommends the imposition of managerial intervention by means of a 'punitive injunction', as opposed to probation, due to view of probation as being a 'soft option' alternative to other penalties[497]. The view may well have been valid at the time that Fisse was writing, but probation has subsequently been 'promoted' to a sentence in its own right, and often a supplement to other penalties, so managerial intervention could be imposed as a condition of corporate probation.

The main advantages of managerial intervention are that, in short, they are directed at managers rather than shareholders and other victims of the overspill of fines, and they encourage reform of policies and procedures within the organisation.[498]

4.3.5 Community service

Corporate offenders could be required to carry out community service by means of undertaking socially useful work projects tailored to the offender's skills and resources and reasonably related to the offence subject to the sentence. Harrell calls such projects 'beneficial environmental projects'.[499]

[496] Abdulkadhim, Asmaa (n 26) 82.
[497] Brent Fisse (n 486) 1237-1238.
[498] Ibid.
[499] Martin Harrell. "Organizational Environmental Crime and the Sentencing Reform Act of 1984: Combining Fines with Restitution, Remedial Orders, Community Service, and Probation to Benefit the Environment While Punishing the Guilty." *Vill. Envtl. LJ* 6 (1995): 243.

Community service is normally viewed as involving service 'in kind' but it can be imposed in the form of requiring offenders to pay money for charitable purposes. In certain cases, courts have imposed as a condition of probation either the membership of environmental groups or payment of monetary contributions to such groups, but this would appear to be a practice of somewhat dubious efficacy.[500]

Community service is a particularly useful sanction in the case of impecunious offenders.[501]

The advantages of community service are, first, that it serves the goals of deterrence and retribution in three ways that fines do not. First, it relates to nonmonetary values as well as monetary values in that it has the capacity to inflict loss of power and autonomy on the corporation. Second, community service need not be 'subverted by the micro goals of organisational subunits', provided that community service requires the participation of the whole organisation. Third, whereas fines give the impression that criminality can be purchased, community service has the ability to express the social undesirability of crime. These three factors apply equally to adverse publicity and redress facilitation discussed below.[502] Further benefits of community service are that it does not fall into the deterrence and retribution traps, and it is unlikely to have negative impacts on shareholders, employees and consumers. As Fisse explains:

'Community service projects could create new employment opportunities for persons unemployed or otherwise at risk of being laid off and, although the financial costs may be passed on to consumers, there would also be a positive externality – the service rendered to the community'.[503]

[500]Jaimy M Levine. "" Join the Sierra Club!": Imposition of Ideology as a Condition of Probation." *University of Pennsylvania Law Review* 142, no. 5 (1994): 1841-1890.
[501]Lipman, Z., and L. Roots. "Protecting the environment through criminal sanctions: The Environmental Offences and Penalties Act 1989 (NSW)." *Environmental and Planning Law Journal* 12 (1995): 16-16.
[502] Brent Fisse (n 486) 1239.
[503] Ibid,242

4.3.6 Adverse publicity

Currently, it is recognised that corporate prestige is a significant corporate asset that is closely related to its financial success. A requirement, either instead of or in addition to, other penalties, that the corporate offender publicise its conviction and the details of the offence at its own cost (and to the satisfaction of the court, to prevent a corporation producing something that nobody will read), may be a useful sanction that rests on the stigmatisation effect of criminal conviction. It has been argued that the impact of adverse publicity is too uncertain to justify its use,[504] but, as Fisse points out all sentencing involves uncertainties of impacts and this alone does not warrant rejection of the idea.[505]

The advantages of adverse publicity orders are essentially the same as those of community service.[506] There may be some doubt, however, as to Fisse's claim that the overspill of adverse publicity to workers or consumers as a result of the company's tarnished image would be minimised. Given the extent of environmental consciousness today in certain countries, adverse publicity may well lead to consumers avoiding the company's products, which may well have an impact on employees if loss of market share is significantly serious.

4.3.7 Redress facilitation

This measure envisages the offender being required to facilitate the provision of civil compensatory options to the victims of the offence. Examples given by Fisse include punitive discovery orders and requiring offenders to give notice of conviction to victims.[507] The likely criticism of this measure as being overly harsh can be met by the response that, as an alternative to a fine, it may not be harsh. Moreover, if reserved for offences, which call for harsh sentences, it may be a necessary measure to meet the deterrent aims of punishment.

[504]John C Coffee (n 477) 427-428.
[505]Brent Fisse (n 486) 1230-1231.
[506]Ibid, 1239-1243.
[507]Brent Fisse (n 486) 1233.

This type of measure is ideal in such cases, where some victims may not know that they have been the victims of a crime, but it is difficult to think of instances where this would be relevant in the environmental sphere. Redress facilitation, therefore, is likely to be of limited use in the context of environmental crimes.

4.3.8 Equity fines

Coffee proposes the use of equity fines, which would operate essentially as follows:

'[W]hen very severe fines need to be imposed on the corporation; they should be imposed not in cash, but in the equity securities of the corporation. The convicted corporation should be required to authorize and issue such number of shares to the state's crime victim compensation fund, as would have an expected market value equal to the cash fine necessary to deter illegal activity. The fund should then be able to liquidate the securities in whatever manner maximises its return'.[508]

In broad terms, the justification for equity fines as Coffee proposes are:

- The avoidance of a knock on effect on workers or consumers as only shareholders are liable
- As a result of the reduction of overspill, the nullification problem may be reduced.
- It permits for significantly higher penalties based on the market value of the company assets rather than on currently available cash which is far less than the real value of the company
- It leads to better alignment of the manager's self-interest with that of the corporation, since the decline in the stock will reduce the value of stock options and incentive compensation available to him or her. It brings the manager's own

[508] John C Coffee (n 477) 413-424.

personal advantage closer to that of the company as sales of assets could impact negatively on the manager's performance-based company shares.

- The creation of a large marketable block of securities makes the corporation an inviting target for a takeover.
- Stockholders would be inclined to take less of a short-term, profit-maximising view and would be likely to require better internal controls within their corporation.[509]

On the other hand, Fisse identifies the following shortcomings of the equity fine idea:

- Managers' self-interest may be affected only to the extent that they hold stock or stock options in their company at the time in question.
- They suffer from a similar drawback to cash fines in that they do not guarantee the overhaul of internal policies and procedures relating to discipline and compliance.
- They emphasise the price of crime rather than the social disvalue of crime. This is a drawback that is also shared by cash fines.
- They would 'minimize the injustice of overspills to workers and consumers at the expense of maximizing the unjust distribution of costs to shareholders'.[510]

These shortcomings, coupled with the fact that as a novel idea the implementation of equity fines would require compelling arguments in favour of its advantages, suggest that their time has not yet come, particularly in Iraq where corporations are not currently prosecuted widely for environmental offences.[511]

[509]Ibid, 413-419.
[510]Brent Fisse (n 486) 1236.
[511] Qabas Abaad (n 454) 199-220.

4.3.9 Prohibition of indemnification of corporate officers

Although not really a penalty to be imposed on a corporation, an order prohibiting the corporation from indemnifying corporate officers who have been sentenced to fines, could be imposed as a condition of probation. While the objective behind such an order is a commendable one – payment of the corporation of its officers' fines would undermine the sentencing objectives vis-à-vis the officer – there may well be insurmountable impracticalities as far as enforcement of the order is concerned that would serve to outweigh the value of such an order.[512]

While it is true that it may be very difficult for the authorities to ascertain whether, in fact, indemnification has been made in ways that are not obvious, the merit of such an order is, at the very least, to prevent blatant acts of indemnification that would serve to bring the law into disrepute.

4.3.10 Disqualification from government contracts

Such a penalty could certainly have significant deterrent impact on offending corporations. Companies can be subjected to a moratorium or even full termination of government contracts, although Cohen points out that this penalty is more likely to be imposed by government agencies rather than by courts of law.[513]

It could be argued that it is not the role of the court to distribute government largesse, and, in addition, this may provide severe hardship for the government in a country with a relatively small economy if the only supplier capable of serving the government's needs were so disqualified. Perhaps such a measure would be useful not as a stand-alone sanction, but a condition of probation. For example, a corporation ordered to implement a corporate

[512]Kathleen Kwan. "Sentencing and Environmental Crimes." *Journal of Environmental Law* 6, no. 1 (1994): 107-123.
[513]Mark Cohen. "Monitoring and enforcement of environmental policy." (1998)1054.

compliance programme might be disqualified from government contracts until the compliance programme was implemented to the satisfaction of the court.

4.3.11 Prohibition of the further development

This is a provision that has good deterrent value in the case of corporations who take the risk of incurring whatever sentence may be imposed for damaging culturally important heritage sites and demolishing them in order to carry out development. Not only will such a corporation be liable to the usual penalty, but it may also be forbidden from carrying out the intended development for a period of time up to many years, which removes the incentive to demolish the older building in the first place. For example, oil companies in Iraq.

4.4. Companies and Corporate Officer Liability

Corporate entities[514] are a major focus of environmental law and discussions about environmental liability for a number of reasons:

- They are major perpetrators of environmental contamination although there are also other perpetrators
- They exert wide-ranging economic and political influence
- Larger organisations commit a disproportionately larger number of infringements of the law
- Corporations handle the most toxic types of pollutants – individuals rarely have the resources or the need to handle virulent substances such as heavy metals, radioactive waste or chemical residues

[514] In this chapter, the term 'corporations' will be used to denote all types of corporate entities unless the context suggests otherwise.

- The environmental contamination caused by corporations cause is often more potent and widespread in its impact than that caused by the activities of individuals Corporations often have adequate resources with which to reduce the environmental impacts, resources have often resulted from the use of clean air, clean water and other public amenities The localisation of corporate contamination frequently makes it easier to control than the equivalent amount of contamination caused by individuals.[515]

Since 2003, oil has been the mainstay of the Iraqi economy and oil revenues have been yardstick for measuring the effectiveness of the government. However, the government tends to take a short-term view to development due to the ease of deriving revenue from oil. Nonetheless, there are recent signs that the government is beginning to take sustainability as a serious issue. The objective of Iraqi sustainable development includes economic growth, social development and environmental protection as an integrated package.[516]

Such implementation requires a more integrated institutional and legislative system to develop deterrent procedures in cases of deliberate oil pollution (caused by acts of sabotage or for the purpose of stealing oil products).[517]

Indeed, the majority of the most serious air pollution crimes in Iraq originated from the activities of the corporations and industries,[518] and the fact that it has the physical capabilities, as well as equipment that can make a significant amount of air pollution; in addition to possess hidden capabilities enables the pressure on country institutions in order to turn a blind eye to their polluting activities.[519]

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[515] Dianne Saxe. "Environmental Offences." *Corporate Responsibility and Executive Liability, Aurora, Canada Law Book* (1990): 21- 26.

[516] عامر طراف وحياة حسنين، المسؤولية الدولية والمدنية في قضايا البيئة والتنمية المستدامة، الطبعة الاولى، مجد المؤسسة الجامعية للدراسات والنشر والتوزيع، بيروت, 2012 , ص 249 [Tarraf Amer and Hassanein Hayat, Responsibility International and Civil Issues in Environment and Sustainable Development, First Edition, Glory University Foundation for Studies, Publishing and Distribution, Beirut, 2012, p. 249]

[517] Iraq Ministry of Environment (n 1) 38; United Nations Environment Programme (n 293) 51-52.

[518] Al-Dabbas Moutaz A, Ali Lamyaa Abdulameer and Afaj Adnan H (n 100) 8

[519] نبيلة رسلان، الجوانب الأساسية للمسؤولية المدنية للشركات عن الأضرا ر بالبيئة، دار النهضة العربية، القاهرة، 2003 [Raslan Nabila, The Basic Aspects of Corporate Civil Responsibility for Environmental Damage, Dar Al-Nahda Al-Arabiya, Cairo, 2003 translated from Arabic to English by the author]

The move to corporate officer liability is due in part to the deterrence failure of corporate entity liability. Penalties do not deter corporations sufficiently,[520] since the penalty costs can be externalized, and the "stigma" of criminal prosecution is not substantially threatening to a corporate entity. Furthermore, even though the government arguably does have a greater incentive to avoid the stigma of criminal indictments by virtue of its dual role as regulator and prosecutor, this dual role often functions to protect the government from such indictments.

On the other hand, the offenders committing the crime of polluting the air in Iraq may all-natural persons, which produces disadvantages from his actions and risks relative to the air. The latter can be any ordinary individual activities that lead to pollute the air either as intentional or mistakenly, he then asks criminally on an individual basis for criminal behaviour; it has even asked about the activity of others, when he was assigned to supervise

[520] Fear of a substantial penalty should deter companies from deliberately breaching regulations, reducing the number of costly court procedures to enforce the law. A recent judgement in the High Court of Justiciary, the highest criminal court in Scotland, is to be noted. Guidelines on appropriate penalties for environmental offences were issued for the first time in HM Advocate v. Doonin Plant Ltd. Their Lordships emphasised the seriousness of environmental crimes and the necessity that they attract substantial penalties. The appellant was the Crown, claiming that the fine imposed by the Sheriff court was unduly lenient. Their Lordships have clearly responded to this criticism of leniency, taking a harder line against the powerful economic actors by resetting the initial £10,000 fine (reduced to £8,000 after credit was applied) imposed by the Sheriff court to a £100,000 fine (reduced to £90,000 after credit was applied).
The offender, Doonin Plant Ltd, deposited waste close to residential buildings without a licence, breaching the Environmental Protection Act 1990 s.33(1)(c). The waste was dumped without being checked, and without precautions being taken to capture gas emissions or prevent water pollution from leachate run-offs. The offender had lost authority to use the space as a landfill for controlled waste since the revocation of its licence in 2006. Additionally, the company had been found guilty on four separate occasions for similar offences of environmental pollution, which had invoked nominal fines of £1, 800, £3, 000, £5,000 and £3, 000 (when the company was found guilty for two separate charges on the same occasion) and finally £500. In the judgment, the High Court made four points; firstly, the guilty company must supply information of its financial situation to set a proportionate fine. Secondly, there was public concern that fines were too low. Thirdly, credit should not be given to a company that submits a plea of guilty late in the preparation of the case. Finally, the court expressed surprise that there were no charges brought against individuals within the company. Other factors, besides rising public concern surrounding environmental harms, contributed to the increased fine. The proximity of the site to residential housing, the long time period over which waste was dumped and the fact that the respondent had a "blatant and complacent disregard" for their responsibilities were accounted for. The history of environmental offences was also taken into account. Thus, the High Court imposed a fine ten times higher than the fine imposed by the Sheriff, from £10,000 to £100,000; [2010] HCJAC 80; 2011 S.L.T. 25; 2011 S.C.L. 82; 2010 G.W.D. 27-539; Louise A Waddell. "Corporate environmental crimes in Scotland through the lens of green criminology." PhD diss., University of Aberdeen, 2013.102.

and control this third party as and respect the person responsible for managing the industrial facility.[521]

The role of the criminal law in controlling environmental policy must be considered. Large-scale polluters and small polluters react in different ways to civil and administrative sanctions and it may be said that deterrence is different for the two groups.[522] Big corporations are seriously concerned about administrative sanctions, which can have a catastrophic effect on a large industrial complex, and also fear the damage to their reputation and the cost of paying out on civil suits for environmental damage. In contrast, small polluters are likely to see such administrative sanctions as fines and interdiction as much less troublesome because they can just go off and do something else. Indeed, of polluters moving to another region or another state will, in most cases, allow them to start all over again with no change in their environmentally damaging behaviour. In any case, what is the point of a court order to pay damages for environmental harm when the person convicted can never be found?

The last thing to say on the subject of small polluter versus large polluter is that those complicated questions of law to do with collective behaviour that are likely to be at the centre of cases involving large corporations are almost never raised when the polluter is a small business or an individual.

What the criminal law now seeks is to use sanctions that, in the past, have been the province of civil and administrative law including: orders for reparation; adverse publicity; the confiscation of illegal profits; probation; community service; and closing down enterprises that have offended.[523]

[521] Ibid.
[522] Oberg, Jacob. "Criminal sanctions in the field of EU environmental law." *New J. Eur. Crim. L.* 2 (2011): 402.
[523] Ibid.

The challenge for sentencing environmental crimes is to strike a happy medium between treating environmental offenders overly leniently, on the one hand, or too harshly, on the other.

It is advanced by some legal experts that serious infractions of environmental laws should be treated as criminal.[524] This could mean applying proportionality and retribution retrospectively. Theories based on retribution argue for criminal sanctions to be imposed in view of the severity of the harm caused.[525] Likewise, in the context of criminal law, applying the principle of proportionality requires that the 'punishment fit the crime' in terms the seriousness of the infraction.[526] The rule of reflective pro rata penalisation, which will be referred to throughout the remainder of this section simply as 'proportionality', should be applied when considering an appropriate sanction in individual cases. The implication of this principle is that the severity of the sanction should reflect the seriousness of the infraction and that the more serious the harm, the more exacting the sanction should.[527]

The four 'key issues' to be considered are: (1) the nature of the environment affected; (2) the extent of the damage caused; (3) the deliberate nature of the offence; and (4) the attitude of the accused. When it comes to corporate offenders, five additional considerations come into play: (1) the size of the corporation and the nature of its wealth and power; (2) the extent of the corporation's attempts to comply with the law; (3) remorse on the defendant's part; (4) the profits realised by the offence; and (5) any criminal record or evidence of good character on the part of the corporation.

One of the greatest hurdles in holding corporations to account for environmental harms they cause is finding them liable for the harm. Corporations can be found to be criminally liable under Law No. 27 of 2009 on the Protection and Improvement of the

[524] Ibid.
[525] Gobert, J., and M. Punch (n 463) 9.
[526] Petter Asp. "Two notions of proportionality." Forum Iuris, Helsingfors, 2007.21
[527] Gobert, J., and M. Punch (n 463) 402.

Environment [528] and explicitly under legislative acts for criminal actions or omissions committed by its employees or agents in the course of business. However, criminal liability is particularly problematic to attribute to a corporation because of the central role that *Mens rea* plays in most criminal offences. Vicarious and strict liability can be used when no mental element for the crime is required.[529]

Secondary liability, in the context of Iraqi Penal Code, falls upon the natural person for aiding, abetting or inciting the criminal offence committed by the corporation. The concept of limited liability and the separate legal personality ensures that members of a company are protected from liabilities incurred in the course of business. This aids the prosperity of the economy; without it investors would lose the incentive to invest. With it, individuals can take the risks that contribute to environmentally unsound decisions. Secondary liability preserves the legal personality, creating a separate offence to punish the natural person in recognition that the corporate body would not exist or function without the persons within it, directing and controlling its actions.

Secondary liability threatens the individuals within the company with the stigma of criminal, which should deter decision-makers within the company from taking unnecessary risks in the pursuit of profits.[530] The separation between individual and corporation means that unless individuals are prosecuted alongside the company the punishment of the corporation will be "*of small relevance to the purposes of the criminal law*".

Thus, criminal laws controlling corporations are most effective when prosecution of senior managers coincide with prosecution of the corporation. Many statutes add secondary

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[528] Ibid (n 21) art (32).

[529] 2006 محمد الكندري,المسؤولية الجنائية عن التلوث البيئي, دار النهضة العربية, القاهرة,[Al-Kandari Mohamed, Criminal Responsibility for Environmental Pollution, Dar Al-Nahda Al-Arabiya, Cairo, 2006.64 translated from Arabic to English by the author]; أياد ملوكي, المسؤولية عن الأشياء وتطبيقاتها على الأشخاص المعنوية بوجه خاص, الطبعة الأولى, دار الثقافة للنشر والتوزيع, عمان, 2009 , ص 153 [Maluki Iyad, Responsibility for Things and their Applications for Particularly Moral Persons, First Edition, Dar Al-Thaqafa for Publishing and Distribution, Amman, 2009, p. 153; translated from Arabic to English by the author]

[530] عدنان الدوري، أسباب الجريمة وطبيعة السلوك الإجرامي، الكويت، منشورات ذات السلاسل، ط 3 ، 1984 ، ص 263[Al-Duri Adnan, The Causes of Crime and the Nature of Criminal Behavior, Kuwait, p Series, I 3, 1984, p. 263].

liability for directors, allowing simultaneous prosecution of the individual and company,[531] and environmental laws in Iraq are willing to hold directors of companies personally liable for environmental offences.

