

Local Air Pollution and the Human Rights Doctrine

An exploration into the duties of States

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Abstract

The environment and social life adversely affect each other. Solutions can be sought in the linkage between the two: the Human Rights Doctrine might represent duties concerning an environmental issue such as local air pollution. Nitrogen Dioxide, Ozone in the troposphere and Aerosols are three sorts of pollutants that have a big share in local air pollution issues. They both affect human lives seriously and are produced for a considerable portion by anthropogenic sources. The Human Rights Doctrine consists of many bodies and documents. Within the different rights provided by the Doctrine, especially the Right to Health and the Right to Adequate Housing can be connected to local air pollution. While there are exceptions on the immediate realization of the duties to respect, protect and fulfil these rights, the Human Rights Doctrine renders also specific duties that should be followed in any circumstance. Taken together the Human Rights Doctrine specifies an extensive set of duties concerning local air pollution. Special Rapporteurs, living representations of the Human Rights Doctrine, do not seem to refer to these duties up to the same extent.

List of abbreviations

CESCR	Committee on Economic, Social and Cultural Rights
GC	General Comment
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
NMHC	Non-Methane Hydrocarbons
OHCHR	Office of the High Commissioner for Human Rights
PM	Particulate Matter
SR	Special Rapporteur
UDHR	Universal Declaration of Human Rights
UFP	Ultrafine Particles

Preface

During my BSc study I have developed an interest for both Social and Natural Sciences. Starting off with International Development Studies, I discovered that I missed Mathematics, Physics and Chemistry. This brought me to explore courses of Environmental Sciences in my free choice, which eventually brought me to the topic of Air Pollution. Having decided that I wished to continue with an MSc in that direction without losing the interest in Development issues, I wanted to explore a combination between those two fields in my BSc thesis. The theme 'Air Pollution and Human Rights' was born. This thesis is written for a Social Chair group. It was a pleasure for me to analyse Human Rights documents and interpret them as relevant for my topic. This has confirmed my interest in Social Science. This thesis however has also renewed my insight in the importance of Natural Science. Especially in developing countries local air pollution issues need more research attention as well as technical assistance. For me personally this thesis underlines the obvious: that social and 'natural' issues are closely linked in many ways. The process of producing this thesis has increased my interest in that very interface, rather than the social or natural separately.

Looking back on the period behind me, I have many reasons to be thankful. I want to thank Otto Hospes, my supervisor, who from the very start was very enthusiast on my ideas and supportive in many ways. He has helped me to frame the right directions and delineations, at the start of but also during the process. I have enjoyed all the conversations we had, as he understood very well what I wanted, and presented his critics in a constructive way.

I also wish to thank Maarten Krol, professor Air Quality and Atmospheric Chemistry of the Meteorology and Air Quality group, as he has reviewed the second chapter of this thesis.

Many other people have helped me in big or small ways. Geertje de Wit, my lovely fiancée, has among other things on many moments been so kind to listen to all my ideas and conclusions in this thesis.

I have enjoyed and been motivated to continue almost all of the process of producing this thesis. I wish to thank the God in Whom I believe and trust, Who provided me with the talents, strength and ideas during the whole process.

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1 Introduction

Local air pollution and the Human Rights Doctrine: at first this appears as an unusual combination. On one hand, in this introduction I hope to show the relevance of looking at such a combination. On the other hand, the rareness of this combination is a reason for this thesis – with this thesis I wish to explore this unusual combination.

1.1 Sustainability and a right-based approach of air pollution

Sustainability is a term used by almost everyone. Sustainability is always good. But what does it imply? According to Croker, sustainability consists of three dimensions: economic, environmental and social (Croker, 2011). In real world these dimensions are closely linked. Indeed economic activities affect the environment and social life, environmental circumstances affect economic and social activities, and social life affects economic activity and the environment. As their existence is intrinsically linked, one could argue that dealing with those elements should also be linked. The economic and environmental dimension have increasingly been linked since the 1980's and 1990's, supported by coining the term 'sustainable development' by the Brundtland-report. The social and economic dimensions are connected as well, as can be seen with the rise of movements like Corporate Social Responsibility and Corporate Accountability (Utting, 2008). The remaining link, between the social and environmental dimensions, can be found in the rights-based approach towards environmental issues. According to the United Nations Non-Governmental Liaison Service (NGLS) "since the 1992 United Nations Conference on Environment and Development (Earth Summit), the value of applying human rights approaches to meeting sustainable development objectives has become better understood and tested in numerous (...) settings." (NGLS, 2002, p. 1)

Yet the fact that these linkages between *dealing with* the different dimensions need special terms, movements or understanding, shows that they are not there as automatically as the linkages between the dimensions in the real world. While issues in the one dimension affect the other dimension, promoting one dimension not necessarily benefits the other. Precisely because in the real world economic activity can adversely affect the natural environment, plus that dealing with the one does not automatically imply dealing with the other, the explicit attention to the linkages is needed.

A particular field of the natural environment where natural and social are connected, is air quality. Indeed air pollution adversely affects social life. "According to the WHO 2.4 million people die each year from causes directly attributable to air pollution. This boils down to thousands of deaths per year per country by outdoor air pollution alone." (Right to Environment, 2011) Human rights such as the Right to Health seem to be inflicted by an environmental issue like air pollution. As said above, a right-based approach might help in giving this issue explicit attention.

A right consists of two components: a claim that one party can make, related to a duty of some other party. Thus there are two parties in relation to a particular right: right-holders and duty-bearers (Osmani, 2005). Traditionally in the human rights doctrine States have been the primary duty-bearers, while individuals are the right-holders. With a right-based approach towards air pollution, the question arises what this boils down to in the duty-bearer / right-holder discourse. This brings us to the very question of this thesis.

1.2 Specification, question and goals

In this thesis I hope to explore the link between air pollution and the Human Rights Doctrine. The reason I choose for air pollution in particular, instead of environmental problems, is that in this way we can pay a more detailed attention to problems that are existing. The term environment however will come across often; when the Human Rights Doctrine speaks about environmental issues, I can use that in my argumentation for air pollution, because air pollution is an environmental issue.

I have specified the object of interest even more. Not air pollution in general, but *local* air pollution will be discussed – excluding regional (on a scale from 500 to 1000 km) and global air pollution¹ (Slanina & Krol, 2009). This for two reasons, the first similar to the reason to look to air pollution instead of environmental issues: specifications for a more detailed account. The second reason is that the link between *local* air pollution and the Human Rights Doctrine is more probable than *all* air pollution. The UDHR traditionally concerns the relation between States and their citizens, rather than inter-state relations. Local air pollution is a problem for specific citizens, while regional and especially global air pollution quickly runs into an inter-state issue. With air pollution in general, the discussion would quickly turn into a review of problems with the Human Rights Doctrine in relation to transnational issues. The interest of this thesis lies in the relation between the environment and Human Rights, rather than in (non-)transnational character of the Human Rights Doctrine.

1.2.1 Central question

The central question henceforth is:

Which duties can be deducted from the Human Rights Doctrine concerning local air pollution?

I have distinguished three sub-questions in order to answer this central question. First of all it is necessary to describe local air pollution. Besides that, it is relevant to find out whether local air pollution is caused by human actions. A right-based approach implies that abatement of air pollution is motivated by the Human Rights Doctrine. Thus we first have to know whether abatement is an option. If local air pollution is not caused by human action, looking for duties vis-à-vis local air pollution is less pertinent. Therefore the first question to answer is:

1 – Is local air pollution anthropogenic?

Secondly we have to look to the Human Rights Doctrine. We have to find out where the Human Rights Doctrine is connected to environmental issues, and what kind of duties these connections imply. Consequently, our second question is:

2 – Which duties are specified by the Human Rights Doctrine concerning local air quality?

Furthermore it is interesting how these duties are communicated into real world. Special Rapporteurs are mandated by the Human Rights Doctrine, and as such are an authoritative representation. Part of their work is to visit countries to review how these countries live up to the duties laid on them by the Human Rights Doctrine. While after answering sub-question two we know which duties can be deducted from the documents, we also want to know whether these duties can be deducted from the ‘living representations’ of the Human Rights Doctrine. The third sub-question hence is:

3 – How do Special Rapporteurs refer to the duties concerning local air quality in their country visit reports?

¹ Section 2.1.2 will shortly deal with the matter of scale in air pollution issues.

1.2.2 Goals

With this thesis I hope to contribute to an understanding of how a right-based approach can be used to counter air pollution.

In a wider perspective I hope to improve my understanding of relations between natural and social sciences.

1.3 Structure

This thesis is divided into five chapters. After this first chapter the following three chapters will subsequently deal with the three sub-questions. Chapter two describes local air pollution. We will come across three particular pollutants (Nitrogen Dioxide, Ozone and Aerosols), as well as indoor air pollution. We will look to the sources of these pollutants, in order to conclude whether local air pollution is or is not anthropogenic.

Chapter three first defines the Human Rights Doctrine, and then structures the kind of duties it involves. Having defined what the Human Rights Doctrine consists of, for each part of the Human Rights Doctrine connections with air quality will be discussed. The structure of the kind of duties will then be used to find out what duties these connections imply.