On the other hand, strict liability is commonly used to hold corporations criminally liable as it eliminates the need to prove *Mens rea*. This eases the prosecution process, removing the need to locate a culpable mind within the corporation, which reduces the burden of proof and speeds up the judicial process, which in turn increases prosecution rates. The corporation is liable for the criminal acts or omissions of its employees or agents and intention to commit the criminal offence is not needed. It is used for both regulatory and criminal offences, contributing to the confusion between the two.

Strict liability is intended to facilitate the process of prosecution, therefore enhancing environmental protection. However, it may result in a corporation exacerbating an environmental harm once it has committed the offence. As a rational economic actor, once the corporation has committed an offence, it is argued that there is no incentive to implement costly measures to mitigate the harm, or to put a stop to the harmful but profitable activity. However, while *Mens rea* has been removed for the ease of prosecution of fictional legal persons, the existence of statutory defences shows that intent can still be identified. Proof of intent will be taken into account at the sentencing stage and increase the penalty. Thus, strict

[531] For example, in the Exxon Valdez grounding, Captain Hazelwood was charged under environmental statutes for the negligent discharge of oil, as well as under general criminal statutes for criminal mischief, reckless endangerment and operating a vessel while intoxicated. In addition, the ship-owner corporation may be held vicariously liable for the acts of crewmembers acting within the scope of their employment, if such acts constitute a violation of environmental statutes and, under certain circumstances, general criminal statutes. Additionally, corporate officers can be held criminally liable under environmental statutes merely because of their position of responsibility in the company, regardless of their actual knowledge or participation in any culpable conduct. Finally, corporate officers can be held criminally liable for violation of general criminal statutes depending on their actual knowledge of the facts surrounding the incident and whether they committed acts contributing to its occurrence; James R Bragg,. "Effectiveness of bioremediation for the Exxon Valdez oil spill." *Nature* 368, no. 6470 (1994): 413.

liability offences should result in stigmatising a guilty company as criminal blameworthiness will be evident.[532]

On the other hand, the offenders of crimes, who pollute the air, are divided between natural persons and legal entities and that most offenders of crimes which pollute the air are in exchange for legal entity limitations of natural persons.[533]

According to the Articles (11 & 12) of the Law on the Protection and Improvement of the Environment, No.27 of 2009:

Article 11:

> Any activity undertaken by an organization with an impact on the environment cannot go ahead without first obtaining the approval of the Ministry.

Article 12:

> Articles 9, 10 and 11 of the present law refer to existing structures, extensions and structures undergoing renovations.

Furthermore, no provision has been made for public servants' liabilities for environmental offences. However, the liability in the case of public servants may be governed by general principles (e.g., party to the offences).

Despite the fact that the Iraqi legislator in the Penal Code No. 111 of 1969 is taking the legal entities' responsibility for the crime of polluting the air, he has lacked and shortened this responsibility. The private legal entities of the individuals without the public as the state and public institutions resulted in the expansion of polluting the air in Iraq ratios.[534]

However, the problem lies in the application and implementation of environmental law No. 27 for the year 2009 against the offenders of pollution at the emergence of criminal responsibility.

[532] Al-Kandari Mohamed (n 529) 64
[533] Maluki Iyad (n 529) 153
[534] Al-Budairi Ismail and Ibrahim Hawra (n 4) 105

The problem is that environmental laws require that authorities are continuously updated in their knowledge of issues of the environment in a rapidly changing legal terrain.

The Iraqi Government has no agency responsible for determining the causal link between a putative polluter's behaviour and the act of pollution itself. Thus, victims of pollution incidents are often perplexed about what steps they may take even though they may have approached the relevant government body.[535]

In reality, such offences should be seen as offences against the wider community and not just limited to effects on the individual. Circumstances such as the defendant's profits and assets would be taken into account in affixing an appropriate financial penalty.[536] Thus, the injured party would be duly compensated as well the state acting as a proxy for society at large. Thus, in the absence of such measures as fault-based punitive damages, the rights of individual Iraqi citizens to claim just compensation for injury or harm caused by polluters cannot be assured.[537]

Still, in civil law there are specific areas of 'strict' liability like in the Mejelle.[538] The Mejelle states that:

[535] عبد العزيز عبد الهادي، حماية البيئة من النفايات الصناعية في ضوء احكام التشريعات الوطنية والاجنبية والدولية، دار النهضة العربية، القاهرة 1985) [Abdul Hadi Abdul Aziz, Environmental Protection from Industrial Waste in light of the provisions of the legislations National, Foreign and International, Dar al-Nahda al-Arabiya, Cairo 1985]; سعيد قنديل، اليات تعويض الاضرار البيئية، دراسة في ضوء الانظمة القانونية والاتفاقيات الدولية، دار الجامعة الجديدة للنشر، الاسكندرية, 2004 , ص 130 [Kandil Said, Environmental Damage Compensation Mechanisms, Study in the Light of Legal Regulations and International Agreements, New University Publishing House, Alexandria, 2004, p. 130translated from Arabic to English by the author]

[536] Adopting the criteria used by the Center for Corporate Accountability of England in its response to the Consultation of the Sentencing Advisory Panel, November 1999

[537] Al-Fil Ali (n 409)

[538] This was an attempt by the Ottaman government to codify Hanafite Islamic Law following the European system. The Mejelle codification came into effect in 1869 and was mainly the work of Cavdet Pasha, a statesman scholar. The introduction to the final draft consisted of 100 comprehensive principles of law which were designed to guide the courts on a wide range of issues. These principles were not meant to abrogate previous authorities but were non-binding resumes of legal opinion for the application of Islamic law in the caliphate. Rather than being a strict codification, it was more of a concise compendium of the law rather than being a strict civil code. When Iraq was merged with the Ottoman caliphate by the British, it became subject to Ottoman Law and the Mejelle. The British did attempt to replace Ottoman Law by a code of laws in force in India. . This was known as the Iraqi Occupied Territories Code, It was eventually abrogated in favour of the Mejelle which then remained the foundation of subsequent civil law in Iraq; Majallah El-Ahkam-I-Adliya,*Translated In* The Mejelle: An English Translation Of *Majallah El-Ahkam-I-Adliya*And A Complete Code Of Islamic Civil Law V (C.R. Tyser Et. Al. Trans., the Other Press 2001) [Hereinafter the Mejelle].

A person, who performs an act, even though not intentionally, is liable to make good any loss caused thereby[539]

However, the *Mejelle* approach in its avoidance of finding culpability in anyone except the person who actually commits the offending act:

The judgment for an act is made to fall on the person who does it. In addition, it does not fall on the person who gives the order, as long as he does not compel the doing of the act.[540]

This is in contrast to civil law where vicarious liability means that an indirect agent of an offence may also be punishable by law.

Vicarious liability implies that an individual is not only accountable for his/her own actions but for the actions of others over whom he/she exercises authority, provided the action of the other is done in the course of discharging that responsibility on behalf of their superior.[541]

The Iraqi Civil Code tends to place greater reliance on the provisions of the *Mejelle* by excluding the concept of vicarious liability and strictly holding the direct perpetrator accountable for any wrong committed. Thus, despite many resemblances in the general articles, a review of the origins of Iraqi law of torts reveals that there is greater reliance on the *Mejelle* than on continental civil law.

Thus, the Iraqi Civil Code contains a general article stating:

Every an act which is injurious to persons such as murder, wounding, assault, or any other kind of [infliction of injury] entails payment of damages by the perpetrator.[542]

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[539] *Id.* art. 92, at 15; See, e.g., United States v. Chem-Dyne Corp., 572 F. Supp. 802, 810 (S.D. Ohio 1983) (noting that at common law, "when two or more persons acting independently caused a distinct or single harm for which there is a reasonable basis for division according to the contribution of each, each is subject to liability only for the portion of the total harm that he has himself caused"); Bowman, Russell E. "Global cornerstones for environmental recovery in Iraq: A comparative law and policy analysis of lessons in environmental response and remediation." *NYU Envtl. LJ* 13 (2005): 545.

[540] The Mejelle, art. 89, at 14.

[541] C. CIV. art. 1384.

[542] Iraqi Civil Code art.202; Stigall, Dan E. "Iraqi civil law: Its sources, substance, and sundering." *J. Transnat'l L. & Pol'y* 16 (2006): 1.

Thus, under the Mejelle principle, courts are to calculate damages commensurate with the injury and the loss sustained by the victim, provided such loss was the result of the unlawful act.[543] In making such calculations, items such as loss of wages or other benefits are taken into account.[544]

Under the Mejelle principle, a person who is ordered to commit an act in breach of the law is still personally accountable for that crime and not the person who ordered the act unless some form of force or coercion was used. [545] Public officials, however, are not deemed to be responsible for damage caused by their acts when ordered by superiors to perform them.[546]

Civil penalties are separate from criminal penalties and the imposition of the former does not affect the latter.[547] Thus, civil courts have to decide civil liability and compensation on their own merits without any recognition of criminal judgments or possible compensation under criminal law.[548]

Victims may be unsure about who has caused them to become victims, and who is responsible. Identification of the perpetrator is a pre-requisite for victim remediation, since it both makes criminal investigation possible, and provides a target against whom the victim can proceed for damages under civil law. It can be very difficult to identify the perpetrator and establish criminal liability in environmental cases, as there can be a long, complicated chain from the perpetrator to the fact of the actual harm.[549]

It appears that the variety of defences open to an offender under Iraqi laws suggests that a higher premium is placed on the rights of the offender than on environmental protection from the often devastating effects of oil pollution. Accordingly, it is suggested that

[543] *Id.* art. 207(1).
[544] *Id.* art. 207(2).
[545] *Id.* art. 215(1).
[546] *Id.* art. 215(2).
[547] *Id.* art. 206(1).
[548] *Id.* art. 206(2).
[549] Eileen Skinnider (n 385) 1

defences under the Iraqi environmental laws should be reviewed to impose a strict liability on offenders in accordance with the 'polluter pays principle'.

On the other hand, the liability rules, then, were designed to serve as deterrents against not following the level of due diligence that the system requires in order to prevent damage or harm. Despite this, liability rules have often failed to deter companies from being cavalier with environmental issues for a number of reasons.[550]

Firstly, proving negligence on the part of polluting firms is often difficult. Secondly, the pollution effect is sometimes so widespread (e.g., the problem of acid rain) that it is often not possible for individuals to claim victimisation so that there is little incentive to initiate a liability suit.[551] Thirdly, environmental contamination may not directly affect individuals, but can damage vital ecosystems (e.g., a plankton population) on which those individuals may depend for their livelihoods or even survival.[552]

A study by Brent and Braithwaite into how criminal sanctions of different kinds can deter or change the behaviour of corporations in a number of areas that include the environment produced some interesting results.[553] It follows that such punishments as adverse publicity, community service and stop dilutions as a result of equity fines (with, ideally, the

[550] Al-Kandari Mohamed (n 529); أحمد سعد, استقراء لقواعد المسؤولية المدنية في منازعات التلوث البيئي, الطبعة الاولى, دار النهضة العربية, القاهرة, 1994 , ص 191 [Saad Ahmed, Extrapolation of Civil Liability Rules in Environmental Pollution Disputes, ed First, Dar al-Nahda al-Arabiya, Cairo, 1994, p. 191]

[551] عباس الحسيني، المسؤولية المدنية البيئية في ضوء النصوص المدنية والتشريعات البيئية، مجله رسالة الحقوق، كلية القانون، جامعة كربلاء، العدد الثالث، السنة الثانية, 2010 , ص17 [Al-Husseini Abbas, Civil Liability in the Light of Civil and Environmental Legislation, Journal of Law, Faculty of Law, Karbala University, Third Issue, Second Year, 2010, p. 17 translated from Arabic to English by the author]

[552] Asaad Mandel (n 407) 1-2

[553] Brent Fisse, and Braithwaite John. "The allocation of responsibility for corporate crime: individualism, collectivism and accountability." *Sydney L. Rev.* 11 (1986): 468; اياد الجلبي وزينب العزي, التحليل الاقتصادي لأثار تلوث الصناعة النفطية في مؤشرات البلدان مرتفعة الاداء البيئي, مجلة تنمية الرافدين, كلية الإدارة والاقتصاد, جامعة الموصل , المجلد 35 , العدد 114 , 2013 , ص141 [Al-Chalabi Iyad and Al-Azi Zainab, Economic Analysis of the Effects of Pollution of the Petroleum Industry on Indicators of High Performance Environmental Countries, Rafidain Development Journal, Faculty of Management and Economics, University of Mosul, Volume 35, No. 114, 2013, p. 141]; Zada Lipman,. "Criminal liability under the amended Environmental Offences and Penalties Act 1989 (NSW)." *Environmental and Planning Law Journal*8.4 (1991): 322-37.

shares being transferred to environmental interest groups) should be given consideration as possible new criminal sanctions.[554]

Where administrative orders are breached, the majority of countries provide administrative sanctions of which the commonest is the administrative fine.[555] This can, in part, be used to confiscate the profits or savings that have arisen from illegal acts. Compensative, restitutive, preventive and coercive provisions are also available to adopters of administrative legislation, and may include orders to clean up the damaged area, closing the enterprise, confiscation of assets, and the alteration or revocation of licences. Similar remedies are also available in civil law.[556]

Having said this, it is conceded that it may not be enough to advocate that the clear basis for corporate criminal liability be provided for in the code. It is also important to make recommendations on what should be the basis of corporate criminal liability.[557]

[554] Zada Lipman (n 553) 322-37.
[555] In R v Cotswold Geotechnical Holdings Ltd, Cotswold Geotechnical Holdings Ltd became the first company (and only company at the time of writing) to be convicted of corporate manslaughter under the 2007 Act. The company was fined £385,000, amounting to 250% of its annual turnover. The high level of this fine reflected the gravity of the offence and acted as a warning to employers of the necessity of attending to their duties to supply a safe workplace. The risk that the fine would send the company into liquidation was seen by the judges as unfortunate but unavoidable. This shows the English Court of Appeal as willing to impose a severe punishment, using this case as a deterrent to other companies in taking a lax approach to their duties. However, this was a small company with only one director; [2011] EWCA Crim 1337; Stuart Bell, and McGillivray Donald (n 161) 351." (2006); Louise A Waddell (n 520) 84-85.
[556] Frate Del. "Environmental Protection at National and International Levels: Potentials and Limits of Criminal Justise." (1999):22.
[557] Abdul Hadi Abdul Aziz (n 535).

4.5. Conclusion

The above analysis reveals that several sanctioning methods other than fines and imprisonment are available in environmental legislation. Most of them (for example, compensation orders) are supplementary to the usual penalty of fine or imprisonment but others, such as revocation of licence or permit, are alternatives. In most cases, the justification for using such instruments is persuasive. Several of these methods are used in other jurisdictions.

There are, in addition to those methods discussed above, several other sanctioning methods that have been used in other countries but not in Iraq, particularly those that target corporations, which are often seen as difficult to penalise. Those methods that can be used generally was considered, followed by corporate penalties.

Although the section appears to be aimed at corporate offenders, it could be easily adapted for individual offenders to provide for the conditions imposing relevant forms of managerial intervention and adverse publicity orders. Managerial intervention could require either the institution of internal to the administration relating to the incident in question and/or the implementation of compliance procedures or programmes to the satisfaction of the court. Failure to comply within a specified time would lead to the postponed sentence being brought into operation.

Based on retribution for criminal sanctions to be imposed in view of the severity of the harm caused. Likewise, in the context of criminal law, applying the principle of proportionality requires that the ‘punishment fit the crime’ in terms the seriousness of the infraction.

In Iraqi law, liability for damage to the environment rests on the impairment caused to the environment and to individuals with no requirement to establish a linkage between both.

A deficiency in Iraqi environmental laws is its failure to differentiate between the nature and extent of various infringements of the law insofar as the same penalty is meted out to many different types of crimes. In terms of air pollution, this differs from pollution of soil or rivers in that it is often not easily detectable. The uniformity of the penalties imposed in all circumstances fails to punish more serious crimes proportionately.

Furthermore, the system of penalisation for breaches of environmental law is relatively weak to the extent that it hardly has much force by way of deterrence and is not commensurate with the seriousness of the polluting or negligent act. Penalisation is much less severe than for crimes against the person and for other types of crimes. As a consequence, the use of special investigative techniques are not available for environmental crimes as the penalty falls below the threshold to justify the use of such techniques.

CHAPTER FIVE
THE ROLE FOR CRIMINAL LAW IN THE ENFORCEMENT OF ENVIRONMENTAL LAW OF AIR POLLUTION CRIME

5.1. Introduction

The preliminary question that has to be decided relates to the use of criminal sanctions in enforcement. This study eventually might help to determine the circumstances in which criminal sanctions as opposed to other alternatives ought to be used, what can criminal sanctions achieve that cannot be achieved by, say, civil and administrative laws? It is necessary to consider why regulators would use criminal sanctions. This subject will be covered in this chapter.

The overriding questions when discussing environmental crimes is what exactly is a crime against the environment, and why is the criminal law an effective tool in helping to protect it from further degradation? This requires a delimitation of "*core criminal law*", "*environment criminal law*", "*environmental crime*", "*criminal liability*" and an explanation of the environmental criminal law's basic aims and characteristics.

Although there is no specific provision in the Iraqi Penal Code for punishing environmental damage or contamination, it is still possible to deal with such situations by means of extension of other laws. For example, Article 491 which deals with acts of endangering other persons or Article 497 which concerns involuntary offences against life or the physical integrity of the person can be extended to cover damage to the natural environment.

Environmental law introduces rules directly applicable to protecting the natural environment and for penalising breaches of these laws. The different environmental components and contains provisions punishing the infringement of the above-mentioned rules with criminal sanctions.

5.2. Core Criminal Law Concepts

With the stage thus set for considering the wisdom and fairness of criminalizing environmental violations, the focus shifts to criminal law theory and the aims of the criminal law. The decision to criminalize is rooted in the core concepts of harm, culpability, and deterrence.

5.2.1 Harm

One purpose of criminal law is the prevention of harm. Harm is "*the fulcrum between criminal conduct ... and the punitive sanction*".[558] Although harm is, by most accounts[559], a value central to the criminal law[560], behaviour may be liable to punishment even when it does not actually cause harm.[561] While it is, true that the definition of some crimes is such as to mean that there must be a specified harm and that it must have been caused by the conduct of the defendant, there are many crimes, including inchoate crimes that remain crimes even though they have simply created a risk of harm.[562]

Even when harm is not an element of the crime, however, any resulting actual harm may be relevant for purposes of grading the seriousness of the violation *(i.e*., determining the range of authorized punishment, or calculating the sentence imposed).[563]

In this regards the environmental crime can bring about a wide variety of types of harm:

In the first place, environmental crime can cause people *immediate physical injury*, possibly resulting in death. Many substances that cause direct and visible harm to any human

[558] Kathleen F Brickey. "Environmental crime at the crossroads: the intersection of environmental and criminal law theory." Tul. L. Rev. 71 (1996): 487.
[559]Stephen J Schulhofer. "Harm and punishment: A critique of emphasis on the results of conduct in the criminal law." *University of Pennsylvania Law Review* 122.6 (1974): 1497-1607.
[560] Paul H Robinson. "A theory of justification: societal harm as a prerequisite for criminal liability." *UCLA L. Rev*. 23 (1975): 266.
[561]Asaad Mandel (n 407)
[562] Ibid (n 260) art 491
[563] Kathleen F Brickey (n 558) 487.

who comes into contact with them are regulated by environmental law, and unlawfully mishandling such substances can cause serious injury.[564]

In the second place, the physical injuries caused by environmental offences may be *future physical injuries*.[565] It is a significant feature of environmental crimes that they can sometimes produce very serious injuries years or decades after the offence.[566]

The third consideration also sets environmental crime apart from most traditional crimes in that *emotional distress* centred on fear of injury in the future can be caused by environmental offences.[567]

Fourth, environmental offences can cause *disruptions in social and economic activities.* An example would be when a whole community must be evacuated because hazardous chemicals have been released into the environment. Even if there is no physical injury to community members, the least that can be said about evacuation is that it is extremely inconvenient to all involved.[568]

Fifth, *remediation costs* may result from environmental offences.[569]Cleaning up illegal contamination of the environment may be necessary to minimise the risk of future physical injury or other harms.[570]

Sixth, *property damage* can be caused by environmental offences which reduce its utility, aesthetic value, and financial value by such things as the destruction of vegetation,

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[564] Peter Henry Rossi and Berk Richard A. *Public Opinion on Sentencing Federal Crimes*. US Sentencing Commission, (1997).

[565] There are two subcategories for this type of situation: (1) an immediate injury from exposure to a polluting substance but which does not manifest itself until much later; and (2) an injury that really does not occur until some considerable time after the offensive conduct. To illustrate the subtlety of the latter subcategory an example may suffice: Suppose a toxic pollutant is illegally discharged into a waterway and enters the body of a fish, the fish is later consumed by a person who then becomes ill as a result of exposure to the toxin.

[566] Lazarus Richard J., *Meeting the Demands of Integration in the Evolution of Environmental Law: Reforming Environmental Criminal Law*, 83 GEO. L.J. 2407, 2412-13 (1995).2468-84 ;("*But what distinguishes environmental pollution from conduct classically addressed by criminal laws* **...** *are the spatial and temporal dimensions of the harm that it causes*").

[567] Erikson Kai, *Toxic Reckoning: Business Faces a New Kind of Fear,* HARv. Bus. REV., Jan.-Feb. 1990, at 122.

[568] O'Hear Michael M (n 428) 66

[569] Ibid.

[570] Richard L Revesz, and Stewart Richard B., eds. *analysing superfund: Economics, science and law*. Routledge, 2016.

damage to buildings, or even the creation of an "*environmental stigma*" that discourages the property's use and development even after it has been cleaned up.[571]

Seventh and finally, *ecological damage* can be caused by an environmental offence. The purpose of this term is that it should embrace any and all harms to the natural environment that may result from illegal contaminant discharge and it has to be said that this category is broad, amorphous, and contentious.[572] It has been noted by other commentators that harm of this sort has in the past not received consideration in the legal system anything like as sophisticated as the others have had.[573]

5.2.2 Culpability

Mens rea plays a "*paramount role*" in criminal law theory.[574] It is through *Mens rea* "*guilty mind*" that the criminal law imports a measure of moral culpability into the equation. What the criminal law does is to express on behalf of society a moral outrage and condemnation for conduct deemed culpable. Society's judgement that the person accused is responsible for harmful conduct but is also worthy of blame represents the law drawing a line. It is at this point that the criminal law diverges from the law of tort and a bad act becomes a crime.[575]

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[571] Jennifer L Young. "Stigma damages: Defining the appropriate balance between full compensation and reasonable certainty." *SCL Rev.* 52 (2000): 409. (Describing stigma damages and debate over the compensability in tort suits) السجناء، الرياض، ٢٠٠٧. ص 75 المركز العربي للدراسات الأمنيةّ، المسئوليّة الجزائيّة المترتبة على الأفراد [Arab Center for Security Studies, Criminal Responsibility of Individuals Prisoners, Riyadh, 2007. P. 75]; علاء سليمان احمد ، التفاعل الاجتماعي بين السجناء المفرج عنهم والمجتمع المحلي –دراسة ميدانيّة على نمط الوصم ونتائجه,المكتبة المركزيّة – جامعة القاهرة، 1997 ص 47[Alaa Suleiman Ahmed, Social Interaction between Released Prisoners And the Local Community - A Field Study on Stigma Patterns and its Results, Central Library, Cairo University, 1997, p. 47]
Although there is considerable overlap between this category and that of social and economic disruption, the two categories are quite distinct. When an empty property becomes used as an illegal dumping ground, for example, although no interruption necessarily results, the value of the property and of nearby properties is likely to be reduced. Similarly, in evacuation of a community following an environmental threat, the destruction may lead to no actual damage to property, and this property damage category overlaps with the remediation cost category. Remediation costs are, at least in part, incurred to deal with the damage to property, while the fear of being liable for the costs of remediation can cause the market value of a contaminated property to fall.

[572] Michael Bowman, and Boyle Alan E. *Environmental damage in international and comparative law: problems of definition and valuation*. Oxford University Press, 2002.

[573] Ibid.

[574] Jerome Hall. *General principles of criminal law*. The Law book Exchange, Ltd., 2010.

[575] Kathleen F Brickey (n 558) 487.

Under Iraqi law, there is strict liability to prosecution for the storage or build-up of substances likely to cause damage should these substances escape into the natural environment. Some exceptions to this liability include pollution consequential to i) an act of God such as an earthquake, tsunami or flooding ii) an act caused by a third party e.g. sabotage iii) fault by the plaintiff iv) consent by plaintiff v) natural use of land by defendant and vi) statutory authority.

According to Article 211:

> A person who has established that the injury has arisen from a cause beyond control such as by an act of God, an accident, a force majeure, by the act of a third party or the fault of the injured himself shall not be liable on damages unless there is a provision (in the law) or an agreement otherwise.[576]

5.2.3 Deterrence

Culpability and deterrence are inextricably intertwined. Culpability supplies the stigma that is intended to shame the convicted offender and deter others from risking similar disgrace. If criminal law has a deterrent value, it is because the state punishes through the use of its coercive power. The business community is strongly incentivised not to commit regulatory crimes because of the threat of criminal penalties,[577] and that is particularly true in the case of corporate officials because the social group that they belong to is highly aware of censure and loss of status.[578] To put it another way, a jail sentence is a business cost that the consumer cannot be asked to bear.[579]

[576] The Civil Law no 40 of 1951 art 211
[577] Richard J Lazarus (n17) 867.
[578] Margaret K Minister. "Federal Facilities and the Deterrence Failure of Environmental Laws: The Case for Criminal Prosecution of Federal Employees." *Harv. Envtl. L. Rev.* 18 (1994): 137.
[579] J. Preston Strom Jr. "The United States Attorney's Policy towards Criminal Enforcement of Environmental Laws." *SC Envtl. LJ* 2 (1992): 184.

The punish may "*specific deterrence*," in which case they are applied directly to the offender, or as "*general deterrence*," where they deter a potential offender through that potential offender's observation of the deterrent being applied to an actual defender.[580]

In accordance with the generally accepted tents of deterrence theory, the behaviour of likely offenders is greatly influenced by the prospects of being detected and the severity of the amercement. Thus, if this theory is accepted, then the effective application of environmental laws can be strengthened either by escalating the severity of penalties for infringement or by greater investment in detection.[581]

Thus, it can be argued that a high level of enforcement should lead to an enhancement of the quality of the environment. However, McKean has argued that high costs of enforcement measures which fail to bring about greater degrees of compliance are ineffective and should "*influence choices about how to regulate, and in some instances, about whether to regulate at all*".[582]

Thus, policy makers have to take into account the level of financial resources to be allocated to detection and enforcement, what kind of penalty should be imposed for breaches of the law, i.e. fines, imprisonment or a combination of both and how enforcement policies should change in relation to the allocation of enforcement funding.[583]

On the other hand, greater emphasis is needed on finding effective ways to avert and thwart crime as White and Heckenberg have asserted, "*The best way to respond to crime is to*

[580] Jeremy Bentham. *The collected works of Jeremy Bentham: An introduction to the principles of morals and legislation*. Clarendon Press, 1996.
[581]Mark Cohen (n 513) 1-3.
[582] Roland N McKean. "Enforcement costs in environmental and safety regulation." *Policy Analysis* (1980): 269-289.
[583]Mitchell Polinsky, A, and Shavell Steven. "The economic theory of public enforcement of law." *Journal of economic literature* 38, no. 1 (2000): 45-76; Shavell, Steven. "Specific versus general enforcement of law." *Journal of political Economy* 99, no. 5 (1991): 1088-1108.

prevent it before it occurs. […] The overall aim of criminal law is to prevent certain kinds of behaviour regarded as harmful or potentially harmful".[584]

While White makes clear how important the "'*big stick*' *of prosecution*" is, and that available sentences should include imprisonment and fines, he is not hopeful that prosecuting and sentencing environmental criminals will become a useful punishment and prevention: "*the criminalisation of environmental crime does not necessarily equate with the prosecution and punishment of environmental offenders*".[585]

On the other hand, environmental harms and environmental victimisation are intrinsically linked by the process of cause and effect. A broad definition would say that a victim could be anyone or anything who or that has suffered harm from environmental disruption, but what will be viewed by the authorities as a victim will be a function of the degree to which the law criminalises or sanctions harm to the environment. Whether the victim is the *environment*, an individual, or *the general public* will be governed by whatever term is used in the specific context of this offence, and by the way in which the law defines the offence. The focus of criminal law tends to be on individual victims, and yet in legislation on the environment, environmental harm is often described as an offence against environment.[586]

Recognising the environment as a victim widens the perception of acceptable and non-acceptable harms beyond an anthropocentrically limited perspective. This would allow extension of the criminal law along ecocentric lines, introducing new forms of criminal behaviour to protect the environment from victimisation.[587]

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[584] Rob White and Diane Heckenberg. Green criminology: An introduction to the study of environmental harm. London; New York: Routledge. (2014). 1976-1984.

[585] Rob White. "Prosecution and sentencing in relation to environmental crime: Recent socio-legal developments." *Crime, law and social change* 53.4 (2010): 365-381; Rob White. *Green Criminology*. Springer New York, 2014; Antony Pemberton (n 386) 63; C. M.Spapens, A., White R. D., and Kluin M (n 387) 221-236.

[586] Helena Du Rées. "Can criminal law protect the environment?" *Journal of Scandinavian Studies in Criminology and Crime Prevention* 2.2 (2001): 109-126.

[587] Louise A Waddell (n 520).

The proposed definition of victim would be this: an entity, human or non-human, which has had its interests set back to its injury. Injury is defined as "*any effect that results in altered structure or impaired function, or represents the beginnings of a sequence of events leading to altered structure or function"*.[588] This excludes environmental causalities caused by natural disasters, and ensures that it covers all events caused by human action that result in tangible harms.[589] This abstract definition provides a way to push perceptions of victims beyond the anthropocentric and individualised confines of the criminal law.[590]

5.3. The Purpose of Environmental Criminal Law

The purpose of criminal law is to protect the interests and values of a society. In order to be applicable, some harm or damage must have been perpetrated which adversely impacts on the values of society. The right to live in a healthy environment is a value of society which is covered by criminal law. Thus, criminal law protects the air environment in the interests of society and therefore prohibits intentional or negligent acts which impair the quality of the air environment which is valued by society which is entitled to enjoy a healthy atmosphere.[591]

However, it is pointed out in the literature administrative sanctioning might be preferred in some instances because having recourse to criminal law can be expensive.

These more lenient sanctions which avoid bankruptcy may be applied when the level of damage is low. Alternatively, preventative measures may be imposed through restricting licences which are effective in preventing the damage in the first place rather than punishment after the damage has been done. Such preventative measures can avoid infringements through ignorance of the law and can be effective also by providing

[588] Eric Chivian (n 384)
[589] Christopher Williams. "An environmental victimology." *SOCIAL JUSTICE-SAN FRANCISCO*- 23 (1996): 16-40.
[590] Rob White. "Environmental issues and the criminological imagination. *"Theoretical Criminology* 7.4 (2003): 483-506.
[591] Al-Fil Ali (n 409)

appropriate timely information. [592] Due to the fact that the standard of proof in administrative law is low, it is probable that enforcement and likelihood of detection. This raises the question as to whether environmental law is best enforced by means of criminal law.

It has been argued by Lode that criminal law is a last resort (*ultimum remedium),* and should not be used hastily. The *ultimum remedium*-doctrine can be interpreted as meaning that criminal law should only be resorted to if the other legal instruments do not work.[593]

One meaning of the *ultimum remedium* doctrine would be that recourse should only be had to criminal law when other forms of legal action are fruitless and it may well be true that, while there are convincing reasons in theory for the use of criminal punishments, it is possible for civil law sanctions or administrative fines to deal satisfactorily with some minor licence condition violation that the company has committed even though it operated in good faith. The fact is, though, that authorities using administrative sanctions will be better able to negotiate for compliance with licence terms if a public prosecutor is standing behind them with the power to begin proceedings under criminal law if the administrative request made of the company does not meet with compliance. In this way, the value of the criminal law as backup to administrative law enforcement is clearly seen.[594]

The discussion provides some idea of how criminal law theorists view the aims of criminal law in general terms. What is of more immediate concern for present purposes, however, is whether these purposes are compelling when used to justify criminal enforcement of environmental offences?

However, for a criminal punishment to be effective, the probability of apprehension and conviction must be high and a commensurate fine should be imposed.

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[592] Roger Bowles, Faure Michael, and Garoupa Nuno. "The scope of criminal law and criminal sanctions: An economic view and policy implications. *"Journal of Law and Society* 35.3 (2008): 389-416.
[593]Birgit, Schönberger and Toussaint (n 8) 27-38.
[594] And, in some jurisdictions, more severe sanctions such as capital punishment.

Another integral aspect of deterrence is that compliance and enforcement action is publicised. In addition to imposing meaningful sanctions, an effective penalty regime must send a strong message to ensure that others comply.[595] This is illustrated by the popular quote of American diplomat and politician Chester Bowles:

20 percent of the regulated population will automatically comply with any regulation, 5 percent will attempt to evade it, and the remaining 75 percent will comply as long as they think that the 5 percent will be caught and punished.[596]

5.4. The Role of Environmental Criminal Law

Criminal law has always had a place in environmental protection regimes of all jurisdictions. Many criminal sanctions have been imposed on wrongdoers of environmental offences as well as the possibility of an action in tort to demand compensation for personal and property damage resulted from environmental damage.[597]

Historically, criminal law was the earliest remedy adopted in many countries to protect the natural environment. Although it continues to have a role, which varies in importance from one jurisdiction to another, in many countries there has been law reforms to formulate more substantive criminal offences against the environment.[598]

Some infringements are considered to be so serious as to merit the *ultimum remedium* of stigmatisation as criminal.[599]

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[595] Al-Fil Ali (n 409)

[596] Chester Bowles. *Promises to keep: My years in public life, 1941-1969*. Harper & Row, (1971).

[597] Neil A. Gunningham, Thornton Dorothy, and Kagan Robert A. "Motivating management: Corporate compliance in environmental protection." *Law & policy* 27, no. 2 (2005): 289-316.

[598] Franco Giampietro, and Miccoli Saverio. *Assessment of Damage to the Environment*. Council of Europe, 1992.11-14;دار النهضة العربية , ط 1 , تعويض الاشخاص الطبيعية والمعنوية عن الضرر المعنوي , حسين البراوي , 2007 22 ص , م [Al-Barawi Hussein, compensation of natural and moral persons for moral damage, I 1, Dar al-Nahda al-Arabiya 2007, p. 22translated from Arabic to English by the author]

[599] Ibid (n 21) art 35

5.4.1. Limiting factors

The use of criminal law for environmental protection has given rise to a significant discourse among scholars on its effectiveness as a means for preventing and remedying harm to the environment. Concerns have also been raised about the danger of selective prosecution and lenient sentencing practices which, in turn, can also lead to the disparagement of criminal law. A further problem is the lack of rigorous standards in criminal law while standards in administrative law permit direct interaction between the administrative agency and the subject, the lack of interaction in criminal law makes it a "*soft*" option and leads to its impairment.

The high cost of having recourse to criminal law for environmental protection could also have an adverse effect.[600]Especially in developing countries which frequently lack the resources required to enforce criminal provisions. Indeed, environmental deterioration is often closely associated with poverty. For that reason, the protection of the environment in a developing nation cannot be separated from the progress of the indigenous population.[601]

Other disadvantages of having recourse to criminal law include the higher burden of proof required, the difficulty of determining knowledge or intentionality as well as the impossibility of convicting organisations of criminal infringements within certain jurisdictions. Furthermore, criminal law can sometimes be applied in a purely perfunctory fashion to give the impression that something is being done when in fact the objective of the law in protecting the environment is being circumvented.[602]

[600] Al-Fil Ali (n 409)
[601]Ruth Greenspan Bell, and Russell Clifford. "Environmental policy for developing countries." *Issues in Science and Technology* 18, no. 3 (2002): 63-70.
[602]Frate Del (556) 22.

Amongst the difficulties surrounding evidence are the problems of determining *mens rea*, proving the effects of pollution and determining its source, the contaminant and the contaminator.[603]

In some industrialised countries devices have been installed to facilitate the attribution of criminal responsibility by tracing sources. In other countries, strict liability has been used in order to overcome some of the difficulties associated with the use of criminal law. Strict liability applies irrespective of culpability, although a defence is possible on grounds of an honest and reasonable error.[604]

However, these solutions can raise additional difficulties as one of the main objectives of criminal law is deterrence and with degree of culpability being assessed without fault the deterrent aspect can be forced out.

There is also an issue regarding liability of criminal sanction. Of course, individual persons may be liable but, in certain jurisdictions, legal persons such as organisations, government bodies or even the environment agencies may be criminally and civilly liable for breach of statutory duty.[605]However, in most countries, it is currently not possible to assign criminal liability to legal persons.[606] Indirect approaches to punishing organisations are sometimes possible by penalising employees as proxies.[607]Variations in holding organisations to account in law have resulted from the different ways that laws have developed over time

[603]Jason Richard Furey. "A Consistent Approach to Assessing Mens Rea in the Criminal Law of England and Wales." (2010).28-30; Laurie L Levenson. "Good faith defences: Reshaping strict liability crimes." *Cornell L. Rev.* 78 (1992): 401.
[604]Al-Kandari Mohamed (n 529)
[605]Castle, P. "Study of Civil Liability Systems for Remedying Environmental Damage." *Londres, Royaume-Uni: CMS Cameron McKenna* (1996).13
[606] For example, according to Article 121-2 of French Criminal Code "*Legal persons, with the exception of the State, are criminally liable for the offences committed on their account by their organs or representatives, according to the distinctions set out in Articles 121-4 and 121-7.*
However, local public authorities and their associations incur criminal liability only for offences committed in the course of their activities which may be exercised through public service delegation conventions.
The criminal liability of legal persons does not exclude that of any natural persons who are perpetrators or accomplices to the same act, subject to the provisions of the fourth paragraph of Article 121-3"; Philipsen, N. J., M. G. Faure, and K. Kubovicova (n 233) 15.
[607]Maluki Iyad (n 529) 153; Raslan Nabila (n 519)

and also impositions of sanctions on those about whom a presumption of *societas delinquere non potest* exists.[608]

5.4.2. Potentials

Nevertheless, having recourse to criminal law can have certain advantages including the deterrent effect which public exposure of a criminal conviction might attract. The stigma attached to conviction for a criminal offence is likely to be much greater than for a civil conviction. This is especially the case where there is a growing range of innovative penalties which can be imposed. Other examples of advantages of recourse to criminal law include the enforcement of self-responsibility and the establishment of norm-obedience. Ultimately, the threat to individuals representing corporations of sentencing to terms of incarceration represents a most powerful deterrent.[609]

Whilst these criminal sanctions may have greater force as deterrents as well as drawing public attention to the importance of protecting the environment, this advantage would cease if the probability of detection and prosecuting was low.[610]Where the probability of detection and prosecution is low, it is likely that some organisations would take the risk and would regard any fines simply as the cost of doing business. Such disdain for the law can only be offset by severity of sanction.

[608]Lucas Bergkamp. *Liability and Environment: Private and Public Law Aspects of Civil Liability for Environmental Harm Inan International Context*. Martinus Nijhoff Publishers, 2001.211; Anna Alvazzi Del Frate. *Environmental crime, sanctioning strategies and sustainable development*. No. 50. Unipub, 1993.41; Marie-Louise Larsson, ed. *The law of environmental damage: Liability and reparation*. Vol. 1. Martinus Nijhoff Publishers, 1999.219

[609]Pascal Wirz. "Imprisonment for Hard Core Cartel Participation: A Sanction with Considerable Potential." *Bond L. Rev.* 28 (2016): 89; Christopher Kennedy. "Criminal sentences for corporations: Alternative fining mechanisms." *Cal. L. Rev.* 73 (1985): 443.