Chapter four reviews country visits of the Special Rapporteur on Health and the Special Rapporteur on Adequate Housing. Within these country visits we will search how the Special Rapporteurs use the duties concerning local air quality, as found in chapter three.

In the final chapter first a conclusion will be given, in which we will be able to answer the central question of this thesis. Thereafter a discussion will shed light on the loose ends in this thesis: what could we *not* conclude, and what would be relevant directions for further research?

1.4 Methodology and theoretical framework

The methodology used for this thesis is literature study. For the information on air quality some scientific papers and a reader is used. For background information on human rights, as well as other information appearing relevant for this thesis, besides papers also websites contained appropriate material. Besides that, I have used and reviewed much reports and documents that are produced by the Human Rights Doctrine, such as treaty documents, General Comments and country visit reports.

The discourse of rights and duties guides the argumentation in this thesis, and as such can be seen as a theoretical framework. Much more of a theoretical framework however, is the object of this thesis itself: the Human Rights Doctrine. The Human Rights Doctrine establishes the frame within which this thesis is written: this thesis reviews the different parts of the Doctrine, and goes no further than that. Terms like *maximum of available resources*, *respect*, *protect*, *fulfil*, *prioritize core obligation* and others will frame the discourse of this thesis – and all those terms are lend by the Human Rights Doctrine.

With literature study as methodology and the Human Rights Doctrine as a framework, this thesis has its limitations. I have not studied concrete cases of air pollution. Neither have I conducted interviews with Special Rapporteurs. I have also not carried out research into what countries are already doing on air pollution issues. Each of these tasks would certainly contribute to the knowledge on the linkage between the Human Rights Doctrine and local

air pollution. Each of these might be very relevant and interesting topics for other theses, but fall outside the reach of this thesis and the capabilities of its author.

But let the text speak for itself; let us move to our second chapter.

2 Local Air Pollution

Is local air pollution anthropogenic?

“According to the WHO 2.4 million people die each year from causes directly attributable to air pollution.” (Right to Environment, 2011) Apparently air pollution is a serious threat. This chapter deals with the question whether that threat can be related to human actions. The question, whether air pollution is anthropogenic or merely attributable to natural sources, is an important one, “...as only the anthropogenic part can be influenced by abatement measures.” (Slanina & Krol, 2009, p. 4)

To answer that question, first an introduction into air pollution will be given. After a wide introduction, in the second section we will focus ourselves on local air pollution and describe the local air pollution problems in more detail. We will find out that three particular pollutants play important roles on the local scale. Also we will see that local air pollution affects both industrialized and developing countries, but in quite different faces. In the third section we will look to the sources of the three pollutants. With this information, in the closing section we can face the question head on: is local air pollution anthropogenic?

2.1 An introduction into Air Pollution

Slanina and Krol² define air pollution as “[a] state of the atmosphere that leads to exposure of human beings and/or ecosystems to such high levels or loads that damage is caused.” (Slanina & Krol, 2009, p. 1) Under such a definition air pollution is not one thing, but consists of several pollution problems, differing in source, nature and effect. Furthermore this all is complicated by the fact that many different causalities and interactions exist between the different air pollution problems.

Air pollution is not a new phenomenon. Already in 1306 Edward I of England prohibited the burning of sea coal in craftsman’s furnaces, because it produced foul-smelling fumes (U.S. Environmental Protection Agency, 2010). Yet during the last two centuries attention for air pollution has significantly increased both in quantity and in scale, coupled to the Industrial Revolution. While in the nineteenth and early twentieth century all reports on air pollution were about local problems, since the second half of the twentieth century regional and even global scale air pollution problems were discovered.

2.1.1 Primary and secondary

The very nature of air pollution prohibits any perfect scheme or characterization – as with most, if not all, problems of our world. In the same time, many characterizations have been made. One of this is the distinction between primary and secondary pollutants (see, however, box 2.1). Pollutants are called primary if they have their effect in the form in which they were emitted. Sulphur Dioxide (SO₂) for example is emitted as SO₂ and also causing problems in the form of SO₂ (smog contains SO₂). Secondary pollutants are pollutants that are not emitted as such. For example ozone (O₃) is a pollutant when it is in the lower part of the atmosphere, the troposphere. Yet ozone itself is barely emitted, but is formed through chemical reactions of other compounds. Thus, when a government wants to deal with problems resulting from SO₂, it has to find the sources of

Box 2.1 Not the final characterization

One pollutant can be both primary and secondary, or involved in the formation of a secondary pollutant. For example, besides smog in which SO₂ is a primary pollutant, SO₂ also is involved in the formation of a secondary pollutant, namely SO₄ – causing acid rain.

² Most of the information on Air Pollution in this chapter is retrieved from their reader.

SO₂, but when it wants to lower concentrations of ozone, it has to deal with the sources of the compounds by which ozone is formed.

2.1.2 Scale

Air pollution can also be characterized according to scale. Slanina and Krol use three categories for scale: local, regional and global. Example of a local problem is the London smog episode in the fifties. Acid deposition and eutrophication are typical examples of regional air pollution. Widely known global problems are the Antarctic ozone hole and global warming.

Box 2.2 Confusing lifetime

Lifetime can be a confusing concept. It is attractive – but mistaken – to think: it is good if a pollutant has a short lifetime: then it has a shorter time to do any damage. Rather, it is the other way around: the easier a compound reacts (the more violent it is), the shorter its lifetime is.

The concept of scale is strongly coupled to the lifetime of a particular pollutant, namely how long it takes to remove it from the atmosphere. The longer the lifetime, the longer the time to transport the pollutant to another place. For example sulfur dioxide (SO₂) has a lifetime in the order of days, causing local air quality problems. On the other hand the lifetime of carbon dioxide (CO₂) is calculated to be 200 years, giving it enough time to transport around the world and to cause global warming, a global issue. See also box 2.2.

Let us, with this characterization of scale in mind, continue to look to local air pollution in more detail.

2.2 Local air pollution: three pollutants

Slanina and Krol name three kinds of local air pollution: “inorganic & organic compounds near sources, ozone, and aerosols” (Slanina & Krol, 2009, p. 2). Inorganic and organic compounds still consist of quite some different pollutants. One of them is nitrogen dioxide (NO₂). This compound, together with ozone and aerosols, have according to Brunekreef and Holgate nowadays the most attention in air pollution research (Brunekreef & Holgate, 2002) (see table 2.1). It is therefore relevant to look to these three pollutants in more detail.

Local air pollution (Slanina and Krol)	Most researched (Brunekreef and Holgate)
Inorganic & organic compounds <i>(for example Nitrogen Dioxide, NO₂)</i>	Nitrogen Dioxide (NO ₂)
Ozone (O ₃)	Ozone (O ₃)
Aerosols	Aerosols

When we look to those pollutants in more detail, we will discover that scale, as well as primary/secondary, is not the final characterization. Within local air pollution these three pollutants play an important role – however, these three pollutants do not merely cause local air pollution, but are also involved in regional or even global issues.

2.2.1 Three pollutants

- Nitrogen Dioxide

Nitrogen dioxide receives quite some attention in research, because it is involved in different air pollution problems. As said, these are not only local problems. For example nitrogen dioxide is involved in acid deposition and eutrophication, both being non-local (regional) problems.

On a local scale nitrogen dioxide is involved in the chemical reactions of ozone formation. Besides that, it seems to be a primary pollutant as well. According to Brunekreef and

Holgate, “[s]tudies in Boston (...) showed that *nitrogen dioxide* and PM2.5 were associated with life-threatening arrhythmia (...)” (Brunekreef & Holgate, 2002, p. 1235; emphasis added).

In other words: NO₂ is involved in both local and regional air pollution. It is a pollutant for more than one reason, being a primary pollutant as well as involved in the formation of

Box 2.3 Atmospheric information

The troposphere ranges from 0 to about 10 kilometres above earth’s surface. Baring in mind that most of our life is in the lowest 10 meters, it feels as if ‘ozone in the troposphere’ still can be on several places other than where it does any harm to us. Yet precisely in those meters we are living, ozone is formed (as we will see when we look to the sources). Due to atmospheric circumstances vertical transport is a slow process. Because of its high reactivity ozone has not a lifetime long enough to be transported for a long time; thus it remains close to where it is formed – close to us.

secondary pollutants. As for the local scale, NO₂ is harmful itself (primary pollutant), but more importantly it is part of the ozone formation. This brings us to our next topic.

- Ozone in the troposphere

Our atmosphere is divided into different layers. The lowest layer, ranging from 0 to 10 kilometers above earth’s surface, is called the troposphere. The layer on top of that, the stratosphere, ranges from 10 to 50 kilometers. Ozone can be

in both layers (see box 2.3). Interestingly enough in the stratosphere it is beneficial, while in the troposphere it is a pollutant. Ozone in the stratosphere is known as the ‘ozone layer’. This layer of ozone reacts with UV-light, and thus prevents this harmful light to reach the earth’s surface. Yet ozone in the troposphere is a “threat to human health but also to vegetation” (Slanina & Krol, 2009, p. 78). Indeed several studies prove the damage of ozone, activating stress, causing tissue damage and increase sensitivity for allergies (Brunekreef & Holgate, 2002). We live in the troposphere, and thus if ozone is in the troposphere as well, it can do damage to us. Therefore ozone in the troposphere is considered to be a pollutant. This kind of pollution is otherwise known as ‘photochemical smog’.