[610]Al-Fil Ali (n 409)

Another advantage of recourse to criminal sanctions in relation to domestic conduct is that offences could be clearly defined in conformity with substantive and procedural domestic law and hence ensure compliance with the principle of legality.[611]

5.4.3. Implementation

Generally, infringements of environmental laws are subject to the sanction of a fine and/or imprisonment.[612]

Fines are the more traditional means for penalising environmental offenders. However, there has been growing concern in some countries that the leniency of the maximum fine allowable under law is inadequate as a deterrent. Even where law reform has taken place, the imposition of a fine remains the preferred option in most cases, albeit that the fine is now more commensurate with the magnitude of the damage caused. Various attempts at law reform have included increasing maximum fines and minimum fines, imposing higher fines on repeat offenders, increasing fines on organisations to significantly exceed those imposed on individuals and "*day fine*" systems based on the income of the offender for continuing offences. The rationale for these reforms is to increase the deterrence force to discourage would-be offenders and to eradicate the practice of treating fines as the cost of doing business which would be significantly less than installation costs of technological approaches to eradicating contaminants.[613]

Nevertheless, many countries have utilised civil or administrative sanctions to encourage conformity to environmental laws, because having a wide range of sanctions is often considered more effective than the traditional penal sanctions of fines and

[611]Valentina Spiga. "Non-retroactivity of criminal law: a new chapter in the Hissene Habré Saga." *Journal of International Criminal Justice* 9, no. 1 (2011): 5-23.
[612]U.S.A, Panel, UK Sentencing Advisory. "Environmental Offenses: The Panel's Advice to the Court of Appeal." (2000).7
[613]Albrecht Eight, Hans-Jorg. "Post-adjudication dispositions in comparative perspective." *Sentencing and sanctions in western countries* (2001): 293; Alan T Harland. "Court-ordered community service in criminal law: The continuing tyranny of benevolence." *Buff. L. Rev.* 29 (1980): 425.

imprisonment.[614]Yet, the concern about the increasing number of more serious cases of pollution has increased the urgency of law reform to increase the deterrence effect by means of fines more commensurate with the seriousness of the crime. These reforms assess the effectiveness of administrative and civil laws in the past. Innovative approaches to sanctions include exposure to adverse publicity, confiscation of proceeds of crimes, redress mandates, enforcement measures such as temporary cessation of business activities, complete shutdown of business activities in the most serious cases and unpaid service within the community. [615]

Administrative sanctions are common in many countries. These can include pecuniary fines or seizure of proceeds of the illegal activities and orders to pay compensation. Also included are orders to clean up and the limitation or complete cancellation of licences to practice. Similar sanctions are available in civil law as remedies.[616]

5.5. Elements of Environmental Crime

Cases involving conduct that amounts to an environmental criminal offense raise the question of who can be held criminally liable under the environmental laws.[617]

In general, Jessup do not agree on a single definition of criminal responsibility, and there were no direct definitions of criminal responsibility. Many commentators have adopted from the law definition from the French philosophy, which is known as a "*commitment to bear the legal consequences for the availability of the elements of crime*"[618]. Criminal responsibility, in this sense, conditions as described to prove right to those who commit a criminal act. It consequently raises physical and legal actions from the criminal case, which

[614]Al-Budairi Ismail and Ibrahim Hawra (n 4) 88
[615]John C Coffee (n 477) 386-459.
[616] Frate Del (556) 24-26.
[617] Kevin A.Gaynor, and Bartmen Thomas R. "Criminal Enforcement of Environmental Laws." *Colo. J. Int'l Envtl. L. & Pol'y* 10 (1999): 39.
[618] Ethan H Jessup. "Environmental Crimes and Corporate Liability: The Evolution of the Prosecution of Green Crimes by Corporate Entities." *New Eng. L. Rev.* 33 (1998): 721.

are contained in resolutions down to judge the judicial and the subsequent rhythm penalty of sanctions and precautionary measures.[619]

Criminal liability is one of the basic elements of the Iraqi Penal Code, but the legislature did not specify it precisely as it is content with the mere mention of its restrictions thus giving the criminal court judges the possibility to determine the parameters of these restrictions clarified by the legislature.[620] The liability generally may be either by force or by action. In the first concept, it means the power of a person to assume the consequences of his behaviour and thus is a quality or a state of the person, whether he commits something, which requires accountability, or not. The second concept charges the person with the liability of his behaviour based on what he/she had really done.

The criminal liability is the power of the person to bear the criminal sanction arising from his crimes and the penalty may either be in the form of sanctions and preventive measures, and on this basis the liability can be defined as "*the authority of the person to withstand the punishment and preventive measures prescribed by the legislature as a consequence of the crime he/she has committed*".[621]

The literature equally indicates that even though there are strong arguments for corporate criminal liability,[622] there are reasons to apply criminal liability to individuals within the corporation as well. I have shown that non-monetary sanctions may have to be applied to environmental crime as well. Indeed, corporate entities may also be equally unable to pay for the damage caused by their pollution. A polluting corporation may escape a liability suit because the damage to the environment is widely dispersed and therefore difficult to trace. Monetary sanctions may exceed the corporation's assets and thus not be an

[619] Sharif and Rashid (n 389) 99
[620] The Iraqi Penal Code No. 111 of 1969 art 80
[621] Jaber Hussam, Environmental Crime, 2nd ed. (Cairo: Dar AL-kutub Legal, 2011), 72-74.
[622]Lawrence Friedman. "" In defence of corporate criminal liability" 1999-2000." *Harvard Journal of Law and Public Policy* 23: 833; Dan M Kahan. "Social meaning and the economic analysis of crime." *The Journal of Legal Studies* 27, no. S2 (1998): 609-622.

effective deterrent. Because non-monetary sanctions are hard to apply to corporations (this is obvious for incarceration), they must also be applied to individual employees as well.[623]

Thus, corporate liability (leading to fines and non-monetary sanctions applicable to corporations) should be combined with the criminal liability of employee's representative of the organisation. Despite this, some authors have been critical of corporate criminal liability, emphasising the need to hold representatives individually liable.[624]

Another criticism has been levelled by Jennifer Arlen who proposed that the traditional argument in favour of what is referred to as vicarious liability has been viewed as an indirect means of sanctioning employees who have perpetrated crimes, assuming that corporations subject to criminal liability will in turn sanction the wrongful agency.[625]

However, Arlen points out that this can lead to unintended consequences as the monitoring of employees may have cost implications urging the company to increase its level of corporate enforcement expenditures. This might reduce the number of agents who commit crime by increasing the probability of detection and thus reducing the costs of crime.[626]

The crime of environmental pollution is frequently committed, not by individuals, but by people acting on a company's behalf, and many serious environmental pollution cases have been committed by corporations. Where this is the case, a question that has to be addressed is whether criminal liability should lie with the corporation, the employee, or both of them.[627] Criminal liability may be imposed in any of three ways for cases of corporate environmental crime. It may be that only the corporation is held liable. It may be that only the

[623]Michael Faure. "Environmental crimes." (2009).330-33
[624] The Iraqi Penal Code No. 111 of 1969 art 80
[625]Al-Kandari Mohamed (n 529)
[626]Jennifer Arlen. "The potentially perverse effects of corporate criminal liability." *The Journal of Legal Studies* 23, no. 2 (1994): 833-867.
[627]2005 مصر, مكتبة الآداب , جرائم البيئة بين النظرية والتطبيق, اشرف هلال) [Helal Ashraf, Environmental Crimes Between Theory and Practice, Library of Arts, Egypt (2005)40 translated from Arabic to English by the author]

individual who carried out the actual violation is held liable. On the other hand, both the individual and the corporation may be held liable.[628]

On the other hand, in the literature, seeing a range of approaches taken in defining *"environmental crime"*.

One interpretation of environmental crime is the narrow one that says it only refers to activities that are prohibited by the criminal law as it currently stands.[629]

Other interpretations include regulatory and administrative sanctions by stretching the definition of environmental crime to include formal breaking of a rule, whatever that rule may be, and/or any illegal activity. This interpretation accepts that, such is the influence that business interests may have over regulation and law, that something that in one jurisdiction would be criminal may encounter lesser sanctions in another jurisdiction.[630]

Then again, there are interpretations that would include activities described as *"lawful but awful"*. This gives recognition to the fact that a number of disruptions to the environment are in fact legal and happen with society's consent.[631]

According to Situ and Emmons, *an environmental crime is an unauthorized act or omission that violates the law and is therefore subject to criminal prosecution and criminal sanctions. This offense harms or endangers people's physical safety or health as well as the environment itself. It serves the interests of either organization typically corporations or individuals.*[632]

Criminal law which protects the environment is characterised by certain features common to many laws. This means that the imputed offending act must be subject to criminal law and that it is committed with clear knowledge that it is a breach of law and that it is

[628] Michael Faure, and Visser Marjolein (n 288) 10.
[629] Eileen Skinnider (n 385) 1
[630] Al - Jourani Nasser (n 262)
[631] Du Rées (n 571); Samantha Bricknell. "Environmental crime in Australia." *AIC reports. Research and Public Policy series.* (2010): xviii.
[632] Yingyi Situ, and Emmons David. *Environmental crime: The criminal justice system's role in protecting the environment*. Sage Publications, 1999,3.

committed with the intention of causing harm to the natural environment. Thus, environmental crime is characterised by similar features found in conventional crime.[633] Thus, environmental crime consists of four elements, namely the act itself which is adjudged to be criminal, that the act is committed with clear knowledge that it is criminal in nature, that it is committed with the intent of causing harm to the environment and without coercion. The third element is intent, implying that the crime was carried out with full intent and without any coercion. The final element is unintentional criminal acts stipulated in criminal law.

In this sub-section the issue of proving an environmental crime of air pollution in Iraq will be discussed.

5.5.1 Actus Reus

There is no definition of environmental law in Iraqi law, nor are its elements identified.[634]In fact Iraq is among those countries that has yet to enact a law that defines the environmental crime and its elements, because the Iraqi legislature does not distinguish between environmental crime and other modern crimes and therefore has the same elements, which include the conduct or the behaviour criminalised by law; the criminal's knowledge that his conduct or behaviour is criminal[635]and the criminal's intent to commit the crime.[636]

5.5.2.1.1 Polluting is an Actus Reus

Because pollution involves an act of adding a substance of some kind to the environment, the act of pollution thus involves 'adding behaviour'.[637]In Iraqi law, the added substance can be a solid, a liquid or a gas. Additionally, man-made heat, vibration, noise or

[633]Antonio Cassese. "On the current trends towards criminal prosecution and punishment of breaches of international humanitarian law." *European Journal of International Law* 9, no. 1 (1998): 2-17.
[634] AL-Awaji Mustafa (n 40) 90.
[635] Ibid (n 21) art 33
[636] Al Ghurairi Adam (n 42) 382
[637]Smith, Kirk R. "Indoor air pollution in developing countries: recommendations for research." *Indoor air* 12, no. 3 (2002): 198-207.

radiation are consider as 'additions' to the natural state of the environment and so are considered as pollutants.[638]

The law, thus, considers all materials that damage the natural state of air, water or soil as pollutants.[639]

"*Addition*" in the context of Iraqi law means the infiltration of the natural environment by some additive which was not previously present. It is of no concern whether what is added is similar to or different from the natural make-up of the environment. In the case where the added substance is similar to what is already there, the act of pollution involves upsetting the natural balance of the environment by either increasing or decreasing the amount of certain substances already present in the natural environment.[640]

A good example of this is an industrial process which involves the release of gases, already present in the atmosphere but this release adversely changes the natural balance of those gases in the atmosphere.[641]

5.4.2.1.2 The nature of environmental pollutants

As the natural environment is protected by law, it is the addition of the polluting materials which constitutes the violation of the law and the added substance which is the material element of the law.[642]

Iraqi Law makes no distinction between the different types of substances nor their effect on the environment. Any substance added to the natural environment is deemed to be an offence. For example "*spraying or using pesticides or any chemical compounds for*

[638] Ibid (n 21) art 2 (7)
[639] Ibid (n 21) art 2 (8)
[640] Al Ghurairi Adam (n 42) 382
[641] Robert V.Percival and others. *Environmental regulation: Law, science, and policy*. Wolters Kluwer Law & Business, 2017.521
[642] O'Hear Michael M (n 428) 133.

purposes of agriculture, public health or other purposes, is prohibited."[643] The law also states that "*the burning of any kind of fuels or other things for the purposes of industry, power generation or constructions or any other commercial purposes*" that constitutes an addition to the environment beyond limits fixed by law is prohibited by law.[644]This is stated in Article (15) of the Law on the Protection and Improvement of the Environment, No. 27 of 2009. However, the law is somewhat opaque in including all substances added to the environment without any distinction.[645]

5.5.2.1.3 Polluting conduct must affect one element of the environment crime

The act of pollution essentially involves the addition of a substance or energy to the environment.

The Law on the Protection and Improvement of the Environment, No. 27 of 2009, used two different methods to identify what the environment was and how it was the subject of protection. These two methods are as follows:

First Method:

Central to this method is that the environment under protection must be clearly defined and, consequently, no crime is committed unless the addition is being made to this specific environment as defined.

Second Method:

By this method, no specific environment is defined. Thus, the violation of the law occurs the moment its elements exist regardless of which environment is affected by the pollutants.[646]

[643] Ibid (n 260) art 491and 497
[644] Ibid (n 21) art 15
[645] Al Ghurairi Adam (n 42) 382
[646] Ibid (n 21) art 2; Al-Fil Ali (n 409)

5.5.2 Knowledge of environmental violations

As in other modern crimes, the act of polluting the environment is culpable if is carried out "*knowingly*". In order that the law be fair in its applications by avoiding the penalisation of people in ignorance of the law, there is an element of discretion based on knowledge which is a constitutional guarantee based on due process.[647] The "*knowing*"[648]requirement in environmental crimes, however, has been the subject of considerable controversy arising from the fact that the environment law lays down no specific standard of knowledge.[649]

To be punishable by law, the alleged perpetrator must realise that their activity results in damaging the environment which is protected by the law.[650]The alleged offender must be fully cognisant of the circumstances surrounding their actions and how these constitute unlawful pollution. Without such cognisance of the criminal nature of their action and its damaging consequences, there is no criminal intent on the part of the alleged offender. Knowledge must comprise three elements:

- Knowledge that the act is a violation of the law;
- Knowledge that the act being committed poses a threat to the interests being protected by the law;
- Knowledge of the circumstances of place and time in which the act is committed.[651]

Some scholars believe that "*an act is done knowingly if the defendant is aware of the act and does not act through ignorance, mistake or accident*." However, although the law requires cognisance of the act, it does not clearly state what facts the defendant should have knowledge of. The court of appeals ruled that a defendant must have knowledge that the

[647] Al Ghurairi Adam (n 42) 382
[648]Hamdan Qudah. "Towards International Criminalization of Transboundry Environmental Crimes." (2014).99
[649]David M Uhlmann. "Environmental crime comes of age: The evolution of criminal enforcement in the environmental regulatory scheme." *Utah L. Rev.* (2009): 1223.
[650] Lazarus Richard J (n 566) 2468-84
[651]Al - Jourani Nasser (n 262) 175

substance was waste and was a potential pollutant in some appeals. What is less clear is whether the appeal court required knowledge of all non-jurisdictional facts. For example, would the prosecution have to prove that the defendant did know that they did not have a permit and therefore was breaking the law.[652]

Thus, by requiring "*knowing violation*" of a regulation or permit, the law incorporates knowledge of the law into the elements of the offense.[653] This is appropriate in the majority of environmental crimes, due to the fact that Iraqi environmental laws are so complex that criminal law must be vigilant to avoid convictions for simple misunderstandings or errors. Consequently, to secure a conviction evidence must show that the defendant had knowledge of the law and therefore had knowingly violated it. Despite this, a good faith, reasonable misinterpretation of the law should be a line of defence,[654] especially in cases where the alleged offence involving exceeding what the permit allowed due to a simple misunderstanding.[655]

[652] Al-Kandari Mohamed (n 529)

[653] In United States v Weitzenhoff, the defendants were convicted for violating the Clean Water Act (CWA) which provides that any person who 'knowingly violates' certain sections of the Act 'or any permit condition or limitation implementing any such sections' is guilty of a felony. The defendants were both sentenced to significant terms of imprisonment. The defendants were managers of a sewage treatment plant in Hawaii and they had instructed employees to pump, under cover of darkness, 'waste activated sludge' directly into the ocean. This effluent did not comply with the standards with which the plant had to comply. They had instructed the employees who did the pumping not to say anything about the discharges, because if they all stuck together and did not reveal anything, 'they [couldn't] do anything to us'. The Court of Appeals confirmed their convictions by holding that the word 'knowingly' in the relevant section of the CWA merely required that the defendants knew that they were discharging pollutants, not that they knew that the discharges violated the relevant permit. This decision was followed in United States v Hopkins. *United States v Weitzenhoff* 1 F.3d 1523 (9th Cir 1993) amended on denial of rehearing and rehearing en banc 35 F.3d 1275 (9th Cir 1994) cert denied 115 S Ct 939 (1995); *United States v Hopkins* 53 F.3d 533 (2d Cir 1995).

[654] In the Resource Management Act, New Zealand's primary environmental legislation, section 340 provides that where an offence is committed by an agent or employee, the corporation is prima facie liable as if it had 'personally committed the offence'. Liability may be avoided if the corporation is able to show that the director or persons involved in the management of the corporation did not know or could not reasonably have been expected to know that the offence was to be or had been committed or that they took reasonable steps to prevent its commission. In addition, the defendant must have taken all reasonable steps to remedy the effects of the offence. It has been held that the corporation is liable for an employee's offence even where such employee cannot be said to represent the directing mind and will of the corporation. *Auckland Regional Council v Bitumix Ltd* (1993) 1B ELRNZ 57.

[655] Ibid

The Convention on the Protection of the Environment through Criminal Law principally requires the parties to adopt it as legislation at a national level.[656] The Convention first lists the various environmental offences by categorising them as intentional offences, negligent offences or other criminal or administrative offences. These are obligatory and parties are obliged to enshrine them into their domestic law. Both intentional and negligent categories consist of what are considered `hard core' criminal offences. These are to be found in Articles 2 and 3. Five offences, which differ in terms of their `mens rea', intentional or negligent are listed under both headings. The first offence is the release, discharge or introduction of substances or ionizing radiation into the air, soil or water, such that it causes death or serious injury to any person, or poses a significant risk of causing death or injury to any person. When done intentionally, it constitutes the `autonomous offence' and the death or serious injury must have been intended. This is intentional polluting.

The next four offences require the action to be unlawful, as defined in the Convention. The second offence is the unlawful release, emission or discharge of a quantity of a substances or ionizing radiation into the air,[657] soil or water, which causes or is likely to cause their lasting deterioration or death or serious injury to any person or substantial damage to protected monuments, other protected objects, property, animals or plants.[658]

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[656] The protection of the environment by enshrining it in criminal law at national level was created and passed by the Council of Europe. The Convention was drawn up in response to the urgency of combating environmental pollution. The Convention criminalises illegal acts at a national level which contaminate the environment. In this context it addresses issues of jurisdiction, sanctions, restoration of the environment, issues of confiscation of assets and corporate liability and cooperation between authorities and between States, and non-governmental organisations (NGOs); Convention on the Protection of the Environment through Criminal Law (herein referred to as the Convention), available at<http://www.coe.fr/eng/legaltxt/172e.htm>.

[657] In the decision of the Iraq Federal Court of Cassation concerned the environmental damage caused by Mobile phones turrets, decided to ratify the decision of the Court of Appeal to dismiss the primitive judgment on the grounds that "*The turrets is suitable according to technical specifications and environmental requirements and the radiation issued by it is within the permissible range, so there is no error that can be attributed to the telecommunications company so that it can be said*"; Jaber Malik and Abis Hussam (n 621); قرار محكمة التمييز الاتحادية العراقية رقم 1591 /الهيأة الاستئنافية منقول/ 2011, الصادر بتاريخ 20 / 10 / 201[The decision of the Iraqi Federal Court of Cassation No. 1591 / The Appeals Board transferred / 2011, issued on 20/10/2012].

[658] Convention on the Protection of the Environment through Criminal Law (herein referred to as the Convention), available at<http://www.coe.fr/eng/legaltxt/172e.htm>.

5.5.3 Criminal intent in intentional environmental crimes

Criminal intent is an important element of most legal systems placing the burden of proof firmly on government prosecution departments.[659]

Nevertheless, in most appeal cases of criminal law, the appeal courts have differentiated between general-intent and specific-intent crimes, giving preference to the former. The prosecutor does not have the burden of proof that the defendant had a specific intent to breach the law. Thus, the prosecution would not be required to prove that the defendant knew the exact nature of the substance being emitted into the environment or that the emission of the substance had been subject to specific regulations; rather, criminal intent could be established by producing evidence that the defendant had been aware of the potential of the substance to cause harm to persons or the environment.[660]

Ignorance of the law is no defence as such ignorance is still culpable. It could be a defence to rely on an administrative action; but the defendant would have the burden of proof to show that such reliance was reasonable in the circumstances. Reliance on poverty or the need to save a business from failing cannot justify breaches of environmental laws. Thus, a wide range of persons or companies may be subject to criminal prosecution.[661]

Criminal intent consists of a psychological tendency which is manifested by the behaviour of a person or their organisation which adversely affects the interests protected by the criminal law in order to achieve an illicit purpose.