- Aerosols

Aerosols are all kind of particles that are suspended in the air. Other names are particulate matter or particulates. Their size can range from a few nanometers (1*10⁻⁹ meters) to some hundred micrometers. For comparison: the width of a hair is about 100 micrometers.

Aerosols are all around us. They come from several different sources and their impact differs from local to global scale. In most of the air pollution issues they have a role, either beneficial or negative. For example aerosols reflect sunlight, and thus form a positive factor in the global warming issue because they prohibit some solar radiation to reach the earth and warm up the atmosphere. As a secondary pollutant aerosols play their part in acid deposition: for example nitrogen dioxide can react with OH to form the aerosol nitric acid (HNO₃), causing acidification of the environment. On a local scale, aerosols can directly affect human health. Another local effect of aerosols is the reduction of visibility. The more aerosols in the air, the more visibility is limited. In my opinion this local effect of aerosols is less interesting, and it will therefore not be dealt with in the rest of this thesis.

In relation to its adverse effects on health, epidemiological research has made clear that the finer particles (with size smaller than 10 micrometer (µm)) are related to an “increase in respiratory and cardiovascular morbidity and mortality...” (Brunekreef & Holgate, 2002, p. 1236). Terms used often are PM10, meaning all the particles with a size smaller than 10 µm, PM2.5 (all particles smaller than 2.5 µm) and PM0.1 (smaller than 0.1 µm, otherwise known as UFP, Ultrafine Particles). The smaller the particle, the deeper it can penetrate into the human body via the respiration system. According to Slanina and Krol, “[m]ost probably

the very small particles, which penetrate deep into the lungs, cause most of the health effects.” (Slanina & Krol, 2009, p. 52)

See table 2.2 for a short summary of the three pollutants.

Pollutant	Also known as	Good to remember
Nitrogen Dioxide (NO ₂)		Probably directly harmful, but (more importantly) involved in formation of ozone
Ozone (O ₃)	Photochemical smog (if in troposphere)	Beneficial in stratosphere, very harmful in troposphere
Aerosols	Particulates, particulate matter	Probably: the smaller, the more health effects

2.2.2 Indoor air pollution

In the previous section I gave an overview of three particular pollutants, which receive a lot of attention in research. According to Tsai et al. (2000) most of air pollution research is conducted in developed countries. About the ‘other parts of the world’, Brunekreef and Holgate write that “[f]or millions of people living in rural areas in developing countries, indoor pollution from the use of biomass fuels occurs at concentrations that are orders of magnitude higher than currently seen in the developed world. (...) In the largest cities of the developing world, extreme exposures occur with both the traditional and the modern variety of pollutants.” (Brunekreef & Holgate, 2002, pp. 1234-1235) Indoor air pollution results in 2 million deaths a year, according to the WHO (Burki, 2011). Thus, while most air quality research is conducted in developed countries, air quality problems seem to be most pressing in developing countries, in the form of indoor air pollution.

- Research and reality

Most studies on the health effects of air pollution measure concentrations of pollutants on a fixed site outdoor. These measurements are used as an indicator of exposure to these pollutants (Tsai et al., 2000). People spend a lot of their time indoor. Measuring outside assumes that indoor concentration is closely connected to outdoor concentration. For if this would differ greatly, actual exposure would differ a lot from assumed exposure. This assumption approaches reality if there are no indoor sources of pollutants. Then pollution comes from outside, and concentrations outside are an indicator of both outside and inside concentrations. In developed countries, where most research is conducted, this is relatively true³. Yet in developing countries often indoor sources exist, such as “open fires or crude stoves”. For this reason, Tsai *et al.* conducted a study into the correlation between indoor and outdoor concentrations in Bangkok. Their conclusion was that “ambient monitors (...) greatly underestimated the exposure levels of people living with indoor sources.” (Tsai, et al., 2000, p. 24)

- Indoor air pollution and the three pollutants

Indoor air pollution is wider than the three discussed pollutants, yet still these pollutants appear as important parts of indoor air pollutants. Smoke generated indoor contains a diversity of harmful compounds, including nitrogen dioxide, as well as compounds that can react to form ozone (Burki, 2011). According to Burki “[s]mall particles – diameter less than 2.5 µm – seem to be particularly damaging” (Burki, 2011, p. 1559). Also in the part of the world that receives less attention by air pollution research, the three pollutants appear as important ‘troublemakers’.

³ ‘Relatively true’: also in developed countries there are indoor sources, such as chipboard, indoor cooking, bad ventilation, fungi (Krol, 2011).

2.2.3 Concluding

In this section we have described the most important forms of local air pollution. In particular three pollutants, namely NO₂, O₃ and aerosols, receive much attention. In the developed countries much research has been done, showing that these pollutants are harmful to humans and vegetation. Yet, besides the developed world, also in developing countries these pollutants are involved in local air pollution. Indoor air pollution seems to be under-researched and underestimated. Still it is clear that is a serious local air pollution issue.

We now know that local air pollution, and especially the three pollutants, is an issue all over the world. Let us therefore move on to the next section, and find out what the sources of those three pollutants are.

2.3 Sources

In the previous sections we looked to three particular pollutants. In this section the most important sources of these three pollutants will be dealt with respectively.

2.3.1 Nitrogen dioxide

In tabel 2.3 sources of NO_x are given as estimated by Graedel and Crutzen, which is also a measure for the emission of nitrogen dioxide (see box 2.4). According to their compilation, the amount of anthropogenic and natural emissions are comparable, with anthropogenic emissions being

somewhat higher. Industrial and utility activities are a big anthropogenic source. Under this category falls traffic: according to Slalina and Krol “[i]n Western Europe and the US traffic

Sources of NO _x	Emission (Tg/year)
Industrial and utility activities	22
Biomass burning (anthropogenic)	5
Biomass burning (natural)	1
Lightning	5
Biogenic emissions from land areas	15
Total anthropogenic emissions	27
Total natural emissions	21

Box 2.4 NO_x and NO₂

NO_x stands for both Nitrogen Monoxide (NO) and Nitrogen Dioxide (NO₂) combined. These two gasses so easily react into each other that it often makes no sense to distinguish between the two. Emitted NO can easily become NO₂ and vice versa. Therefore in many figures the term NO_x is used, which for our case is a good measure for NO₂.

(...) contribut[es] to 50% or more of the total NO_x emissions in these parts of the world.” (Slanina & Krol, 2009, p. 43) On the other hand biogenic emissions from land areas have also a large contribution to the NO_x-concentration, which can be considered to be a natural source. Also lightning is a source fully natural. Biomass burning nowadays is mostly anthropogenic, caused by agricultural activities in Asia, South-America and Africa.

With the focus on local air pollution in mind, the anthropogenic part becomes even more important. While natural emissions are more dispersed, especially traffic causes highly localized emissions. Thus for local air pollution in particular, anthropogenic sources of NO₂ are a big part among other sources.

2.3.2 Ozone

Ozone is a typical secondary pollutant: there is no direct emission of ozone. Thus, when we ask ourselves what the sources of ozone are, we have to look to the compounds involved in the formation of ozone. It is beyond the scope of this thesis to show the complex set of reactions involved in the formation of ozone. In short, ozone is formed through a reaction of nitrogen oxides and hydrocarbons (compounds consisting of hydrogen and carbon) under

the influence of sunlight (Brunekreef & Holgate, 2002). Ozone formed in this process is called photochemical smog.

The sources of nitrogen dioxide were discussed in the previous section. In table 2.4 the (very uncertain) estimates of hydrocarbon-emissions are given. This shows that for hydrocarbons anthropogenic emissions are much smaller than natural emissions. Only in industrialized areas heavy traffic is the dominant source of hydrocarbons.

Table 2.4 Sources of NMHC⁴ (Slanina & Krol, 2009)

Sources of NMHC	Emission (Tg/year)
Industrial and utility activities	45
Solvents	15
Biomass Burning	45
Biogenic emissions from land areas	830
Biogenic emissions from oceans	27
Total anthropogenic emissions	105
Total natural emissions	855

It is also relevant to look under which circumstances ozone is formed. While light is needed for the reaction, high temperatures also speed up reactions. Thus high ozone concentrations are especially found in the summer. Yet more importantly for our case, ozone formation is also more efficient with a low refreshment rate of air: “low wind speeds and a mountain protected geographical domain limit the exchange with cleaner air masses.” (Slanina & Krol, 2009, p. 82). Especially on places where many people live – cities – there is both much emission of NO_x and hydrocarbons, as well as low wind speeds. Thus those places are very efficient spots for local ozone formation.

Apparently, despite the high natural sources of hydrocarbons, ozone formation is greatly attributable to anthropogenic sources. At spots where many people are, much anthropogenic emission of compounds needed for ozone formation occurs – eg. through traffic. These spots are also perfect places for ozone formation.

2.3.3 Aerosols

As said in section 2.2.1, there are many different kinds of aerosols. Logically there are also many different sources for aerosols. Emission of gases may lead to the formation of aerosols, thus called secondary aerosols. Other aerosols are emitted directly (primary aerosols), for example due to biomass burning, fossil fuel or sea salt. Still others reach the atmosphere because of resuspension due to movement of traffic (primary aerosols as well), for example dust on the highway. In table 2.5 an overview of several sources of aerosols is given.

Compared to sea salt and soil dust the other sources do not seem to contribute significantly. Yet these numbers are disturbed by the fact that the amounts are given in weights (Teragrams). Logically the bigger particles weight more. Yet “large particles have no effect on human health, as they do not penetrate the respiratory tract.” (Slanina & Krol, 2009, p. 134) Thus most of the sea salt and soil dust will not be considered as air pollution⁵. The smaller particles – such as organic matter and black carbon, as well as the secondary aerosols – most likely have the most health effects. Among those smaller particles anthropogenic sources are very much present. Fossil fuel is fully anthropogenic, but also biomass burning is mostly caused by humans. As for the secondary aerosols, organic compounds are the only exception on the rule that anthropogenic sources emit more than natural ones.

In other words: especially among the more violent aerosols (meaning: smaller particles), the anthropogenic sources have a big share in the total amount.

⁴ These numbers are emissions of Non-Methane Hydrocarbons, NMHC. Methane is also a hydrocarbon, but its concentration is so high that the figure with methane included would mainly say something about methane instead of hydrocarbons in general.

⁵ Soil dust however can be dangerous. Inhaling much of this dust will result in pneumoconiosis – a fancy word for ‘too much dust in the lungs’ (Krol, 2011).

Table 2.5 Sources of aerosols (Slanina & Krol, 2009)			
Source – primary aerosols	Global emissions (Tg/year)	Source – secondary aerosols	Global emissions (Tg/year)
Organic Matter		Sulfate	
-Biomass burning (0-2 µm) <i>[Mostly anthropogenic]</i>	54	-Anthropogenic	122
-Fossil fuel (0-2 µm) <i>[Anthropogenic]</i>	28	-Biogenic	57
-Biogenic (>1 µm)	56	-Volcanic	21
Black carbon (0-2 µm)		Nitrate	
-Biomass burning <i>[Mostly anthropogenic]</i>	5.7	-Anthropogenic	14.2
-Fossil fuel <i>[Anthropogenic]</i>	6.6	-Natural	3.9
-Aircraft <i>[Anthropogenic]</i>	0.006	Organic compounds	
		-Anthropogenic	0.6
		-Biogenic	16
Bigger particles			
Industrial dust (>1 µm) <i>[Anthropogenic]</i>	100		
Sea salt (0-16 µm)	3340		
Mineral (soil) dust (0-20 µm)	2150		
Total natural emissions (bigger particles included)		5643.9 Tg/year	
Total anthropogenic emissions (bigger particles included)		441.8 Tg/year	
Total natural emissions (bigger particles excluded)		153.9 Tg/year	
Total anthropogenic emissions (bigger particles excluded)		341.8 Tg/year	

2.3.4 Summary: anthropogenic sources

In table 2.6 a summary is given of the things we concluded with the different pollutants.

Table 2.6 Summary: importance anthropogenic sources	
Pollutant	Anthropogenic source
Nitrogen Dioxide (NO ₂)	Especially for local air pollution anthropogenic sources (e.g. traffic) big part
Ozone (O ₃)	Most efficient circumstances for formation at places where humans are: largely due to human actions
Aerosols	The smaller particles, being more violent, are also more emitted by humans

2.4 Local air pollution and human causes

We can now come back to the main question of this chapter: is local air pollution anthropogenic? Local air pollution appears to be a serious health issue in both developed and developing countries. The sources of the three most important local pollutants are not merely anthropogenic, but certainly human actions have a big share in the pollution. Especially for local air pollution (NO₂), especially where humans live (O₃), especially the more violent particles (aerosols), are anthropogenic (see table 2.6).

So, is local air pollution fully anthropogenic? No. But local air pollution is for *a substantial amount* caused by human action. And thus abatement measures are absolutely relevant for the air pollution problems we saw in this chapter. Indeed humanity can do something to prevent air pollution problems. It remains a question whether we are obliged to, according to the human rights doctrine. For this very question we move on to chapter 3. But not before we look to a matter that complicates things: the whole world is not the same.

2.4.1 *Indoor air pollution versus traffic*

In the previous section we saw that indoor air pollution appears to be a serious issue and at the same time under-researched. Yet what among problems is big, under sources is rather small. Among the sources, “indoor pollution from the use of biomass fuels” (Brunekreef & Holgate, 2002, p. 1234) is just a part of ‘biomass burning’. Especially with NO₂ traffic appears as a much bigger problem.

There seems to be a classic North/South division in this issue. Among the developed countries traffic is a huge source of local air pollution. Big cities with a lot of traffic are efficient places for the buildup of pollution. Yet in the rural developing world, indoor air pollution is a much bigger source of problems than traffic. And in the large cities in the developing world, a combination of both appears: traffic and *also* indoor biomass burning.

Local air pollution certainly is a big issue. Not only because of its big impact, but also because it is not one and the same throughout the whole world. Dealing with local air pollution asks for different measures at different places.

3 The Human Rights Doctrine

Which duties are specified by the Human Rights Doctrine concerning air quality?

Abatement measures of local air pollution is a relevant issue. Relevant for two reasons: local air pollution is a serious threat for human health, and, as we saw in the previous chapter, it is for a great deal caused by human actions. The next step in our argumentation is to find out whether any responsibilities can be connected to this relevance. The Human Rights Doctrine is chosen as an entry point for this question. In this chapter we hope to find out whether there are duties concerning air quality, based on the Human Rights Doctrine. In the first section we will explore the width of the Human Rights Doctrine. In the second section we will look to the theory of rights and duties, to find out what kind of duties the Human Rights Doctrine conveys. In the third section we will find out which rights are related to a polluted atmosphere. With all this information in the fourth we will be able to describe the duties concerning air quality according to the Human Rights Doctrine. The fifth and closing section summarizes these findings, in order to answer the main question of this chapter.

3.1 Exploring the Human Rights Doctrine

As a direct reaction on World War II, in 1945 the United Nations Organization was created. “The creators of the UN believed that reducing the likelihood of war required preventing severe and large-scale oppression within countries.” (Nickel, 2007, p. 8) The UN Charter accepted at that time did not yet specify particular human rights. Yet as a purpose it mentioned: “[t]o achieve international co-operation in (...) promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion; ...” (United Nations, 1945, article 1.3) Shortly after the approval of the Charter a committee was assigned to make an international bill of rights. Thus in December 1948, the Universal Declaration of Human Rights (UDHR) was created.

It is not so that before 1948 no sense of rights for humans existed. However, while former rights were built on particular ideologies, for the UDHR the creators tried to approach (and believed to achieve) universal application through an ignorance for ideological divisions. Besides (attempted)⁶ universality, another feature of Human Rights is that they are minimal standards rather than ideal goals. “Human rights aim at avoiding the terrible rather than achieving the best.” (Nickel, 2007, p. 36) Therefore, besides applying to every human, it also applies in every situation, and leaves enough space for decision making at national level. Human Rights primarily address governments (Nickel, 2007; Osmani, 2005). Of course certain human rights imply also a restriction for individuals. For example the right against torture implies that neither individuals nor governments are allowed to torture a person. Individuals are also secondary addressees, as they are ultimately responsible for the government in place, through their support via voting or obedience. (Nickel, 2007)

3.1.1 International Bill of Human Rights

In the first twenty years of the UDHR the signatories to the document had no special obligations. However, in 1966, two covenants were made: the International Covenant on Civil, and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR). Though the UDHR remained non-binding, these covenants put

⁶ By no means I wish to ventilate doubts on the universal applicability of the UDHR. However, neither do I want to state without question that *it is* universal – therefore words such as ‘tried to approach’ and ‘attempted’ have been added.

certain obligations on the parties to the document. “Now parties also had to submit periodic reports and the supervisory Committees were allowed to question state representatives and draw attention to shortcomings.” (Kierkels, 2010, p. 19) The UDHR together with the two covenants is referred to as the International Bill of Human Rights.

The two covenants are a worthy addition to the UDHR, by bringing in certain obligations. Another benefit of these covenants is that they clarify the reach of the rights laid down in the Declaration. The ICESCR is created with the recognition that “...the ideal of free human beings enjoying freedom from fear and want can only be achieved if conditions are created...” (United Nations, 1966b, Preamble). While the UDHR puts “a common standard of achievement for all peoples and all nations” (United Nations, 1948, Preamble), the covenants define certain conditions for that standard.