In the case of intentional breaches of the law, the focus is on the criminal behaviour and the resultant penalty for such breach whereas, in the case of unintentional crime, the focus is only on the behaviour.[662] Intentional crimes imply that the perpetrator exercised free

[659]Aditi Bagchi. "Intention, Torture, and the Concept of State Crime." *Penn St. L. Rev.* 114 (2009): 1.
[660]Law Commission. "Consent in the criminal law." *Consultation paper* 139 (1995); Jonathan Herring. *Criminal law: text, cases, and materials*. Oxford University Press, USA, (2014).
[661] Al Ghurairi Adam (n 42) 382
[662] In the case of Supreme Court summary in Morrisette v. United States, 342 U.S. 246 (1952), the requirement of an 'evil mind' was viewed from a historical development perspective and demonstrates the extent to which

will in committing the crime whereas, in unintentional crime, the motivational factors which drove the person to commit the crime must also be considered.[663]

5.5.4 Unintentional criminal acts stipulated in criminal law

Certain conduct is treated as an environmental crime without proof of criminal intent:[664]

5.5.4.1 Recklessness

Recklessness in criminal issues means "*faulty judgment, lack of skill or knowledge, and ignorance of something which should be known. Recklessness is represented in a positive action taken by a person without considering its danger or the consequences it might have*".[665] Thus, a person is considered to have acted with recklessness if they have engaged in some activity without being competent[666] to do so or if they acted without due care or diligence and did not desist from doing so even if the fault was unintentional on their part.[667]

5.5.4.2 Carelessness and inattention

To act with carelessness and inattention implies engaging in some activity without paying attention or failing in their duty of care. Such acts may be unintentional but the implication is that sufficient care and attention should have been exercised as would have been reasonably expected from any individual.[668]

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the concept of criminal intent is embedded in US criminal jurisprudence. However, its application has been problematic Thus, in United States v. Bailey in 1980 the Court put on record that "few areas of the criminal law pose more difficulty then the criminal intent required for any particular crime." A major cause of this difficulty, is that it is hardly ever possible to provide direct proof as to the actor's state of mind. Morrisette v. United States, 342 U.S. 246, 251 (1952), where the Court stated, "*The contention that an injury can amount to a crime only when inflicted by intention is no provincial or transient notion. It is as universal and persistent in mature systems of law as belief in freedom of the human will and a consequent ability and duty of the normal individual to choose between good and evil*."

[663] David Crump. "What Does Intent Mean?" *Hofstra L. Rev.* 38 (2009): 1059.

[664] Ibid (n 21) art 35

[665] Helal Ashraf (n 627) 36

[666] Glanville Williams. "Recklessness in Criminal Law". *The Modern Law Review* 16, no. 2 (1953): 234 - 236

[667] Peter W Low. "The Model Penal Code, the Common Law, and Mistakes of Fact: Recklessness, Negligence, or Strict Liability." *Rutgers LJ* 19 (1987): 539.

[668] Jason Richard Furey (n 603) 26-30

Thus an individual may have knowledge of the law and takes the necessary precautions but relies on circumstances to avoid unlawful consequences.[669] Therefore, a person spraying crops would commit an offence if he did not check his equipment or that no other person was in the field at the time.[670]

5.5.4.3 Disregard for regulations

Acting without regard to regulations set out in laws or sets of instructions is a criminal offence as would be the case if a person disregarded environmental laws and behaved in such a way as to harm the environment. An example would include demolition work taking place without regard for traffic in the vicinity.[671] Such disregard is punishable even if there was no harm as a consequence. The offence lies in the disregard itself; if harm occurred that would be a double crime attracting an even more severe penalty.[672]

Crime committed unintentionally does not make any difference to the penalty imposed as this is determined by the severity of the damage caused by the act of polluting.[673] In addition, the aim behind the diversity in the nature of unintentional crimes is to describe the perpetrated action so that it can be adjusted from a legal aspect that facilitates the judge in the application of a suitable punishment.[674]

[669] Helal Ashraf (n 627) 36
[670]Melinee Kazarian. "The Role of the Criminal Law and the Criminal Process in Healthcare Malpractice in France and England." (2013).74
[671]Karen M Hansen. "Knowing Environmental Crimes." *Wm. Mitchell L. Rev.* 16 (1990): 987;ا Ashraf (n.516) at 40
[672]Sanford H Kadish (n 16) 423-449.
[673] Helal Ashraf (n 627) 36
[674]Mark Cohen (n 513) 1054; Axel, Luttenberger, and Luttenberger Lidija Runko. "Challenges in regulating environmental crimes." In *7th International Maritime Science Conference*. 2017.213-215

5.7. Conclusion

This chapter considered of the role and the purpose of using the criminal law to enforce the environmental law. This chapter also briefly discusses the models of criminalization of environmental harm of air pollution to enforce environmental law.

The above discussion provides some idea of how criminal law theorists view the aims of criminal law in general terms. What is of more immediate concern for present purposes, however, is whether these purposes are compelling when used to justify criminal enforcement of environmental offences.

In the domain of environmental law, one of the first issues to be resolved is to arrive at a clear and unambiguous definition of environmental crime which cannot be achieved without identifying the entity which is being protected.

Thus, the term “crime against the environment” might be preferable to the term “environmental crime”. This would render environmental law to be consistent with other concepts in criminal law concepts, for example crimes against the person or crimes against property.

The main issue to be decided in most cases is whether a crime against the environment has been committed or whether the action was a lawful use of natural resources.

CHAPTER SIX
STRENGTHS AND WEAKNESSES OF USING CRIMINAL LAW TO ENFORCE ENVIRONMENTAL LAW AND THE ALTERNATIVES

6.1. Introduction

Drawing on the academic discourse regarding the most effective measures of implementing and enforcing environmental law, this chapter is a critical appraisal of various approaches to environmental law. First, the issue of whether the command and control measures offers the most effective approach will discuss as well as the viable alternatives. Second, where criminal measures have been adopted, methods for their improvement and greater effectiveness are considered.

The principal objective of criminal law, in relation to the protection of the environment, is deterrence. This raises the question as to whether criminal measures are effective as deterrents. In Iraqi environmental law framework, the command and control approach has been adopted as a means of regulating activities which may impact on the environment. The principal instrument of enforcement is usually the application of criminal measures in many environmental violence.[675]

However, some authors have been critical on this approach, arguing that it has a number of drawbacks which make it unsuitable to be the automatic response to infringements of the law and that it should be used with caution and generally only in the most serious of infringements.[676]

Accordingly, a number of alternative civil and administrative approaches will consider and evaluate with recommendations for their use of some cases in preference to the use of criminal measures. However, given that criminal measures may be necessary in the

[675] Hamid Abdul, Talal Salma, and Abdul Hadi Sarmed Reyad (n 431) 122-139.
[676] Al-a'abidi, Rana "Management Tools in Protecting the Environment-Study in Iraqi Legislation." *Al- Hiqouq letter – Baghdad University* no. 2 (2011): 183-198.

more serious cases of breaches of environmental law, approaches to improving those measures are also will consider in this chapter.

6.2. Measures to Strengthen Command and Control Mechanisms

In general, Iraqi laws are currently ineffective in deterring acts injurious to the environment. Deterrence tends to operate differently for small and large scale perpetrators. Large corporations are less deterred by financial penalty than by adverse negative media portrayal unless such financial penalties are severe.[677]

On the other hand, small-scale polluters are less deterred than larger scale polluters, because of the scarce amount of the penalty is imposed would not deter them from shifting their operations to other pursuits due to the greater flexibility they enjoy, even to the extent of geographical relocation. This may result in convicted individuals evading their penalties as they can disappear and be difficult to trace.

There are various enforcement mechanisms in place to ensure compliance with environmental laws. These include command and control mechanisms such as criminal measures, administrative measures, civil measures and alternative mechanisms.[678]

On the other hand, the connotation of the term "enforcement" refers to the actions the government takes to achieve compliance within the regulated community to prevent situations where compliance does not take place.[679]

[677] Not to mention the matter of estimating environmental damages, particularly in the case of natural resources. Normally, in environmental offences *per se* criminal law waives exact assessment of damages to the environment.

[678] Al-a'abidi, Rana (n 676) 183-198.

[679] International Network for Environmental Compliance and Enforcement. *Principles of environmental compliance and enforcement handbook*. International Network for Environmental Compliance and Enforcement, 2009; Philippe, Sands, and Peel Jacqueline (n 161); Christoph Demmke, and Simon F Deakin. *Towards effective environmental regulation: innovative approaches in implementing and enforcing European environmental law and policy*. Cambridge, MA: Harvard Law School, 2001; Andrew Farmer. *Handbook of environmental protection and enforcement: Principles and practice*. Earthscan, 2012.

The "enforcement" in its broad meaning, covering all activities of state structures (or structures delegated by the state) aimed at promoting compliance and reaching regulations' outcomes – e.g. lowering risks to safety, health and the environment, etc.[680]

These activities may include information, guidance and prevention; data collection and analysis; inspections; enforcement actions in the narrower sense, i.e. warnings, improvement notices, fines, prosecutions etc. In this research will be taken in its narrower meaning.[681]

In the context of environmental law, enforcement is usually accomplished by the Ministry of Environment following an inspection which reveals serious breaches of the law which can endanger or put people at risk to damage to their environment or to public health.[682] As in other applications of the law, the main purpose of enforcing environmental laws is to act as a deterrent to perpetrators against repeated breaches of the law as well as being a deterrent to other potential offenders in the future [683]

As environmental crime and air pollution is often committed by way of an act of unlawful omission which attracts sanctions or penalties, it is, therefore, considered to be a regulatory crime.[684] The effective prevention of regulatory crime requires a succession of events[685] beginning with the likelihood of detection, followed by prosecution and resulting in conviction.[686]

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[680] Sanford H Kadish (n 16) 423-449.
[681]Isaac Ehrlich. "The deterrent effect of criminal law enforcement." *The Journal of Legal Studies* 1, no. 2 (1972): 259-276.
[682]Al-Fil Ali (n 409); that depends on the norm. If the environmental standard is a set number, then there is no risk considered in enforcement. The latter is just triggered by the quantitative breach.
[683] Wagoona Vincent. Criminal Aspects of Environmental Law and Technicalities of Environmental Crimes. Principal Senior State Attorney in the Directorate of Public Prosecution, Under the Ministry of Justice and Constitutional Affairs (2006):1.
[684] A crime that is not inherently wrong, but that is illegal because it is prohibited by legislation. Is a class of crime in which the standard for proving culpability has been lowered so a mens rea element is not required; Yingyi Situ, and Emmons David. *Environmental crime*. Sage, 2000.3; Iina Sahramäki, Korsell Lars, and Kankaanranta Terhi (n 312) 41-59.
[685] Sundari Akella, Anita, and Cannon James B. *Strengthening the weakest links: strategies for improving the enforcement of environmental laws globally*. Center for Conservation and Government [Conservation International], (2004).529-530.
[686] Rob White (n 585) 365-381.

Thus strengthening the chain of enforcement is likely to be an effective approach provided this is also supported by other strategies of crime prevention such as command-and-control.[687]

6.2.1 Command and control mechanisms

These mechanisms impose legal mandates which are enforceable by criminal and administrative measures. Criminal measures are punitive in nature whereas administrative and civil measures compel offenders to desist from engaging in activities which harmed the environment or to take remedial action to mitigate any such harm.[688]

In general, command and control measures apply to all perpetrators and penalties tend to apply without any recognition of the relative impacts of the infringements.[689]

These types of mechanisms rely on strict monitoring by authorities and the prosecution of offenders under criminal law. Traditionally the command and control approach to achieving compliance involves two processes. The first is the prescription of legal requirements and obligations (the command) and the second is compelling compliance where non-compliance is detected through the use of the various measures.[690]

As a result, governments and socio-legal scholars began to look for alternative methods to regulate by means of a spectrum of policies.[691]This alternative model was called a 'cooperative model' of enforcement by means of offering incentives for compliance rather than punishment for non-compliance.[692]

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[687] Yingyi Situ, and Emmons David (n 684).
[688] Barry C. Field, and Field Martha K. "Environmental economics: an introduction." *Sustainable Human Development Review* (1997). 105
[689] Mikael Skou Andersen. *Governance by green taxes: Making pollution prevention pay*. Manchester University Press, (1994):20-21.
[690] Al-a'abidi, Rana (n 676) 183-198.
[691] Bridget M Hutter. *A reader in environmental law*. Oxford University Press, (1999):20.
[692] Anna Rita Germani. *The Environmental Enforcement in the Civil and the Common Law Systems. A Case on the Economic Effects of Legal Institutions*. No. 22-2007.2.

6.2.2 Criminal measures

The default enforcement measure for different spheres of law has traditionally been criminal sanctions such as fines or imprisonment.[693] In relation to environmental law the situation is no different.[694] Although legal opinion is that a criminal sanction plays an important role as a deterrent[695] because it 'brands the offender with the stigma of being a criminal and provides for punishment, including imprisonment, which cannot be imposed by any other means',[696] various concerns exist regarding its employment in relation to the enforcement of environmental laws.[697] These include, inter alia: the fact that it may be to the polluter's financial advantage to contravene a particular law[698]; criminal prosecutions are costly, lengthy and the burden of proof is notably higher than in civil matters; criminal measures are reactive in nature, in other words the harm has been committed prior to the institution of proceedings; and criminal measures fail to address the actual environmental harm occasioned by the contravention. Despite these concerns, general academic opinion is that criminal sanctions have a role to play in relation to the enforcement of environmental law, albeit in relation to only 'the most serious environmental offences.'[699]

It is also essential that the punishment fit the crime – if the penalty is too lenient, the utility of the criminal sanction as a deterrent is significantly diluted, and the seriousness of environmental law violations are minimised. By contrast, if a penalty seems too severe, this may result in contempt for the law. Over-zealous prosecution – especially of offenders whose non-compliance is inadvertent or the result of strict liability - also deprives criminal sanctions of their stigma effect.

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[693] Al-Budairi Ismail and Ibrahim Hawra (n 4) 88
[694] Louis J. Kotzé, and Paterson Alexander R., eds. The role of the judiciary in environmental governance: comparative perspectives. Vol. 4. Kluwer Law International, 2009.67
[695] Ibid.
[696] Ibid.
[697] Genevra Richardson, Ogus Anthony, and Burrows Paul (n 428) 14-26, 55-64.
[698] Feris, L. A. "Compliance notices–A new tool in environmental enforcement." *Potchefstroom Electronic Law Journal/Potchefstroomse Elektroniese Regsblad* 9.3 (2006):1-18.
[699] Louis J. Kotzé, and Paterson Alexander R (n 694) 67

Because of the stricter criminal procedure and high standard of proof (guilt must be proved beyond a reasonable doubt), the public believes that the information about the offender's guilt is reliable. This can attract negative publicity and a loss of reputation – with a likely loss of business - for corporate offenders. For individuals, stigma has social and economic consequences, as many people avoid interaction with criminal offenders, and a criminal record limits ex-offenders' employment opportunities.[700]

Where does the discussion in the preceding paragraphs lead to in respect of determining the appropriate role to be played by criminal sanctions? It is apparent that, as a matter of fact, criminal prosecution is often used as a last resort in the case of environmental offences.[701] But *ought* this to be the case?

Following this broad approach, it is submitted that criminal sanctions should be reserved, first, for cases where there is intentional wrongdoing.[702]

The use of criminal law to enforce and protect the environment has advantages and disadvantages. One of the main advantages of using criminal sanctions is that harsh sentences received by companies or individuals who violate environmental laws would deter other offenders in future.[703] This would fulfil the deterrent theory of punishment. Criminal sanctions, however, have numerous disadvantages.

The disadvantages include the time and costs involved, the fact that it is reactive rather than deterrent in that the harm has already been done, the burden of proof is heavier than in civil cases, the time and efforts required in case preparation and management among others. These are considered in the following paragraphs.

Inherent weaknesses are those weaknesses that are present in most if not all systems of criminal law.

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[700] Keith O Hawkins, and Thomas John Michael. *Enforcing regulation*. Kluwer Academic Pub, 1984.23-24
[701]Birgit, Schönberger and Toussaint (n.8) 27-38.
[702] Herbert Packer. *The limits of the criminal sanction*. Stanford University Press, 1968.250
[703]Kathleen F Brickey (n 558) 487 at 489; Michael Faure, and Visser Marjolein (n 288) 10.

The first difficulty is the cost to the State of pursuing a prosecution. There is also a considerable time lag from initiation to the actual trial. In the case of environmental crimes, this time lag is often longer due to the need for specialists in environmental matters to give their investigation results by way of reports. Witnesses can also be inconvenienced due to time delays and numerous adjournments.

The second issue is that although environmental laws are meant to protect and preserve the environment, resorting to criminal proceedings is reactive in that the damage has already been done. Thus, the intentions of the laws to preserve the natural environment are thwarted by the reactive nature of having recourse to law through the courts.

Criminal law does achieve the objective of conserving and protecting; it only fulfils its objective of being a deterrent.[704]

The third disadvantage of criminal law is the stringent standard of proof that has to be satisfied. The onus of proof in criminal law rests upon the state that needs to prove its case beyond all reasonable doubt. This is more difficult to prove compared to proving on a balance of probabilities in terms of the law of civil procedure. Burden of proof can also run into difficulties of the legal identification of the putative offender and the heavier burden of proof which requires more than the mere balance of probabilities but must be beyond all reasonable doubt in addition to establishing *mens rea* in cases where the offence is not a strict liability offence.[705]

A fourth disadvantage is the time and efforts required in case preparation and case management which can often be such a drain on resources as to ne a disincentive especially if the prospects are that only a light penalty will result if the prosecution is successful.[706]

[704]Chester Bowles (n 596).
[705] Jeremy Rowan-Robinson, Watchman Paul Q., and Barker Christine R. *Crime and regulation: A study of the enforcement of regulatory codes*. T & T Clark, 1990.256
[706] Ibid.

Coupled with this is the inconvenience of the time lag for witnesses who may have to endure numerous adjournments.

There is also the stigma attached criminals from a moralistic point of view but which rarely applies to environmental offenders who are not stereotypical criminals.

Finally, the parity of the penalty in the case of successful conviction is often seen as disproportionate to the efforts and costs of prosecution.

In addition to the inherent weaknesses of criminal sanctions as discussed, there are also contingent weaknesses in the use of criminal sanctions. Contingent weaknesses refer to conditions prevailing in a country due to its social, political or economic context. In the case of Iraq these include inadequate policing, lack of public awareness, difficulties of investigation and the lack of expertise of court officials and inadequate policies.[707]

Criminal law is characteristically *ultima ratio* and does not apply to all environmental degradation scenarios. Additionally, especially in cases involving small scale polluters, the application of a criminal sanction necessitates greater cultural and social support than that of simply enforcing an administrative measure (e.g., a financial penalty) or civil sanction (mandatory restoration to counteract the damage). Small scale polluters are more likely to succeed by pleading ignorance of the law. Furthermore, arguments based on necessity or poverty have greater force when used by a small scale offender than they would have when relied upon by large organisations. It is noteworthy that, in developing countries, environmental legislation is frequently not enforced and is excused on grounds of poverty. Thus, small scale polluters are frequently acquitted on grounds of "*state of necessity*".

[707] Al Ghurairi Adam (n 42) 382

Nevertheless, criminal environmental law has a role to play against small-scale enterprises or individual polluters. Moreover, as is the case in other areas of environmental law, there are no "*illusions about 'quick-fix' solutions*".[708]

As far as alternatives to the criminal sanction are concerned at an instrumental level, there are several that will be considered in this chapter: both those of the administrative variety and civil variety. In the former category are abatement notices, withdrawal of permits and administrative penalties. Civil measures include injunctive processes (interdicts) and civil liability tools including civil penalties and edictal mechanisms.[709]

Criminal law is now seeking to have sanctions available which were only formerly applicable to civil and administrative cases. The sanctions being sought include seizure of assets, adverse publicity, and suspension or complete closure of business.[710]

6.2.3 Administrative measures

Administrative measures, which may be employed in conjunction with criminal sanctions or on their own, take various forms, including, directives, compliance and abatement notices, as well as notices withdrawing the relevant permit, licence or exemption. Directives enable authorities to direct someone to either do, or refrain from doing, something so as to attain appropriate environmental performance or to prevent environmental harm.[711]

The benefits of directives include the fact that issuing them can take place fairly swiftly so they can be employed in emergency situations, and that even where a particular activity has been authorised a competent authority may be entitled to issue a directive so as to enhance environmental performance.[712] As their names suggest, compliance notices can be

[708] World Commission on Environment and Development (n 176) 309.
[709]Michael Faure, and Visser Marjolein (n 288) 10; Frate Del (n 556) 13.
[710]Jeremy Rowan-Robinson, Watchman Paul Q., and Barker Christine R (n 705) 256
[711]Susan F. Mandiberg, and Faure Michael G (n 264) 447.
[712]Samia Mair, Julie, and Mair Michael. "Violence prevention and control through environmental modifications." *Annual Review of Public Health* 24, no. 1 (2003): 209-225.

issued to call on a person to comply with a particular environmental law,[713] whereas abatement notices can be issued to call on a person to act to abate a particular situation that may be causing environmental harm.