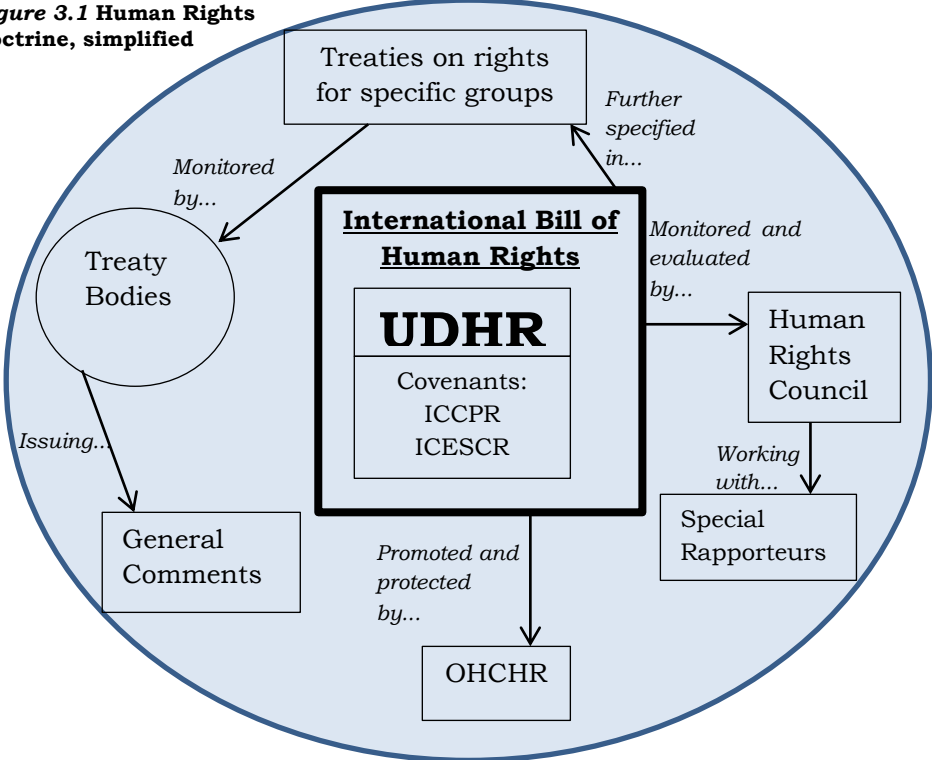
3.1.2 Further treaties and UN bodies

The covenants set conditions and clarify the reach of the UDHR to some extent, together forming the International Bill of Human Rights. Around and related to this Bill throughout the years several other documents and institutions have evolved to promote the rights laid out in the UDHR. The international community has developed several treaties on rights for particular groups in society, such as children, women, indigenous people or ethnical groups (Kierkels, 2010). These treaties help to clarify and specify the rights even more.

Besides these treaties the United Nations also has many bodies mandated to protect and monitor human rights. First of all there is the Office of the High Commissioner for Human Rights (OHCHR). They are “the principal United Nations office mandated to promote and protect human rights for all...” (OHCHR, 2011b). A separate body is the Human Rights Council, which is charged to monitor and evaluate the conditions of human rights. The Human Rights Council works with several Special Rapporteurs. Special Rapporteurs are mandated with theme- or country-specific issues. A Special Rapporteur can go even further with clarifying and specifying the reach of a particular right.

The former are charter-based bodies: mandated by the UN Charter. There are also ten treaty-based bodies: bodies monitoring and promoting the separate covenants and treaties (OHCHR, 2011a). These bodies also clarify the scope and obligations of certain rights by issuing General Comments.

Figure 3.1 Human Rights Doctrine, simplified



3.1.3 Concluding the Human Rights Doctrine

The previous two sections have been summarized in figure 3.1. With this information we now know where to search for possible linkages between the Human Rights Doctrine and air quality. The core of the Human Rights Doctrine is the Universal Declaration of Human Rights (UDHR), divided into and further specified in two Covenants (ICCPR and ICESCR). Around this International Bill of Rights (as these three documents are referred to), both different treaties and bodies shed light on the scope of Human Rights. These sources might help us to find out whether air quality is within the scope of Human Rights. However, first we have to turn to a more basic question: what kind of duties does the Human Rights Doctrine place on states? Let us face this question in the following paragraph.

3.2 Rights and duties in the Human Rights Doctrine

Obviously rights imply two sides: one of the right-holder and one of the addressee, also called duty-bearer. Right-holders have to demand their rights, while duty-bearers have to fulfil their obligations. The supreme aim of Human Rights is to “prevent governments from doing horrible things to their people...” (Nickel, 2007, p. 7). Thus the primary right-holders with respect to Human Rights are individuals, while the primary duty-bearers are governments. This does not imply that a state has to provide everything. It means that “the State has an obligation to create the conditions that enable other duty bearers (...) to fulfil their responsibilities.” (Theis, 2003, p. 1)

The reach of a State’s responsibility are primarily its borders. Article 2 of the ICCPR states that States have “to respect and to ensure to all individuals *within its territory and subject to its jurisdiction* the rights recognized in the present Covenant, ...” (United Nations, 1966a, article 2 sub 1, emphasis added).

3.2.1 Respect, protect, fulfil

The duty of a state towards human rights analytically falls apart into three categories: a duty to respect, to protect and to fulfil a right (Osmani, 2005). The duty to respect implies that a state does not breach the enjoyment of a certain right. The duty to protect implies that a state prevents third parties to breach enjoyment of a certain right. The duty to fulfil implies that a state adopts measures such that the enjoyment of a certain right can be secured. In table 3.1 a concrete example is given on the implications of the above three duties. It shows us that the demands of a right are quite extended.

Duty to...	Specified for clean water
Respect	Not to pollute someone’s water
Protect	Prohibit one to pollute another’s water
Fulfil	Facilitate in making or keeping someone’s water clean enough

3.2.2 Reach of duties according to the International Covenants

This, however, is not the end of the story. While the ICCPR article 2 grants no exceptions on these duties, the ICESCR article 2 seems to do so: “...to the maximum of its available resources, with a view to achieving progressively the full realization...” (United Nations, 1966b, article 2 sub 1). Apparently the rights held in the ICESCR are allowed to be non-fulfilled in some circumstances, and have to be achieved *progressively* rather than *immediately*.

Then what remains of the duties to respect, protect and fulfil the rights? General Comment No. 3 comments on this. “[W]hile the Covenant provides for progressive realization (...), it also imposes various obligations which are of immediate effect.” (1990) As a first example of an immediate duty the *duty not to discriminate* is mentioned. Another immediate duty is the *duty to take steps*. Circumstances (such as not enough available resources) can justify that

not everything can be done to fulfil a right – however States at least have the duty to *take steps*.

While the *duty to take steps* can be seen as vague, sub 10 and 12 of General Comment No. 3 mention two immediate duties more concrete than the former. Kierkes terms them respectively the *duty to prioritize minimum core obligations* and the *duty to prioritize the most vulnerable* (Kierkels, 2010). States have the minimum core obligation “to ensure the satisfaction of (...) minimum essential levels of each of the rights” (CESCR, 1990, paragraph 10). Also “...even in times of severe resources constraints (...) the vulnerable members of society can and indeed must be protected by the adoption of relatively low-cost targeted programmes.” (CESCR, 1990, paragraph 12) Thus, while the covenant gives room for exemptions on the duty to fully respect, protect and fulfil a right, it places the immediate obligation not to discriminate, to ‘take steps’ and to prioritize.

Table 3.2 provides a summary of the information described in this section.

Table 3.2 Duties according to the International Covenants		
Covenant	Exceptions?	Immediate duty
ICCPR	None	“...respect and (...) ensure (...) the rights recognized in the present Covenant...” (United Nations, 1966a, article 2, sub 1)
ICESCR	Progressive realization, available resources	-not discriminate -take steps -minimum core obligation -prioritize most vulnerable

3.2.3 International cooperation

We saw that the State is the primary duty-bearer, bearing a duty towards individuals within its territory. We saw that the duty of a State runs further than merely respecting a right. We also saw that there can be circumstances in which a State is excused for not yet fully having fulfilled its duty implied by a right. An interesting question that remains is: are there duties beyond borders? Does the Human Rights Doctrine provide solutions for those individuals living in a State that does not have sufficient ‘available resources’ to secure a right? To some extent: yes.

International cooperation is specifically mentioned in the ICESCR. “Each State Party to the present Covenant undertakes to take steps, individually and through *international assistance and co-operation*...” (United Nations, 1966b, article 2, sub 1, emphasis added). General Comment 3, paragraph 13 adds: “...the phrase ‘to the maximum of its available resources’ was intended by the drafters of the Covenant to refer to both the resources existing within a State and those available from the international community through international cooperation and assistance.” (CESCR, 1990) Thus, with international assistance being part of the available resources, it is a State’s duty to ask for that assistance if its own resources are not sufficient enough.

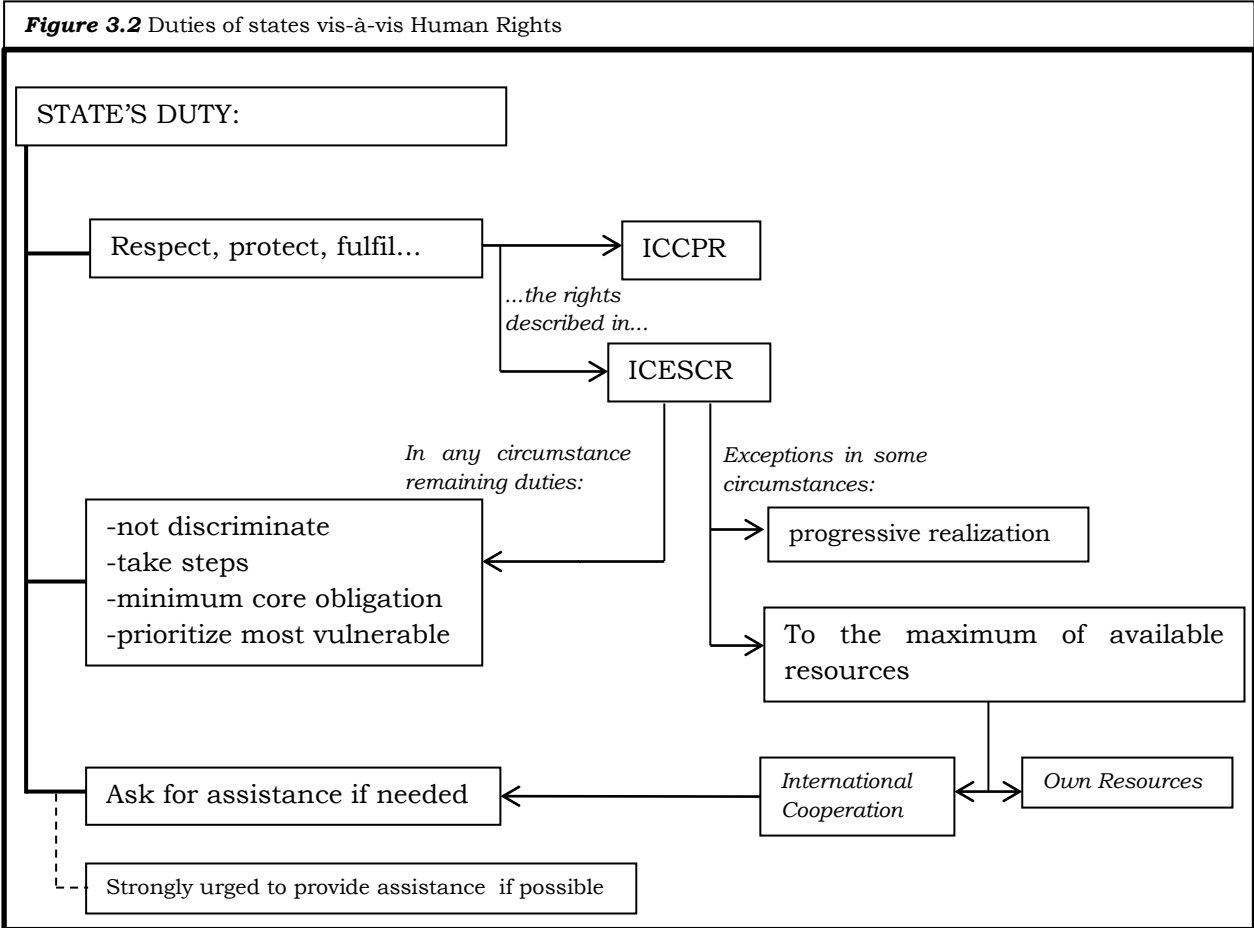
Do States have the duty to respond a ‘call for help’? The United Nations Non-Governmental Liaison Service (NGLS) writes that “[State Parties] have a duty to cooperate internationally and afford international assistance where needed in the realization of the human rights of all people.” (NGLS, 2002, p. 1) In Article 6 of the Declaration on the Right to Development the General Assembly of the United Nations proclaims that “[a]ll States should co-operate with a view to promoting, encouraging and strengthening universal respect for and observance of all human rights (...)” (United Nations, 1986, article 6, sub 1). Yet in the same document it is recognized that “the creation of conditions favourable to the development of peoples and individuals is the primary responsibility of their States” (Preamble).

Thus, as for international cooperation, we can say that it is a duty of each State to ask for assistance if needed, and that the Human Rights Doctrine strongly urges State Parties to

provide assistance if they can do so – but it does not obligate them to. And this is indeed everything the Human Rights Doctrine can do, with State Parties as sovereign primary addressees. It can place duties on State Parties in relation to their citizens, and as such even obligate a State to conduct international contacts if this is needed for its citizens. Yet it cannot obligate a State to conduct international assistance if this is needed for the citizens of another State – it can only strongly urge to do so.

3.2.4 Summary of duties

In figure 3.2 a visualisation of the above described duties is given. In its most abstract form any State has the duty to respect, protect and fulfil the rights described in the International Bill of Human Rights. While in some circumstances exceptions on the full realization of human rights can be made, in any circumstance remaining duties are to not discriminate, to take steps, to hold on to core obligations and to prioritize the most vulnerable. As for a circumstance in which an exception can be made – available resources – the duty remains to ask for assistance if own resources are not sufficient. With respect to this ‘cry for help’, States with sufficient resources are strongly urged – but not bound by some duty – to give assistance.



We now know the width of the Human Rights Doctrine (paragraph 3.1), as well as what kind of duties the Human Rights Doctrine places on the State Parties. With this information in mind, we can move on to the next paragraph, to find out what the Human Rights Doctrine has to say about air quality.

3.3 Air Quality and the Human Rights Doctrine: an overview

In paragraph 3.1 we saw that the Human Rights Doctrine is not one single document, but rather a body consisting of several parts. Besides not being a single document, it also was not created and finished at some moment. It evolved over time: first the UDHR, later the Covenants, and later on several other documents and bodies, each clarifying, restricting or broadening the reach of Human Rights. This, we will see further on, is very relevant for the connection between the Doctrine and air quality. The connection is not based on a single document, but is 'spread out' over the whole Human Rights Doctrine. The connection has also evolved over time.

In this paragraph we will stick closely to the format developed in paragraph 3.1. First we will look to the International Bill of Human Rights, and then move to further treaties and UN bodies. As we will look to air quality as concrete issue, it will become clear even more how the different parts in the Human Rights Doctrine not necessarily give different information, but rather build further on and clarify each other.

3.3.1 International Bill of Human Rights and air pollution

- UDHR

Health In the core document of the Human Rights Doctrine - the UDHR - neither 'air' nor 'atmosphere' are mentioned. Even the wider topic, 'environment', is not brought up. Yet in our first chapter we saw that local air pollution affects human health. Thus 'health' does give us a start. Health is mentioned in the UDHR: "[e]veryone has the right to a standard of living adequate for the *health* and well-being of himself and of his family, ..." (United Nations, 1948, article 25 sub 1, emphasis added)⁷.

Life The UDHR also grants the right to life: "Everyone has the right to *life*, liberty and security of person." (United Nations, 1948, article 3). According to Stand Up For Your Rights, an International Human Rights NGO, this is also a reason to deal with air pollution. "The right to life (...) could be linked to any environmental disruption that directly contributed to the loss of lives - including to the (...) air pollution causing 2.4 million deaths per year." (Stand Up For Your Rights, 2011).

- The Covenants: ICCPR and ICESCR

Life The right to life is also mentioned by the ICCPR, article 6 (sub 1): "Every human being has the inherent right to life. (...)" (United Nations, 1966a). The same Covenant shows that it finds health important, by placing restrictions on certain rights if they would impair health. For example article 18, sub 3: "Freedom to manifest one's religion or beliefs may be subject only to such limitations as are (...) necessary to protect (...) *health*, ..." (United Nations, 1966a).

Health More important, the right to health comes in quite clear with the other Covenant, the ICESCR. Article 12 of the ICESCR states in sub 1: "The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental *health*." (United Nations, 1966b)

Environment Also in these Covenants no reference is made to 'air' or 'atmosphere'. However, 'environment' comes in in the ICESCR. The above mentioned highest attainable standard of health has to be achieved (among other things) by "[t]he improvement of all aspects of *environmental* and industrial hygiene" (United Nations, 1966b, article 12 sub 2b).

In retrospect we can say that the connection between air quality and the Human Rights Doctrine was not yet so much present in the International Bill of Human Rights. Environment does give us a start, and health gives us an even broader basis. Life would be

⁷ In the remainder of this paragraph, any italic in citations is added by the author if not mentioned otherwise.

a truly strong basis, for the right to life is granted without vagueness or restrictions. However, according to Jonathan Verschuuren the right to life holds a connection with environment too weak to base environmental policy on (Verschuuren, 1993, p. 171). It is therefore good to move on towards the other parts of the Human Rights Doctrine, to find out how the newer treaties and UN bodies have worked out these different entry points.

3.3.2 Further treaties and UN bodies, and air pollution

- OHCHR: Fact Sheets

Health
|
Environment The OHCHR has produced Fact Sheets on several Human Rights issues. Fact Sheet 31 discusses the right to health. In the ICESCR we saw a link between health and environment. In the Fact Sheet it is explained that the right to health is an inclusive right, not only granting right to health care, but also the right on underlying determinants of health. “Healthy working and *environmental* conditions” (OHCHR & World Health Organization, p. 3) are –among others- such underlying determinants.