The benefit of such notices is that, as with directives, they can be issued fairly swiftly.[714] A related administrative measure is the withdrawal of authorisations. In other words, an environmental authority can give notice to the holder of a particular right that if a breach of the relevant authorisation is not remedied the authorisation will be withdrawn.

In sum, provided that they are not challenged in court, administrative measures are relatively swift and inexpensive, and they allow environmental authorities with the requisite expertise to regulate particular activities without having to resort to costly and lengthy prosecution, which may take place in non-specialist courts. The relevant environmental authorities must, however, possess appropriately trained officials empowered to utilise such measures.[715]

Administrative measures are implemented by relevant environmental authorities and not by the courts. These authorities include people who possess the proficiency and experience to be able to detect and stop infringements of environmental laws from occurring. These authorities would also be empowered to enforce compliance and to constrain any unlawful activities. Additionally, administrative approaches are preferable to long drawn out law cases as remedies as they work on the principle of the 'polluter pays'.[716]

Administrative measures take many forms; can be used in a wide variety of circumstances; and are able to regulate activities in fairly specific ways. More than one

[713]Feris, L. A (n 698) 1-18.
[714]Ibid.
[715]David E.Adelman, , and Engel Kirsten H. "Adaptive federalism: The case against reallocating environmental regulatory authority." *Minn. L. Rev.* 92 (2007): 1796;مجلة الإدارية ليلو, الحماية مازن, المستقبل للبيئة 2008 , العراقي
[Lilo Mazen, Administrative Protection of the Environment, Iraqi Future Journal, 2008translated from Arabic to English by the author]
[716]Robert V.Percival and others (n 641) 15;للطباعة, بغداد العادية ,الميناء الظروف في للادارة التشريعي العاني , الاختصاص وسام
2003,[Al-Ani Wissam, Legislative Jurisdiction of Management in Normal Circumstances, Al-Mina for Printing, Baghdad 2003translated from Arabic to English by the author]

measure may be applicable in a particular context; and often, a range must be applied simultaneously. Officials have extensive discretion regarding their use. As a result, administrative measures are potentially more efficient than criminal measures.[717]

Administrative penalties sometimes called civil penalties are another type of administrative measure. In general, these are monetary penalties imposed by the regulator, without the intervention of the courts. Administrative penalties have been described as a hybrid sanction, as they have both criminal and civil law elements. The resemble criminal law fines because they are financial and punitive in nature, but the process in which they are imposed is civil.[718] Given the lower standard of proof required for administrative penalties a balance of probabilities and the stigma and coercive nature of criminal prosecution, administrative penalties should be used for environmental law violations that are not egregious enough to warrant criminal prosecution.

There are several obvious benefits to using administrative enforcement measures instead of criminal sanctions:[719]

- Administrative measures are easier to use because it is not necessary to have the matter decided in Court. In addition, it is not necessary to worry about the standard of proof and constitutional safeguards inherent in a criminal trial.[720]
- Less costly. This follows from the previous point.
- More efficient. Again, this follows from the previous points - efficiency means the ability to achieve the same results as achieved by the criminal process more quickly or at a lower cost. Many administrative measures can simply be

[717]Richard B Stewart. "Economics, environment, and the limits of legal control." Harv. Envtl. L. Rev. 9 (1985): 1; Christopher Wood. *Environmental impact assessment: a comparative review*. Pearson Education, 2003.123
[718] Abdulkadhim, Asmaa (n 26) 82.
[719] Laura J. Kerrigan, , and others. (n 27) 367.European Committee on Crime Problems (n 27)17.
[720] John Swaigen. *Regulatory offences in Canada: liability & defences*. Carswell Legal Pubns, (1992).217

carried out by officials in the field and, if successfully used, can have an immediate positive impact.[721]

- Less likely opposition from offenders. The fact that the stigma attached to criminal prosecution is absent from the realm of administrative measures would be likely to result in offenders opposing findings of wrongdoing less vigorously,[722] Another factor influencing this, and probably more so than the absence of stigma, is the lower penalties involved.[723]

- Administrative measures and sanctions are more appropriate for dealing with breaches of environmental laws as they directly and quickly get to the source of the infringement.

- These administrative penalties can be directed not only to natural persons but also to legal persons and so are not curtailed by aspects of criminal justice.[724]

However, the current study also found that the benefits of applying administrative enforcement regulations may be thwarted for the following reasons:

- Competent authorities have wide powers of discretion with regard to the imposition of sanctions and they have no accountability for any decisions in this regard. Sanctions are only the last resort after numerous warnings have gone unheeded making the approach more conciliatory than punitive.[725] However, if conciliation is effective, then the administrative approach will have been successful. There is often a lack of professional distance which could influence administrators in the direction of leniency or bargaining rather than having a deterrent effect. There is

[721] Abdulkadhim, Asmaa (n 26) 82.
[722] John Swaigen (n 720) 217
[723] Ibid
[724]Laura J. Kerrigan, and others (n 27) 367; European Committee on Crime Problems (n 27) 17
[725] Maguire, N. "When is prison a last resort? Definitional problems and judicial interpretations." *Irish Criminal Law Journal* 24, no. 3 (2014): 62-72.

the danger of vested interests winning out over the needs to safeguard the environment.[726]

- Administrative approaches do not have the same degree of transparency as cases taken up on courts of law and thus can be more regressive in terms of enforcement.[727]

- There can be a lack of coherency in how these administrative measures are put into practice.[728]

- Administrative measures often lack a clear rationale in how they are designed and applied so that there can be a lack of consistency in the sanctions meted out for similar infringements.[729] This lack of consistency can play into the hands of offenders who can shift their violations of anti-pollution laws to their own advantage by operating in a lesser punitive arena.[730]

- There is no degree of aggravation in administrative sanctioning for tenacious and repeat offenders.[731]

- Administrative sanctions tend to attract little exposure in the media and thus there is less of a social stigma attached to their imposition. Enforcement

[726] Abdulkadhim, Asmaa (n 26) 82.
[727] Benedict Kingsbury. "The concept of 'law'in global administrative law." *European Journal of International Law* 20, no. 1 (2009): 23-57; Peter, Leyland, and Anthony Gordon. *Textbook on administrative law*. Oxford University Press, 2016.
[728] Wilfred Bradley, Anthony, and Ewing Keith D. *Constitutional and administrative law*. Vol. 1. Pearson Education, 2007.
[729] Joel Goh. "Proportionality-An unattainable ideal in the criminal justice system." *Manchester Rev. L. Crime & Ethics* 2 (2013): 41.
[730] Goldenbeld, C. Heidstra, J. Christ, R. Mäkinen, and A. S. T & Hakkert. "Legal and administrative measures to support police enforcement of traffic rules. The" Escape" Project, Deliverable 5. Project funded by the European Commission under the Transport RTD Programme of the 4th Framework Programme." (2005).
[731] Spapens, A. C. M. *Adminstrative Approaches to Crime. Administrative Measures Based on Regulatory Legislation to prevent and Tackle (serious and Organized) Crime. Legal Possibilities and Practical Applications in 10 EU Member States*. Eleven International, 2015.

measures tend to be biased towards the minimum financial tariffs that would be available to law courts.[732]

- Administrative measures do not systematically impose any obligation of restoration on the offender.[733]

In conclude that both criminal and administrative approaches have their respective advantages and disadvantages and should not be seen as in opposition to each other. Administrative approaches are essentially directed towards prevention and are thus to be lauded as protecting the environment whereas recourse to legal action through the courts is often after the fact that the damage has been done. However, administrative approaches could be even more effective as preventive measures if there was greater consistency in dissuasion of infringements (deterrent effect), and punishment (sanction).[734]

6.2.4 Administrative and criminal law

The literature contains legal arguments supporting the use of criminal law for environmental protection. Administrative law is seen as insufficient or inadequate as a deterrent, so that values and interests that may be seen as ecologically should be protected by criminal law.[735]

Serious debate has come about on how appropriate and how effective criminal law may be as a means of protecting the environment. A major concern springs from the administrative law/criminal law relationship, with fears that the value of criminal law may be diminished since "*both murder and mere disobedience of administrative orders is defined as criminal*". These concerns have also been expressed about dangers arising from prosecution

[732] Cynthia Chipanga, and Mude Torque. "An analysis of the effectiveness of sanctions as a law enforcement tool in international law: A case study of Zimbabwe from 2001 to 2013." *Open Journal of Political Science* 5, no. 05 (2015): 291.
[733] Abdulkadhim, Asmaa (n 26) 82.
[734] Nuno, Garoupa, and Gomez-Pomar Fernando. "Punish once or punish twice: A theory of the use of criminal sanctions in addition to regulatory penalties."*American Law and Economics Review* 6.2 (2004): 410-433.
[735] Ibid.

that is selective and sentencing that is lenient since these also can diminish the perceived value of the criminal law. Lack of strict standards in criminal law is also seen as a problem, since administrative law's stricter standards mean that there can be direct interaction between administrator and subject. The absence of this possibility makes criminal law "*soft*" and predicts that it will malfunction.[736]

In principle, a monetary sanction can be both administrative and criminal administrative agencies are unable to impose sanctions of a non-monetary type (such as, imprisonment).

The fact is, though, that imprisonment is an unusual response to crime against the environment, so that while the deterrent effect may be significant, it is unlikely to occur very often since sentences of imprisonment are so infrequently imposed for environmental offenders.[737]

The result is that imprisonment is almost invariably only a criminal sanction and is not available as an administrative sanction, and the realisation that monetary sanctions are insufficient to inhibit pollution of the environment leads to the inevitable conclusion that environmental regulations can only be enforced by a system that is not dependent only on administrative sanctions and that this system must be the criminal law.[738]

In principle, financial sanctions can be criminal as well as administrative. In the absence of other factors, administrative procedures are preferred as being much less costly than criminal procedures and administrative fines can, as part of '*administrative penal*

[736] Gunter Heine. "Elaboration of Norms and the Protection of the Environment." *Duke Envtl. L. & Pol'y F.* 2 (1992): 106.
[737] Carole M. Billiet, and Rousseau Sandra. "How real is the threat of imprisonment for environmental crime?" *European Journal of Law and Economics* 37.2 (2014): 183-198.
[738] Michael G Faure., Koopmans Ingeborg M., and Oudijk Johannes C. "Imposing criminal liability on government officials under environmental law: a legal and economic analysis." *Loy. LA Int'l & Comp. LJ* 18 (1995): 529.

law',[739] be the result of fairly simple procedures where the threshold of proof is usually quite low.[740]

There are two significant reasons why administrative law is not able to replace criminal law totally.

The first is that, as environmental pollution is, in practice, usually detected only rarely, any sanction likely to deter it would have to be extremely high. The fact that it might well be so high that the offender could not afford it would make it less useful. There is also the fact that environmental pollution is often by corporations, and they are almost always subject to limited liability.[741]

The risk is that the entire assets of the company may be insufficient to meet the costs arising from environmental pollution. This would also be true in criminal law, where – once again, to counterbalance the effect of the low rate of detection the optimal fine would have to be very high and might well exceed the firm's assets. In fact, it so often is the case that the optimal monetary sanction for deterrence is greater than the offenders' assets that begin to see the necessity of non-monetary sanctions, including imprisonment.[742]

It follows that, despite their advantage of lower administrative cost, financial sanctions should only be preferred where the risk of insolvency can be managed. Also to be borne in mind is that, since the threshold of proof is lower, the likelihood of an administrative fine being imposed is considerably greater than the likelihood of a criminal fine, so that it is

[739] The expression '*administrative penal law*' may be confusing to some who consider '*penal*' synonymous with '*criminal*'. In the literature, this notion is used to refer to a system whereby administrative authorities impose penalties.
[740] Anthony Ogus, and Abbot Carolyn. "Pollution and penalties." *An introduction to the law and economics of environmental policy: issues in institutional design*. Emerald Group Publishing Limited, 2002. 493-516; Anthony Ogus, and Abbot Carolyn. "Sanctions for pollution: do we have the right regime?" *Journal of environmental law* 14.3 (2002): 283-298.
[741] Henry Hansmann, and Kraakman Reinier. "Toward unlimited shareholder liability for corporate torts." *Yale Law Journal* (1991): 1879-1934; Wouter HFM Cortenraad. *The corporate paradox: economic realities of the corporate form of organization*. Springer Science & Business Media, 2012.
[742] Abdulkadhim, Asmaa (n 26) 82.

not necessary for administrative fines to be as large as criminal fines (a possible solution to the problem of insolvency).[743]

Let us not forget that one of the reasons for the introduction of criminal law was the low rate of detection. Couple that with the insolvency problem and it is possible to understand why the need for criminal sanctions will not be removed simply by the introduction of punitive damages to increase the amount of compensation. In fact, insolvency problems arising from monetary sanctions can have the effect of making the person responsible for environmental harm proof against judgement, so that deterrence can often only be achieved through sanctions that are not monetary in nature. Administrative proceedings cost less than criminal proceedings, but criminal proceedings (with professional lawyers in charge of investigations) can be a lot more accurate.[744]

This matters because the purpose of criminal law is not just the application of optimal sanctions against the guilty but also the avoidance of punishing innocent people, which is described as "*the goal of reduction of error costs*."[745] Error cost is, clearly, much higher when there is a possibility of serious sanctions including imprisonment, rather than only monetary sanctions, and so it is understandable that the choice of less costly administrative proceedings is made whenever a wrongful conviction would not lead to too high an error cost. It can also be argued that avoiding punishment of the innocent is also a goal of administrative procedures, notwithstanding the lower standard on which they operate, and this explains why administrative law is used in cases where effective deterrence is likely to result from fairly low penalties.[746]

The literature therefore holds out a fairly straightforward policy lesson, which is that, where fairly modest sanctions are likely to deter environmental polluters, using

[743] Michael Faure (n 34) 330-333
[744] Ibid
[745] Thomas J Miceli. "Optimal prosecution of defendants whose guilt is uncertain." *JL Econ & Org.* 6 (1990): 189.
[746] Michael Faure (n 34) 326.

administrative solutions is justified, but where there is a combination of a low detection probability and high social harm coupled with high potential profit for the polluter, the need is for a more severe sanction and criminal procedures, though expensive, may be justified to reduce error costs.

In reality, in many legal systems it is always possible to use either the criminal law or administrative penal law for particular environmental offences or in some cases even a combination of these. For a discussion of the optimal use of criminal, sanction in addition to administrative penalties.[747]

It is cheaper to give an administrative fine rather than a criminal sanction, because the proceedings are informal and not as strict. Therefore, they may be handed out in greater frequency and at a lower cost than a criminal sanction.[748]

A larger frequency of use increases sanction probability (and leads to a decrease in dismissal numbers), following this is an increase in expected sanctions for offenders facing ex ante. Clearly, administrative sanctions are lower than criminal sanctions; therefore, it is not simply an effective deterrent. But, if administrative sanctions are high enough and/or levied enough time, this may lead to an increase in the effectiveness of the deterrent for legal sanctions. Sometimes, an administrative fine can be higher than a criminal fine. Especially for environmental abuses, the court may not have enough knowledge in evaluating environmental harm; therefore, there is a tendency to misjudge the amount of sanctions needed to bring about a deterrent.[749]

Additionally, revoking or suspending a licence might be viewed as having an incapacitating effect, therefore proving to be a decent deterrent. Thus, as well as having a criminal system to implement environmental regulation, permitting an environmental agency to give administrative sanctions which can be more effective in lowering environmental harm

[747] Roger Bowles, Faure Michael, and Garoupa Nuno (n 592) 410-433.
[748] Abdulkadhim, Asmaa (n 26) 82.
[749] Michael G.Faure , and Zhang Hao. "Environmental criminal law in China: a critical analysis." (2012).

for lower cost.[750]Allowing environmental agencies to deal with less serious issues, which are not worth prosecuting, the amounts of dismissals goes down and the total amount of enforcement increases. Such theoretical insight gives a stronger case in the enforcement of environmental law via combining criminal and administrative sanctions.[751]

6.2.5 Civil measures

A civil penalty can be defined as punitive sanctions that are imposed by courts otherwise than through the normal criminal process.[752]

What is the rationale behind civil penalties? It would appear that they essentially boil down to two considerations. The first is that they are less severe (in some ways) than criminal penalties in that they do not affect upon personal liberty, they do not attract the stigma that a criminal conviction does, and the person upon whom a civil penalty is imposed does not acquire a criminal record. This makes them suitable for use in cases where a person may have infringed the law (probably regulatory in nature) without criminal *mens rea*, but where the regulator regards penalisation as important for the purposes of deterrence.

The second reason for their use is a practical one – they are easier to impose than criminal sanctions are because of the less stringent standard of proof in civil litigation – it is easier to satisfy the balance of probabilities than proof beyond reasonable doubt and hence it is easier to establish the defendant's liability.

Although this is an important consideration, it must be borne in mind that civil penalties share the same shortcoming of criminal law in that both require the time-consuming, onerous and costly requirement of a Court decision.[753]

[750] Michael Faure, and Visser Marjolein (n 288) 10.
[751] Susan F. Mandiberg, and Faure Michael G (n 264) 447.
[752] Definition adapted from the 'broad' definition given by Michael Gillooly, and Wallace-Bruce Nii Lante. "Civil Penalties in Australian Legislation." *U. Tas. L. Rev.* 13 (1994): 269. Their definition excluded the requirement of judicial implementation.
[753] Ibid, 270.

The terms "*civil penalty*" and "*administrative sanction*" are often used as though there were mutual cognates. However, they are distinct entities. A civil penalty is imposed by the courts as a civil rather than a criminal amercement.[754] These often take the form of a financial fine commonly meted out to criminal offenders; however, the imposition of these types of penalties are usually not criminal in nature. Administrative sanctions, on the other hand, are broadly understood as being forfeitures imposed as forms of retribution by the regulator without the intervention by a court or tribunal.[755]

The literature advances a number of reasons for the use of civil law in controlling externalities of certain types. One of these is that internalising harm by a civil law mechanism cannot be perfect, since civil law and, in particular, the law of tort can never guarantee that the injured party will be fully compensated. The injured party indifference would be the consequence of full compensation for the harm suffered, and only the civil law can grant this;[756] it is clearly established that even substantial financial compensation for, say, the loss of a limb, cannot return the injured party to the *status quo ante*.[757] This is true of all suffering and pain.[758]

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[754]Al-Husseini Abbas (n 551) 17; Kandil Said (n 535) 130.

[755]Dara Lynott, J. "The detection and prosecution of environmental crime." *Judicial Studies Institute Journal* 1 (2008): 185-208; Al-Budairi Ismail and Ibrahim Hawra (n 4) at 93-94

[756] أحمد محمد، نظرية التعدي كأساس للمسؤولية المدنية الحديثة، دراسة مقارنة في ضوء الفقه وأحكام القضاء، الطبعة الأولى، دار الفكر الجامعي، الإسكندرية, 2007[Mohamed Ahmed, The Theory of Infringement as a Basis for Modern Civil Responsibility, Comparative Study in the Light of Jurisprudence and Judgments, First Edition, University Thought House, Alexandria, 2007translated from Arabic to English by the author]

[Bahgat Ahmed, Civil Liability for Harmful Environmental Action, Dar Al-Nahda Al Arabiya, Cairo, 2008translated from Arabic to English by the author] أحمد بهجت، المسؤولية المدنية عن الفعل الضار بالبيئة، دار النهضة العربية، القاهرة،2008

[Al-Bayeh Mohsen, Civil Liability for Environmental Damage, Dar Al-Nahda Al-Arabiya, Cairo, 2002translated from Arabic to English by the author] محسن البيه، المسؤولية المدنية عن الأضرارالبيئية، دار النهضة العربية، القاهرة، 2002

[757] Michael Faure, and Visser Marjolein (n 288) 2.

[758] حسين ذنون , النظرية العامة للالتزامات, مصادر الالتزام, احكام الالتزام, اثبات الالتزام, دار الحرية للطباعة)
. , 222 ص , 1743 , بغداد [Donon Hussein, General Theory of Obligations, Sources of Obligation, Provisions of Commitment, Proof of Obligation, Freedom House for Printing. , Baghdad, 1743, p. 222translated from Arabic to English by the author]

محمد الجياشي , مسؤولية المنتج المدني الناجمة عن تلوث البيئة ,د راسة مقارنة,كلية صدام للحقوق , جامعة صدام , 2010 , ص 114
[Jiyashi Mohammed, Responsibility of Civil Product Resulting from Environmental Pollution, Comparative Study, Saddam College of Law, Saddam University, 2010. 114translated from Arabic to English by the author]

While it is true that the law of tort frequently compensates for non-financial losses (for example, in the case of death caused by an accident), the civil law award is often insufficient to guarantee that the offender will be deterred from offending again on purely economic grounds.[759]

It has therefore been argued by some that the criminal law's principal objective in cases of this sort is deterrence rather than compensation.[760]

The likelihood of being caught for environmental pollution can be low; with the result, that deterrence will only be effective if the possible sanction greatly exceeds the amount of possible damage.

6.2.6 Criminal and civil law

When one considers that the likelihood of being caught for environmental pollution is low any sanction, if it is to be effective in deterring potential polluters, must be very high

[759] Michael G Faure (n 24) 143-159.

[760] The rule in Madrassa Anjuman Islamia v Johannesburg Muncipalityto the effect that where a specific remedy such as a criminal sanction or administrative measure is provided for in legislation, then the legislature is presumed to have intended to exclude all other remedies, except an interdict. This would serve to exclude delictual actions for damages, as was illustrated in the case of Hall and Another v Edward Snell & Co Ltd. In this case, the Court refused to allow a claim for damages as a result of food poisoning caused by contaminated cooking oil. The reason was that the relevant legislation made it a criminal offence to sell contaminated foodstuffs and that the legislature could not have intended to subject the offender to both criminal sanctions and civil damages. As Loots says, 'the possibility that environmental offenders could escape claims for damages brought by those who suffer harm as a result of their activities is totally unacceptable'. The solution is to provide expressly in legislation that persons may claim damages for harm or injury suffered as a result of breach of the legislation in question; *Minister of Health and Welfare v Woodcarb (Pty) Ltd and another* 1996 (3) SA 155 (N); *Madrassa Anjuman Islamia v Johannesburg Muncipality* 1917 AD 718; *Hall and Another v Edward Snell & Co Ltd* 1940 NPD 314; In certain circumstances, however, even this may not be enough. Due to the difficulty of proving fault on the part of the defendant in many environmental cases, it may be useful to provide in legislation for strict delictual liability in cases of breaches of the legislation causing harm. There is case authority to the effect that a person claiming damages for a breach of a statutory duty (such breach constituting a criminal offence) does not have to allege negligence. In Lascon Properties (Pty) Ltd v Wadeville Investment Co (Pty) Ltd, the Witwatersrand Local Division held, in effect, that a breach of a statutory duty allowed a strict liability remedy separate from the Aquilian action. This decision, it is submitted, is wrong: the breach of the statutory duty determines whether there has been wrongfulness in a particular case (or, in other words, whether the defendant owed a duty of care to the plaintiff), it does not have any impact on the normal Aquilian requirement of fault. (Interestingly, the Court in Lascon completely ignored the Madrassa Anjuman Islamia rule). If Lascon is correct, then it is not necessary for legislation to provide for no-fault liability since an offender will be strictly liable for the breach of a statutory duty. Since, however, Lascon would not be likely to withstand more careful legal scrutiny, it would be beneficial in certain cases to provide for strict civil liability for breach of environmental statutes. This may provide for a defence of due diligence in which case, in effect, the burden of disproving negligence shifts to the offender; *Lascon Properties (Pty) Ltd v Wadeville Investment Co (Pty) Ltd* 1997 (4) SA 578 (W) Robert Cooter (n 26) 1523-1560.

indeed and it is, generally speaking, not possible to achieve this through the law of tort which, as a general rule, only demands compensation for the injured party equal to the value of the damage caused. Only the criminal law can compensate for low detection rates by imposing a penalty much greater than the damage caused.[761]

The question is whether enforcement and sanctions should come from the criminal and the civil law and, while it is true that civil law is more flexible, it does not have the enforcement value of criminal law.

Taking into account the drawbacks already discussed concerning the use of criminal law to protect the environment, a lot of debate is taking place on whether the civil law is a more effective way of solving the environmental crime problem. Flexibility is a great advantage in civil law, whose sanctions can be adjusted to meet the needs of the case. Civil law also lends itself to action against corporate polluters, as matters like *mens rea*, notoriously difficult to prove, do not apply.[762]

It remains the case, though, that, useful as it may be to regulate many areas currently handled by criminal law (like sanctions and the enforcement of injunctions), civil law may in the end prove insufficient for effective environmental protection. The "*morally neutral*" aspect of civil law, by which is meant that its intent is on cessation and remediation rather than punishment,[763] fails to send the kind of signal that society needs and criminal law may well be the right solution for many aspects of environmental protection.[764]

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[761] Göran Skogh. "A Note on Gary Becker's" Crime and Punishment: An Economic Approach"." *The Swedish Journal of Economics* 75.3 (1973): 305-311.; Göran Skogh, and Stuart Charles. "An economic analysis of crime rates, punishment, and the social consequences of crime." *Public Choice* 38.2 (1982): 171-179.

[762] Stein, P. "A possible way forward? The experiences of the Land and Environment Court of NSW in pollution control." *Criminology Australia* 3.3 (1992): 13-15.

[763] The United States Supreme Court judgment in United States v Halper is, it is submitted, an indication of how the South African courts could approach the question of civil penalties, at least in broad terms. In Halper, the defendant was the manager of medical laboratory who had made false claims for reimbursement on sixty-five separate occasions, resulting in an unjustified government pay-out of $585. He was prosecuted criminally and sentenced to two years imprisonment and a fine of $5 000. In addition, after the criminal conviction, the government sued him for a civil penalty of approximately $130 000.
The issue before the Court was whether the imposition of the civil penalty in addition to the criminal penalty violated the Double Jeopardy clause in the US Constitution. The Court held that the disparity between the

However, one has to stress that much of the literature in fact provides arguments in favour of public enforcement or regulation rather than in favour of the criminal law.

One argument in favour of public enforcement is that private law remedies will not sufficiently deter.[765]

This shows the inappropriateness of civil law in cases where the probability of detection is less than 100 per cent. For optimal deterrence, a higher sanction has to be imposed in order to compensate for this low detection rate. This cannot be provided through private law, and hence explains the need for public sanctions which permit compensation for the lower detection rate.[766]

On the other hand, an interdict is potentially a very useful enforcement tool because it can be used to put a stop to harmful activity and often at an early stage, allowing proactive intervention.

It must be borne in mind, however, that an interdict still requires the involvement of a Court and hence is a relatively costly and time-consuming process (although it is quicker to have a matter resolved through an interdict than by using criminal sanctions).

A good example for our purposes lies in the argument that, because damage can be widespread, civil law may be of limited use in deterring environmental pollution because what is damaged is not the property of a single person and no one will bring a suit in tort. A way of handling this would be to allow civil law to be used where harm to an individual cannot be shown but where the act in question has caused a high level of social harm. For example, the state could be permitted to represent the environment in an action for tort.

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amount of the civil penalty and the damages suffered by the government was so great that the civil penalty constituted a second punishment and therefore contravened the Double Jeopardy clause. According to the Court, '[A] civil sanction that cannot fairly be said solely to serve a remedial purpose, but rather can only be explained as also serving either retributive or deterrent purposes, is punishment, as we have come to understand the term'. *United States v Halper* 490 US 435 (1989).

[764] Nichola Franklin. "Environmental Pollution Control-The Limits of the Criminal Law." *Current Issues Crim. Just.* 2 (1990): 81.

[765] Mark Wilde. *Civil liability for environmental damage: a comparative analysis of law and policy in Europe and the United States*. Vol. 4. Kluwer Law International, 2002. 307–10.

[766] Göran Skogh (n 761) 305-311; Göran Skogh, and Stuart Charles (n 761) 171-179.

Alternatively, NGOs and individuals could be authorised to begin actions in tort to ask, as an example, for an injunction that would prevent pollution of the environment from happening. Class actions could also be considered.[767]

6.2.7 The drawbacks of command and control

- ***Excessive responsibility on government***

In Iraq, where state resources are strained and often directed at sectors other than the environment, the central role to be played by the state under the command and control approach may be too much to ask. This can be seen in Iraq, where many of the commands are present on paper, but the control is frequently absent.[768]

The responsibility is not confined to enforcement aspects like monitoring and investigation. One of the biggest burdens on the state is to set the standards that have to be complied with, especially where these standards are not uniform but rather industry- or source-specific (and the problem with uniform standards is that they can be excessively rigid).[769]

- ***Cost***

This relates to the previous point. In order adequately to monitor and enforce compliance, the financial burden on the state is considerable.

- ***Excessive rigidity***

Command and control typically requires the regulated parties to comply with either explicitly set standards (maximum emission levels, for example) or best available technology.

[767] Steven Shavell. "Criminal law and the optimal use of nonmonetary sanctions as a deterrent." *Columbia Law Review* 85.6 (1985): 1232-1262; Richard A Posner. "Optimal sentences for white-collar criminals." *Am. Crim. L. Rev.* 17 (1979): 409.
[768] Al Ghurairi Adam (n 42) 382
[769] Al-Budairi Ismail and Ibrahim Hawra (n 4) 10

If the regulated entity meets those requirements, then there is no incentive to reduce emissions further by, for example, development or installation of new technology.[770]

The command and control approach, therefore, constitutes a licence to pollute, provided such pollution remains within a predetermined maximum level.[771] Command and control often also relies on uniform standards that fail to take into account different situations and the assimilative capacities of different local or regional environments.

- ***Focus on 'end of pipe'***

Also related to the previous point, the command and control approach usually focuses on 'end of pipe' solutions, mandating emission levels rather than providing for alternative cleaner technology approaches. In short, command and control does not take into account a holistic approach.[772]

6.2.8 Alternative compliance mechanisms

This section considers alternative approaches to enforcing compliance with environmental laws. These can be divided into incentive-based measures and voluntary measures. Incentive-based measures are more positive in their approaches as motivators and rewards for compliance, but may not always be positive as they can include disincentives aimed at discouraging certain offending behaviour.

They are diverse and include market-based instruments, regulatory instruments and information-based instruments. These measures encourage persons to go beyond compliance.

Voluntary compliance measures are an important tool that can be used to enforce environmental law.[773]

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[770] Earth & Marine Environmental Consultants (n 62) 1; United Nations Environment Programme (n 293) 30.
[771] Marshall J Breger. and others. "Providing economic incentives in environmental regulation." *Yale J. on Reg.* 8 (1991): 463.
[772] Ibid
[773] Barry C. Field, and Field Martha K (n 688) 105.

6.2.8.1 Market-based instruments or economic incentives

These types of incentives often embody the principle of 'polluter pays'. Industries that entail emission of pollutants can be charged per unit or a fixed price. These charges can be directed towards environmental causes. Emission charges are often referred to as marketable permits. In essence, they represent licences to pollute and can be traded or exchanged. The exchange can allow over-compliance in one situation to compensate for under-compliance in another situation. This frees industrialists from compliance with onerous regulations whilst the charges can be used by the government to fund research into more eco-friendly technologies.[774]

Thus, commercial incentives in the market for pollution prevention can create new markets based on the development of recycling, and waste management industries. Consumer pressure can act as a deterrent as customers deliberately opt for buying environmentally friendly goods and boycotting unfriendly products and can be effective in curbing pollution.

Incentives can also be symbolic in nature such as rewards and recognition for adopting environmentally friendly practices.[775]

The benefits of incentive-based measures are, *inter alia*, that they are less costly to administer, they can motivate regulated persons to better-prescribed standards, and they are preventative rather than reactive.[776] The downside to such measures includes, among other things, the administrative costs associated with their implementation, the fact that they 'frequently ignore the synergistic effects of multiple pollutants or environmental problems'

[774]Werner Antweiler. "Emission trading for air pollution hot spots: getting the permit market right." Environmental Economics and Policy Studies 19, no. 1 (2017): 35-58; Janis D Bernstein. *Alternative approaches to pollution control and waste management: Regulatory and economic instruments*. Vol. 3. Washington: World Bank, 1993.

[775]Robert W. Hahn, and Stavins Robert N. "Incentive-based environmental regulation: a new era from an old idea?."*Ecology Law Quarterly* 18, No. 1 (1991): 1-42.

[776] Paterson, A. "Incentive-Based Measures." *A Paterson A and Kotze LJ (eds) Environmental Compliance and Enforcement in South Africa: Legal Perspectives* (2009): 232-321

and that they can be difficult to administer, for example when having to calculate optimal taxation levels.[777]

Some industries are opting for self-regulation as environmental issues have risen in prominence throughout society and globally. Thus, self-regulation becomes an alternative approach which not only eliminates the need for external regulation but also boosts the image of the industries which self-regulate.[778]

Self-regulation has numerous advantages as compared to the criminal sanctions. However, it also has a few weaknesses. In the discussion that follows I discuss the weaknesses and focus particularly on the advantages of self-regulation.

The main weaknesses of self-regulation are that, firstly, there is a lack of sanctions and secondly, self-regulation has limited enforcement, which might lead to collusion and anti-competitive behaviour. Secondly, the possibility of regulatory capture involves the control of regulation by parties not pursuing the environment and, thirdly, that self-regulation has the perception of being too lenient and not achieving its objective. The other disadvantages of self-regulation are the difficulties for employers to understand how self-assessment works and the lack of human initiative to implement self-assessment and control.[779]

Self-regulation has many advantages. This will be witnessed from the discussion that follows.

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[777] Snijman Craigie. "Fourie Dissecting Environmental Compliance and Enforcement Craigie F, Snijman P and Fourie M Dissecting Environmental Compliance and Enforcement in Paterson A and Kotzé LJ." *Environmental Compliance in South Africa: Legal Perspectives* (2009): 41-61.

[778]David C.Broadstock, and others. "Voluntary disclosure, greenhouse gas emissions and business performance: Assessing the first decade of reporting." The British Accounting Review (2017).8; Hartmut Berghoff, and Rome Adam, eds. *Green Capitalism: Business and the Environment in the Twentieth Century*. University of Pennsylvania Press, 2017.191.

[779] Al-a'abidi, Rana (n 676) 183-198.

Legal theorists have supported self-regulation on three grounds: economic, social and political. Self-regulation is cost effective the government would have less of a burden with regard to costs as companies will bear their own costs.

Criminal sanctions do not provide any incentives to corporate companies in cases where such have been complying with environmental legislation. Self-regulation on the other hand can provide incentives to companies that comply and adopt self-regulatory rules.

A further advantage of self-regulation is that it encourages political participation by assigning enforcement to companies, by asking companies to set and devise the content of the regulation. This would also tap management in companies to design custom-made regulatory systems and constantly cheaper and more effective modes of control would emerge.[780]

Self-regulation has a low regulatory burden on companies. It will result in companies being more committed to the rules they have written and this would foster pride and loyalty within the company. Opposed to criminal sanctions, self-regulation is presented as being tailored to the particular circumstances of the individual company or industry. Self-regulation can also be a win–win solution, as companies enhance their productivity while at the same time protecting the environment.

If a company is responsible for writing and enforcing its own code of conduct, that company would be more likely to dedicate in complying with such rules.

6.2.8.2 Voluntary measures

Voluntary measures are those not required by law but voluntarily assumed by companies so as to further their environmental performance and to mitigate possible harmful consequences arising from their operations. Prime examples include certification schemes

[780] Hamid Abdul, Talal Salma, and Abdul Hadi Sarmed Reyad (n 431) 122-139.

and corporate environmental responsibility programmes.[781]Voluntary measures are usually used to complement existing regulations and are commonly referred to as 'beyond compliance' measures.[782]

Additionally, proponents of voluntary measures point out that traditional regulatory and legislative approaches are slow and that they lag behind the adoption of harmful new technologies and practices.[783]

There are, however, various disadvantages to the adoption of voluntary measures. It is submitted that the primary one, which is perhaps at the heart of all other disadvantages, is the fact that the inherent objective of a corporation is to maximise the investments of the shareholders and thus 'it can be appreciated that, in theory at least, fulfilment of corporate objectives may be seen to marginalise priorities for the benefit of the environment.'[784] Other drawbacks include the fact that voluntary measures often fail to possess sanctions for non-compliance.[785]

Voluntary compliance measures consist of certain environmental rules and regulations which corporate companies freely may choose to comply with. These rules and regulations are adopted voluntarily, and compliance is a matter of choice. Should companies not comply with these rules and regulations they would not be punished.[786] Voluntary compliance measures differ fundamentally from legislation. With regard to legislation, compliance or non-compliance is not a matter of choice. Strict compliance is required, and in the case of non-compliance a penalty is imposed.[787]

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[781]John T Scholz. "Voluntary compliance and regulatory enforcement." *Law & Policy* 6.4 (1984): 385-404.
[782] Ibid.
[783] Ibid, notes that 'typically, the harmful effects of particular practices have to bepervasive before regulation is even contemplated.'
[784]Neil Hawke. *Environmental policy: implementation and enforcement*. Routledge, 2018. 264.
[785]Paula Novo, Martin-Ortega Julia, and Okhuma Murat. "Behaviours in relation to diffuse pollution: the relation between awareness and uptake of measures." (2017). 4
[786]John J.Kirton, and Trebilcock Michael J. *Hard choices, soft law: Voluntary standards in global trade, environment and social governance*. Routledge, 2017.19
[787]Martin Charter, ed. *Greener marketing: A responsible approach to business*. Routledge, 2017.45

There are different types of voluntary approaches. These can be divided in four categories. The different types of voluntary compliance measures include public voluntary programmes; negotiated agreements; unilateral commitments; and private agreements.[788]

Public voluntary programmes are initiatives devised by environmental authorities in which enterprises are invited to participate. The measures are voluntary as there is no direct obligation to participate and no sanction for non-participation. Incentives to encourage participation do exist. Mediated settlements entail the engagement between public authorities and an organisation. In contrast, unilateral commitments represent measures voluntarily adopted by an organisation without the involvement of regulating authorities, similar to self-regulation. Private agreements are those involving an organisation and other agencies within society.[789]

6.2.8.3 The advantages of alternative regulatory approaches

- ***Cost benefits***

Applying a cost-benefit approach, savings 'can run anywhere from 20 to 30 percent to as much as 50 percent or more. Given that the amount that society is actually willing to spend for environmental protection is limited, that means we can get more environmental protection for the same amount of money by using economic incentives'.[790]

- ***Greater incentives for innovation***

As pointed out above, command and control impedes (or, at least, fails to provide incentive for) innovation. In an approach based on market mechanisms or co-regulation, the

[788]Martin Woerter and others. "The adoption of green energy technologies: The role of policies in Austria, Germany, and Switzerland." *International Journal of Green Energy* 14, No. 14 (2017): 1192-1208; Arild Underdal, and Kim Rakhyun E. "10 The Sustainable Development Goals and Multilateral Agreements." *Governing Through Goals: Sustainable Development Goals as Governance Innovation* (2017): 241.

[789]Kristina Murphy. "Procedural justice and its role in promoting voluntary compliance." *Regulatory theory: Foundations and applications* (2017): 43-58.

[790] Robert W Hahn, and Hester Gordon L. "Marketable permits: lessons for theory and practice." *Ecology LQ* 16 (1989): 361; Bruce A. Ackerman, and Stewart Richard B. "Reforming environmental law: the democratic case for market incentives." *Colum. j. Envtl. L.* 13 (1987): 171.

manner in which regulated entities can operate is not limited by regulation. Where the target is cost reduction (based on reduction of emissions), whichever method will be best for achieving that target will be utilised and this method will often be in the form of an innovative approach that does not only take into account end-of-pipe solutions. This is a dynamic process – polluters will constantly be striving for greater cost savings through reduced levels of pollution.[791]

- ***Less responsibility on government***

Although the role of government is not removed altogether, it is reduced to that of a monitoring role without having to administer by setting a host of individual emission levels.[792]

[791]Winston Harrington, and Morgenstern Richard D. "Economic incentives versus command and control: What's the best approach for solving environmental problems?." In *Acid in the Environment*, 233-240. Springer, Boston, MA, 2007.