Health The right to health is founded in the UDHR, and worked out in the ICESCR. The same can be said of Adequate Housing: article 25 of the UDHR mentions ‘housing’, and article 11 of the ICESCR grants the right to an “adequate standard of living (...), including adequate (...) housing, ...” (United Nations, 1966b). Adequate Housing on itself does not directly lead to a link with air quality. Here however comes in Fact Sheet 21 on Adequate Housing, linking it to health. One of the aspects of adequate housing should be habitability: “housing is not adequate if it does not guarantee physical safety or provide adequate space, as well as protection against the cold, damp, heat, rain, wind, other *threats to health* and structural hazards.” (OHCHR, p. 4)

- Special Rapporteurs: Health, Adequate Housing and Environment

Health
|
Environment We saw two issues on which there were relevant Fact Sheets: Health and Adequate Housing. For both topics also a Special Rapporteur has been mandated. Anand Grover is the Special Rapporteur on Health since 2007. In his report to the Human Rights Council on his mission to Guatemala he says the same as Fact Sheet 31: “The right to health is an inclusive right, extending not only to timely and appropriate health care but also to the underlying determinants of health, such as (...) healthy occupational and *environmental* conditions, inter alia.” (Grover, 2011, paragraph 25)

Environment Miloon Kothari was Special Rapporteur on Adequate Housing from 2000 until 2008. In a report to the Human Rights Council he gives a review of his work. While Fact Sheet 21 connects Adequate Housing to health, Kothari connects it also directly to ‘environment’. Kothari writes that “[t]hrough consultations and studies, the Special Rapporteur has identified 14 elements [of the right to adequate housing] arising from international treaty obligations and their interpretation by expert bodies.” (Kothari, 2008b, pp. 5, 6) Element 13 on the list is a ‘safe *environment*’.

So far we have seen that topics like health and adequate housing developed into quite extensive issues, even having their own Special Rapporteur. In this process sometimes the link with environment is explicitly mentioned. Environment itself does not have a Special Rapporteur. Interestingly enough it did have one in the ‘90s. From 1990 until 1995 Fatma Zohra Ksentini was Special Rapporteur on Human Rights and the Environment for the Sub-Commission on Prevention of Discrimination and Protection of Minorities (see box 3.1 and box 3.2).

Box 3.1 The Sub-Commission on Prevention of Discrimination and Protection: facts

- Sub-Commission of the Commission of Human Rights;
- Founded in 1947;
- Renamed in 1999 into ‘Sub-Commission on Promotion and Protection of Human Rights’;
- Ceased to exist in 2006; instead of the Commission of Human Rights came the Human Rights Council. (OHCHR, 2006)

Health
|
Air She was mandated to make a report on the link between Human Rights and the Environment. In 1994 Ksentini issued her final report to the Sub-Commission. In this report Ksentini mentions the link between air pollution and health: “Pollution of the *air*, water and

Box 3.2 Human Rights and the Environment: coming and going

The explicit link between Human Rights and Environment within the Human Rights Doctrine started, but also ended in the 1990's. Due to her work in May 1994 a Draft Declaration of Principles on Human Rights and the Environment was produced. Among other things Ksentini recommended the Commission of Human Rights to incorporate Environment into the various Human Rights Bodies and to appoint a thematic Special Rapporteur on Human Rights and the Environment. She also recommended that the Draft Declaration would be used to build further towards a set of legal norms securing a right to an adequate environment. The Commission however did not follow these recommendations but instead appointed Ksentini as Special Rapporteur on Human Rights and illicit traffic and dumping of toxic and dangerous products. (Mollo et al., 2005)

land from various sources, in particular through industrial disasters, presents great risks to the health, life and well-being of populations.” (Ksentini, 1994, paragraph 123)

- *Treaty: Declaration on the Right of the Child*

Health
|
Environment Different Treaties worked out specific rights for particular groups. One of these is the 1989 Declaration on the Right of the Child. Article 24 of that Declaration specifies the right to health of the ICESCR for the child. Here we see also the link between health and environment. One of the measures States Parties have to take is “[t]o combat disease and malnutrition (...) through, inter alia, (...) taking into consideration the dangers and risks of *environmental pollution*.” (United Nations, 1989, article 24, sub 2c)

- *General Comment No 14: The Right to the highest attainable standard of health*

Health
|
Air Among the Special Rapporteurs we found the first reference to ‘air’ in the Human Rights Doctrine. In 2000 the Committee on Economic, Social and Cultural Rights (CESCR) issued General Comment No.14, concerning the right to health. In this document we find some more references to pollution of ‘air’ (among other kinds of pollution) in relation to States Parties’ Obligations. We find it even in the categorization respect, protect, fulfil (see section 2.2.1). Paragraph 34: “In particular, States are under the obligation to *respect* the right to health by, *inter alia*, refraining from (...) unlawfully polluting air, water and soil, (...)” (CESCR, 2000, emphasis not added, underline added).

Paragraph 36: “The obligation to *fulfil* requires States parties, *inter alia*, (...) to adopt measures against environmental and occupational health hazards and against any other threat as demonstrated by epidemiological data. For this purpose they should formulate and implement national policies aimed at reducing and eliminating pollution of air, water and soil, (...)” (CESCR, 2000, emphasis not added, underline added)

Paragraph 51: “Violations of the obligation to *protect* follow from (...) the failure to enact or enforce laws to prevent the pollution of water, air and soil by extractive and manufacturing industries.” (CESCR, 2000, emphasis added, underline added)

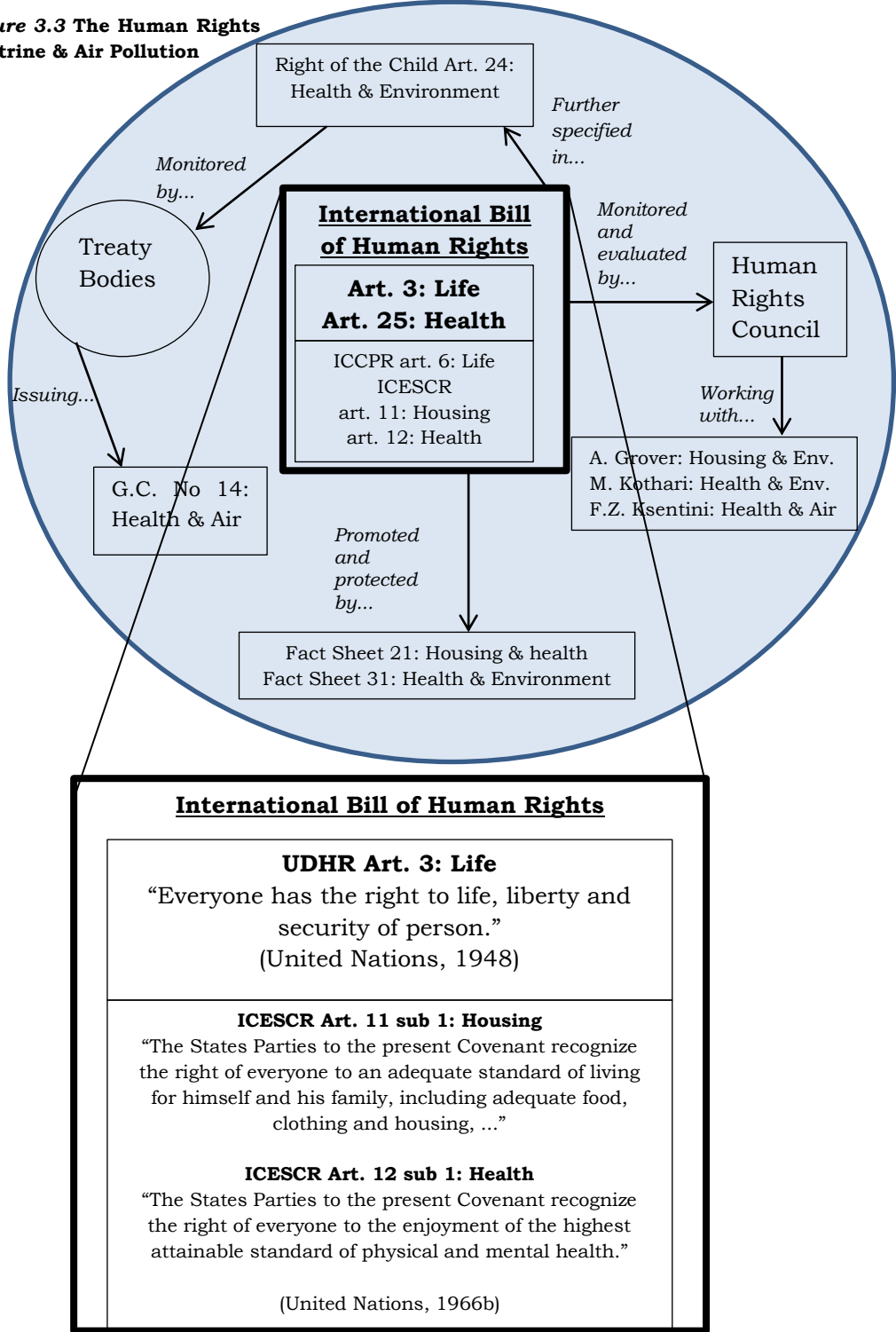
3.3.3 *Concluding the Human Rights Doctrine and air pollution*

In the previous sections we have seen the development of the linkage between the Human Rights Doctrine and air pollution. To visualise this, the findings have been put in the same figure as figure 3.1 for the Human Rights Doctrine (see figure 3.3). In a distinct square the three rights are shown to which air quality most clearly is connected.