[792]Marit E Klemetsen, Bye Brita, and Raknerud Arvid. *Can non-market regulations spur innovations in environmental technologies? A study on firm level patenting*. No. 754. 2013.

6.3. Conclusion

This chapter argues that the main aim of criminal law in the environmental regulatory context is deterrence. Retribution is relevant to an extent, but only in cases where the community's condemnation and disapproval would be an issue, which would not be the case with most environmental offences, which tend to be, in themselves, relatively minor and technical in nature. Since there are alternatives to the criminal measures that can provide for deterrence, usually more conveniently and cheaply, it would make good sense for these mechanisms to be used instead of criminal measures where the circumstances warrant their use.

Consequently, the major argument against the use of criminal measures, at least in this chapter, has been that the civil measures are less costly and time consuming. Further, the threat of civil sanctions typically evokes a less defensive response on the part of the targeted polluter, allowing a potentially greater chance for government and polluter to negotiate toward an acceptable resolution of the problem. Finally, the monetary penalties associated with civil penalties can be quite high; this, some argue, realizes both the deterrent effect of the environmental law and the generation of revenue for the government without the added expense associated with the use of the criminal measures. There are, nonetheless, several points against the use of the civil law for realizing pollution control objectives. Perhaps the most passionately argued is that the civil law does not effectively communicate the nature of the evil associated with environmental wrongdoing.

Administrative law is seen as insufficient or inadequate as a deterrent, so that values and interests that may be seen as ecologically should be protected by criminal law.

In principle, a monetary sanction can be both administrative and criminal administrative agencies are unable to impose sanctions of a non-monetary type (such as, for example, imprisonment).

The result is that imprisonment is almost invariably only a criminal sanction and is not available as an administrative sanction, and the realisation that monetary sanctions are insufficient to inhibit pollution of the environment leads to the inevitable conclusion that environmental regulations can only be enforced by a system that is not dependent only on administrative sanctions and that this system must be the criminal law.

The findings of this chapter suggest that criminal measures, suffering as they do from several shortcomings, should be reserved for the more egregious contraventions of environmental law. Other infringements can be addressed by a combination of the measures discussed in this chapter, for e.g. a mix of alternatives (civil, administrative and amongst others) should be used according to the nature and magnitude of the harm.

Effective enforcement of environmental legislation can be enhanced by an approach which brings together the use of civil, administrative and criminal sanctions. All three of these enforcement mechanisms have their individual strengths and weaknesses, but in combination, the strengths of one mechanism can compensate for the weaknesses of the other mechanism.

CHAPTER SEVEN
CONCLUSION

7.1. Introduction

The problem of air pollution in Iraq is one which effects the environment and every individual in terms of quality of life and, more importantly, the long-term ill health effects of breathing polluted air. Nevertheless, everyone's responsibility to avoid or minimise activities which increase levels of pollution in the air.

If there are laws that minimise or prevent the pollution and there is evidence of pollution all around, this would be a good indicator of inadequate enforcement of the law.

It is probably this indicator, more than the absence of criminal prosecutions that leads affected bodies to claim that our environmental law is not being enforced adequately.

The thesis was undertaken Iraqi environmental law and the factors hindering the effective criminal enforcement of air pollution in Iraq. This conclusion incorporates the final judgment of the thesis, which is that the environmental criminal law has failed to achieve full enforcement to protect the environment from air pollution under the Iraqi Constitution.

This study has involved a critique of Iraqi environmental criminal law. An overview of the provisions that could be applied to environmental pollution cases was presented alongside a critique of current Iraqi environmental criminal law.

The point was made that the difficulty in determining the precise scope of Iraqi environmental criminal law lies in the fact that many material provisions are often dealt with by having recourse to administrative environmental regulations that refer in various and sometimes rather ambiguous ways to the criminal provisions of the Penal Code.

Nevertheless, some cases (especially those where no provision from the Penal Code is possible to apply), are dealt with by means of administrative sanctions. However, in such

cases, the statutory limit is very low, and the sanctions that could be applied in practice (more particularly administrative fines) are even lower.

This concluding chapter comprises: the main findings of the thesis; a summary of the research findings chapter by chapter; implications for further research; and a holistic summary of the key points considered.

7.2. The Key Findings of the Study

The study aimed at assessing the extent to which current criminal law provides an effective system for protecting the environment from air pollution crime and whether its current provisions are appropriate for prevention and sufficiently punitive as a deterrent for the level of environmental crime committed.

Two principal issues were considered; first, the current criminal sanctions were critically evaluated to determine their effectiveness as enforcement instruments and alternative enforcement tools were considered; second, in those situations where criminal sanctions have a role to play, the thesis considered how their application can be improved to protect the environment.

It was found that the Iraqi environmental criminal law of air pollution is not fully adequate to deal with the pollution problems. The provisions regulating air pollution in Iraq are founded on various laws and there is no separate legislation for the regulation of air pollution.

The regulation of air pollution in Iraq depends mainly on the provisions of the Environmental Law, while the Penal Code regulates issues not covered by the Environmental Law.

It also depends on the Iraqi Oil and Gas Law, Civil Law and Public Health Law to regulate the enforcement of pollution, even though this law does not provide explicitly for the

enforcement of air pollution, and provides some provisions for regulating the enforcement of pollution in general.

It is the author's view that provisions of the Penal Code, Iraqi Civil Law, and the Iraqi Environmental Law does not provide a comprehensive and effective enforcement to protect the environment from air pollution.

The author presents the view that these laws need to be updated and modernised if they are to be effective in dealing with air pollution laws enforcement.

It is hoped that this research will assist in the creation of guidelines for determining whether the environmental criminal law in Iraq is fully compliant with the in ensuring the rights to a clean and healthy environment as specified under the Iraqi Constitution or whether it still falls short of these rights in Constitution.

7.3. Summary of the General Findings by Chapters

Each chapter of this study offers significant findings and suggestions for a specialised and comprehensive modern environmental criminal law. Each subsequent chapter answers the questions raised by the research.

Chapter one is devoted to an explanation of the key issues of the study as a whole. It contains a review of air pollution laws enforcement in academic literature and describes the arguments among scholars with regard to criminal law enforcement as a method for resolving the air pollution problem.

The second chapter examined the background to environmental pollution and how this issue has developed over time in Iraq.

It has demonstrated that clean air is necessary for human health and wellbeing. Pollution can have dramatic effects on human health and can lead either to chronic illness which is the result of long-term exposure, or acute illness which is caused by accidents.

Consequently, air pollution can have economic outcomes because of the cost of medical treatment for people affected by pollution, the loss of working days when affected people are off work, and the loss of people who are critically ill which leads to the lack of labour.

The findings which emerged in this chapter included the identification of anthropogenic sources as one of the principal causes of gaseous pollution. These sources could either be mobile or stationary. Stationary sources comprised factories, power stations, petrochemical complexes and oil refineries. Additionally, smaller scale stationary sources of gaseous emissions included backhouses, restaurants, workshops, electrical generators and incinerators. These sources are responsible for the release of thousands of metric tons of gases into the air each day. The principal mobile sources of gaseous pollution is the increased use of cars by people and the increase in other forms of road traffic.

It is worth mentioning that environmental principles as such have no legal force because there is no agreement on the definition that should be given to each of these principles. Hence the author takes the view that, these principles may guide environmental policies toward achieving its goals.

The chapter was tried to address the question how environmental pollution should be proven. By focussing on material criminal law and asking ourselves what the consequences are of various existing models of environmental criminal law. Was interested in the consequences both with respect to the ability of the models to provide adequate protection of the environment and in their ability to use the criminal law in a way that respects the rule of law.

The chapter was looked at some of the implications of the various models by comparing them in several overviews. The subsequent conclusion, then shows that in fact, no ideal model exists.

Therefore it seems necessary to find a compromise between the wish to provide adequate protection of ecological values on the one hand and on the other hand the need to respect the *lex certa* principle. Moreover, it seems warranted that for very serious cases of environmental pollution the criminal law intervenes even if the conditions of a licence are met.

This in-depth study of the Iraqi air pollution status as a whole provided an entry point into the next three chapters, which focused on the identified provisions to protect the environment from air pollution. These three chapters revealed many problems related to the environmental law enforcement.

The third chapter examined national laws dealing with air pollution in the country and the international and regional conventions and treaties on air pollution control which have either been signed or ratified by Iraq. Also assisted if these provisions adequate to deal with air pollution law enforcement or it is needed to update and amend.

One of the most significant findings to emerge from this chapter is that the fines imposed on the polluters have a criminal or administrative nature. That said, the fines dictated by these laws are not sufficient to deter polluters and are unlikely to create economic incentives to adopt the environmentally friendly practice. Instead, their triviality may encourage polluters to continue to pollute, as the amount of the fine for an environmental offence may be considerably less than the cost of reducing or eliminating the environmentally harmful activity. The imprisonment as well as dictated by these laws are not sufficient to deter polluters.

The chapter has revealed that the environmental crime has not been determined or consolidated into a single law but is found in a range of separate pieces of legislation. Some of the most frequently used criminal sanctions are found in Law on the Protection and Improvement of the Environment, No. 27 of 2009 and in the Iraqi Penal Code No. 111 of

1969, yet these two pieces of legislation differ in their stringency and level of enforcement between different types of crimes with indeterminate.

This chapter has also shown the Iraqi government also has an obligation in terms of international law to protect the environment. This obligation arises from Law No. 7/2008 on Accession to the United Nations Framework Convention on Climate Change as well as from the various treaties and conventions which strive to protect the environment and to which Iraq is a signatory.

This chapter also makes clear that environmental protection is legally the task of the Ministry of Environment, there remains ambiguity among different government bodies about responsibilities and duties concerning environmental protection. Mostly this is because of the duality, overlap, and contradiction in Iraqi laws, creating confusion in handling issues and problems related to the environment.

The MoE in charged with the responsibility of enforcing environmental law in Iraq. The failure of the MoE to meet minimum standards would mean that the objectives for enacting laws to protect the environment may never be met. Therefore, reform of the MoE is urgent in view of the challenges to this institution discussed above.

Chapter four addressed the types of sanctions provided by the environmental law of air pollution in Iraq.

The research showed that several sanctioning methods other than fines and imprisonment are available in environmental legislation. Most of them (for example, compensation orders) are supplementary to the usual penalty of fine or imprisonment but others, such as revocation of licence or permit, are alternatives. In most cases, the justification for using such instruments is persuasive. Several of these methods are used in other jurisdictions.

This chapter also pointed out several other sanctioning methods that have been used in other countries but not in Iraq, particularly those that target corporations, which are often seen as difficult to penalise. Those methods that can be used generally was considered, followed by corporate penalties.

This study has argued that the section appears to be aimed at corporate offenders, it could be easily adapted for individual offenders to provide for the conditions imposing relevant forms of managerial intervention and adverse publicity orders. Managerial intervention could require either the institution of internal to the administration relating to the incident in question and/or the implementation of compliance procedures or programmes to the satisfaction of the court. Failure to comply within a specified time would lead to the postponed sentence being brought into operation.

Chapter five considered the role and the purpose of using the criminal law to enforce the environmental law. This chapter also briefly discusses provides some idea of how criminal law theorists view the aims of criminal law in general terms. What is of more immediate concern for present purposes, however, is whether these purposes are compelling when used to justify criminal enforcement of environmental offences.

In this context, the term “crime against the environment” might be preferable to the term “environmental crime”. This would be consistent with other criminal law concepts such as crimes against the person, crimes against property etc.

Chapter six considered the preliminary question that has to be decided relates to the use of criminal sanctions in enforcement. If eventually to determine the circumstances in which criminal sanctions as opposed to other alternatives ought to be used, it is necessary to consider why regulators would use criminal sanctions. Of particular importance are the characteristics of criminal law that distinguish it from other means of enforcement: what can criminal sanctions achieve that cannot be achieved by, say, civil liability? It was argued in

this thesis that criminal sanctions should not be used as a matter of course but rather reserved for use in serious or repeat offences. This argument was expanded on considerably in chapter seven. Once the circumstances in which criminal sanctions are useful have been established, the focus then turns onto how to make the criminal sanctions that are used most effective. In order to determine when to use criminal sanctions and when to use alternatives, first in this chapter it was considered the strengths and weaknesses of using the criminal law, bearing in mind the objectives of criminal law identified in chapter six.

The chapter argued that the main aim of criminal law in the environmental regulatory context is deterrence. Retribution is relevant to an extent, but only in cases where the community's condemnation and disapproval would be an issue, which would not be the case with most environmental offences, which tend to be, in themselves, relatively minor and technical in nature. Since there are alternatives to the criminal measures that can provide for deterrence, usually more conveniently and cheaply, it would make good sense for these mechanisms to be used instead of criminal measures where the circumstances warrant their use.

Consequently, the major argument against the use of criminal measures, at least in this chapter, has been that the civil measures are less costly and time consuming. Further, the threat of civil sanctions typically evokes a less defensive response on the part of the targeted polluter, allowing a potentially greater chance for government and polluter to negotiate toward an acceptable resolution of the problem. Finally, the monetary penalties associated with civil penalties can be quite high; this, some argue, realizes both the deterrent effect of the environmental law and the generation of revenue for the government without the added expense associated with the use of the criminal measures. There are, nonetheless, several points against the use of the civil law for realizing pollution control objectives. Perhaps the

most passionately argued is that the civil law does not effectively communicate the nature of the evil associated with environmental wrongdoing.

As explained in this chapter, the administrative law is seen as insufficient or inadequate as a deterrent, so that values and interests that may be seen as ecologically should be protected by criminal law.

The main argument submitted by this chapter, in principle, a monetary sanction can be both administrative and criminal administrative agencies are unable to impose sanctions of a non-monetary type (such as, for example, imprisonment).

The discussion throughout this chapter focused on the result is that imprisonment is almost invariably only a criminal sanction and is not available as an administrative sanction, and the realisation that monetary sanctions are insufficient to inhibit pollution of the environment leads to the inevitable conclusion that environmental regulations can only be enforced by a system that is not dependent only on administrative sanctions and that this system must be the criminal law.

The findings of this chapter suggest that criminal measures, suffering as they do from several shortcomings, should be reserved for the more egregious contraventions of environmental law. Other infringements can be addressed by a combination of the measures discussed in this chapter, for e.g. a mix of alternatives (civil, administrative and amongst others) should be used according to the nature and magnitude of the harm.

Effective enforcement of environmental legislation can be enhanced by an approach which brings together the use of civil, administrative and criminal sanctions. All three of these enforcement mechanisms have their individual strengths and weaknesses, but in combination, the strengths of one mechanism can compensate for the weaknesses of the other mechanism.

7.4. Recommendations and Further Suggested Research

In the light of the examination of the environmental legal system for the air pollution law enforcement in Iraq, the main finding of this study is that most of the laws dealing with enforcement are inadequate. Environmental laws need to be promulgated in line with the international law, the Iraqi Constitution and in the political and economic interests of Iraq.

The author's vision for the Iraqi environmental legal system's governing air environment is set out below. These recommendations would be important in making a suitable environment for the success of an environmental law and the enforcement in Iraq.

 The introduction of a chapter into the Penal Code which is specifically dedicated to air pollution crimes. This chapter should cover deliberate, reckless or negligent assaults on the environment that can cause or create risks of serious impairment, harm or danger to the environment;

 Iraqi environmental laws should undergo a substantial restructuring aimed at achieving the goals of environmental policies as well as the development of more specific environmental legislation on the basis of generally recognised principles, such as the "polluter pays" principle described in principle 16 and the "precautionary approach" described in principle 15 of the Rio Declaration on Environment and Development;

 The close monitoring of the effectiveness of such penalties and the revision of guidelines to ensure that levels of penalties are more realistic. These guidelines should emphasise the nature and seriousness of the offence; the consequences of the offence in terms of damage to the environment; the extent to which offenders profited by the offence; the ability of the offender to pay; and other circumstances surrounding the offence whether aggravating or mitigating;

 The provision of effective sanctions in order to further reinforce the role of criminal law. These sanctions, especially for corporate infringements, should include powers to close

down businesses in serious breach of the law; sequestration (the removal of managers to be replaced by experts for a specified period); audited compliance programmes; seizure of assets, confiscation and restitution; clean-up or restoration orders; prohibition or limitation of certain activities, annulment or suspension of licenses, exclusion from fiscal advantages, exclusion from government contracts and adverse publicity orders;. In addition, the use of certain sanctions such as community service orders and probation should include cases of breaches of environmental laws;

 To facilitate and empower individuals to take legal proceedings against powerful state-owned or private organisations based on the human right to live in a clean, pollution-free environment and because any behaviour on part of such companies against the environment is deemed to be an assault on such rights;

 The ambiguous articles of the Iraqi law of environment should be rephrased to be clear and applicable in a precise manner;

 The development of a national compliance plan to monitor Iraq's fulfilment of its obligations under regional and international conventions that were ratified by Iraq. This development should cover the legal framework in order to identify gaps and contradictory provisions within national laws. Current legislation should be amended to reflect this.

 The establishment of a comprehensive national database for recording criminal environmental cases and other incidents which did not lead to prosecution.

These are general recommendations that this study proposes for the attention of Iraqi environmental policy makers and legislators.

7.5. Potential Reforms to Address Enforcement Problem in Iraqi Environmental Laws of Air Pollution

With these various recommendations in mind, concrete suggestions will now be made for legislative provisions to give effect to the proposals made in this thesis.

1. **The suggested establishment of an environmental protection council in each city to focus on spot law enforcement**

The Environmental Protection Council (EPC) should have a presence in each Iraqi city and should have the responsibility of drafting and implementing policies and regulations to monitor air quality and to detect pollution discharges and their sources as well as offering guidance on environmental protection at local community level.

2. **The suggested transforming the ministry of environment into a detached ministry**

Firstly, a financial audit should be conducted. The second step is to determine each agency's responsibilities and staffing requirements. The final step is to separate the individual detached agency from the county's financial budget. Following this process, the newly established environmental protection departments should not be subject to any control from county administrations in order to be empowered to fulfil its mandate to protect the environment.

The MoE should adopt the full range of enforcement mechanisms available to it including informal approaches (site visits, warnings and notices of violation), and formal approaches that include civil, administrative or judicial enforcement (revocation of permits, facilities closure, liens and monetary penalties), or criminal enforcement (fines and imprisonment).

3. Suggested procedures and methods for enhancing public & NGOs participation

It is important that participation be widened to include members of the public. In this way, citizens will be given a voice and a platform for holding their representatives to account. This is another reason why Iraqi environmental and civil rights legislation should be updated so that citizens can more easily have access to the courts in order to bring lawsuits where environmental rights have been violated as laid down in principle 10 of the Rio Declaration and Article 1 of the Aarhus Convention.

4. Enforceable legislation

Effective enforcement mechanisms depend on the quality of the underlying legislation it is designed to implement. Such a broad scope could be useful in civil litigation, but its enforcement by administrative or criminal sanctions would be unrealistic.

Legislation should avoid complexity and be reasonably understandable by the person(s) for whom the law is being designed. Thus, everyone is deemed responsible for knowing the law from the moment that it has been promulgated and ignorance of the law would still be culpable as the information has been disseminated.

5. Judicial review and establish special environmental courts

The independence of the judiciary is an essential feature of most modern democracies so that the government cannot interfere in their powers regarding the enforcement of environmental laws.

However, special environmental courts would require judges who have appropriate expertise, capabilities, and experience and who have participated in advanced training programmes to enable them to become more specialised in environmental issues.

Legal provisions for crimes involving air environment pollution are frequently distinct from those of traditional criminal liability. In addition, the consequences of criminal behaviour in this type of crime are often of an intangible nature which is not so clear and may

take a long time to emerge. The consequences may often be felt in a different place or at a different time from the place and time where the crime was originally perpetrated. Furthermore, the attribution of cause and effect can be difficult. Finally, the impact of environmental crimes can be widespread extending beyond national boundaries.

In determining sentence, the judiciary should undertake a thorough environmental impact assessment. Where a financial penalty is being considered, it should be of such magnitude as to reflect the financial gain which was accrued by committing the offence and the maximum tariff for such crimes should be considered.

Finally, the Iraqi legislator needs to provide for judicial control over the administrative decisions related to environmental impact assessment studies, so as to prevent abuse of power, and to ensure that the rights of the applicant to challenge wrongful administrative decisions.

6. A Combined use of sanctions

Effective enforcement of environmental legislation can be enhanced by an approach which brings together the use of civil, administrative and criminal sanctions. All three of these enforcement mechanisms have their individual strengths and weaknesses, but in combination, the strengths of one mechanism can compensate for the weaknesses of the other mechanism.

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