We clearly see how in the Human Rights Doctrine original rights and terms are clarified and its conception broadened. While ‘environment’ is barely present in the International Bill of Rights, later on a strong linkage is established between health and environment, even

explicitly mentioning ‘air’ at some places. Indeed the Human Rights Doctrine – and its linkage with air pollution alike – is not a based on a single document. Neither was it finished at a particular moment in time. At the same time it is a single ‘body’, as each new part refers to and builds further on already existing ones, instead of starting a new line.

Figure 3.3 The Human Rights Doctrine & Air Pollution



We now know the main linkages between the Human Rights Doctrine and air quality. Let us combine this with paragraph 3.2 – kind of duties implied by the Doctrine – to find out what duties States Parties have vis-à-vis air quality.

3.4 Duties concerning Air Quality according to the Human Rights Doctrine

In paragraph 3.2 we saw the kind of duties, as well as some exceptions, implied by the Human Rights Doctrine. In this paragraph we will use the scheme of figure 3.2 to find out the duties of States Parties related to air quality. Step by step we will work ourselves through the scheme. Thus in our first section we will see what the duty to respect, protect and fulfil the three particular rights (life, housing, health) means for air pollution. In section two we will discuss what the exceptions imply for air quality obligations. In the third section we will explicate the four ‘in any circumstance’-duties for air quality. After an intermediate analysis in the fourth section, the fifth section will deal with the relevance of international cooperation for air quality in the way it is mentioned in the Human Rights Doctrine.

3.4.1 Respect, protect, fulfil

- *Right to Life*

The duty to respect, protect and fulfil (see figure 3.4) the right to life implies quite an obligation for States Parties. First of all States should not take life – they have the duty not to kill their citizens. Secondly States should prevent others to take life from the States’ citizens. And thirdly a

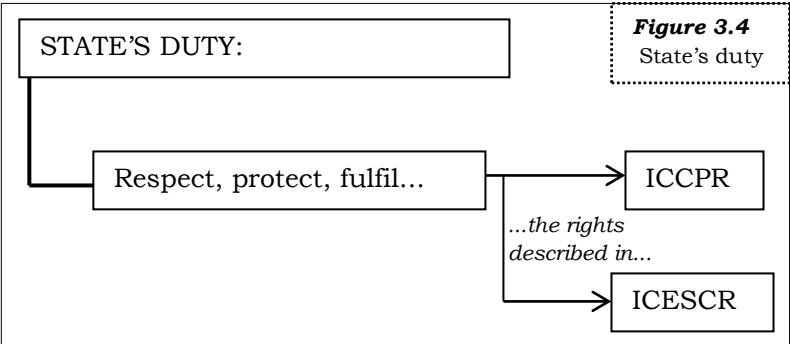


Figure 3.4
State's duty

State should provide measures to secure the lives of its citizens: it has to provide the circumstances in which the ‘staying alive’ of its citizens is most secured. Following the argument that air pollution causes death, States Parties should not pollute the air their citizens live in to a lethal degree. They also should prevent third parties from doing so, and should provide the circumstances that prevent and eliminate life threatening air pollution.

This right does not imply that the atmosphere has to be totally non-polluted, as a small degree of air pollution is not directly life-threatening. In some way we can say that this right becomes more relevant the more the atmosphere is polluted. Recapping section 2.2.2 then, this right is especially relevant for indoor air pollution in developing countries, as “[f]or millions of people living in rural areas in developing countries, indoor pollution from the use of biomass fuels occurs at concentrations that are orders of magnitude higher than currently seen in the developed world.” (Brunekreef & Holgate, 2002, p. 1234)

- *Right to Adequate Housing*

With safe environment as an element of adequate housing, the duties of the States Parties vis-à-vis air pollution are pretty much the same as described for the right of life. States should not pollute, prevent pollution by third parties and provide the circumstances securing non-pollution. The element ‘safe environment’ points us to the surrounding of a house. Thus this right implies the responsibility for the State to provide clean air in the surrounding of places where people have their housing. The *local* character of local air pollution is particularly relevant here, as these kinds of air pollution are more directly linked to the places where people live. We saw in section 2.3.2 that photochemical smog (ozone as pollutant) is most efficiently formed at places where people live. The right to adequate housing stresses the importance to deal with this kind of air pollution.

Yet besides outdoor pollution, a second and more direct relation between housing and air pollution is indoor pollution: pollution *inside a house*. Here the duty to respect and to protect seem less relevant: neither the State nor a third party is polluting inside that house. One could say that in the case of indoor air pollution citizens themselves pollute their own

house. Of course the responsibility of a State does not go so far that it can be held accountable on basis of the right to adequate housing when a citizen destroys its own house: indoor air pollution could be seen as parallel to such a case. However, the fact that indoor air pollution is such a widespread issue shows that the citizens themselves either do not see the danger of indoor air pollution, or do not have the resources to have a non-polluting lifestyle. In both cases there is a role for the State: either education on problem of indoor use of biomass fuels, or providing technical and/or financial support to change the lifestyle. While the duty to respect and protect do not provide a motive for these roles of the State, the duty to fulfil does. In other words: adequate housing is housing without indoor air pollution. The duty to *fulfil* this right places an obligation on States to provide the circumstances securing non-(indoor)pollution: such as education or support.

- *Right to Health*

In the previous paragraph we saw that General Comment No 14 already has explicated the Right to Health towards the duty to respect, protect and fulfil. The link between health and environment is extensively mentioned in the Human Rights Doctrine. As for air, according to the General Comment States have the duty to respect the right to health by “refrain[ing] from unlawfully polluting air,” (CESCR, 2000, paragraph 34). States do not protect the right when they fail to “enact or enforce laws to prevent the pollution of (...) air (...) by extractive and manufacturing industries.” (CESCR, 2000, paragraph 51) The duty to fulfil obligates States to “formulate and implement national policies aimed at reducing and eliminating pollution of air, (...)” (CESCR, 2000, paragraph 36).

Between the Right to Health and the two other rights discussed, two interesting linkages exist that result from the specification of the rights towards air pollution. Firstly, for the case of air pollution, it is obvious that health and life are closely connected. Air pollution affects *health*, and might do this in such a harmful way that it leads to loss of *life*. As such, in every case that the right to life might be relevant, the right to health is as well. This gives us at least two insights. One: the Right to Health presents a broader basis to deal with air pollution than the Right to Life; there are more cases in which air pollution affects health, than in which it leads to death. Two: the Right to Life helps us to apply a gradation of ‘worseness’ in air pollution; life-threatening air pollution has absolute priority over ‘merely’ health-affecting pollution, as it violates both the Right to Life and the Right to Health.

Secondly, a clear link between the Right to Health and the Right to Adequate Housing exist when we compare paragraph 37 of General Comment (GC) No 14 with the above discussion on indoor air pollution, adequate housing and the duty to fulfil. GC No 14, paragraph 37, states: “The obligation to *fulfil (facilitate)* requires States *inter alia* to take positive measures that enable and assist individuals and communities to enjoy the right to health. States parties are also obliged to *fulfil (provide)* a specific right contained in the Covenant when individuals or a group are unable, for reasons beyond their control, to realize that right themselves by the means at their disposal.” (CESCR, 2000) That is precisely the argument we made for indoor air pollution. The General Comment speaks in relation to this about the obligation of the State to provide information on healthy lifestyles and support people to make informed choices, *inter alia*. Thus, while the Human Rights Doctrine explicates the duties vis-à-vis air pollution most clearly around the Right to Health, it guides the direction of these duties through the Right to Adequate Housing. In other words: the Right to Health most clearly presents motives for a policy on air pollution, and the Right to Adequate Housing helps to focus this policy on certain areas, namely those where people live. As said earlier, the *local* character of local air pollution is also relevant here, as these kinds of air pollution also are confined to places where people live.

- *Summarizing respect, protect, fulfil and air pollution*

The duty to respect, protect and fulfil the three rights basically is the same thing if we specify it towards air pollution. With the three rights each motivating a right to clean air, to respect this right of course does not depend on the right it originates from: it always implies 'not to pollute'. The same goes for the duty to protect and fulfil. However, for each of the three rights (life, adequate housing, health) we found a relevant insight. The Right of Life might be particularly relevant for air pollution in developing countries, as this right becomes more relevant when air pollution is worse. The Right to Adequate Housing draws attention to air pollution at places where people live, making *local* air pollution a relevant topic. The Right to Health most explicitly and extendedly gives motives to deal with air pollution, as air pollution most directly affects health.

The linkages between the Right to Health and the two other rights show the relevance of all the three rights. The link between health and life helps to prioritize air pollution problems. The link between health and adequate housing shows motives to follow a policy of substance and a relevant areal focus.

- *Explicating respect, protect and fulfil with respect to air pollution*

Above we found for each right, as well as in their linkages, relevant insights. However, before we move on, it is good to explicate the meaning to respect, protect and fulfil these rights with air pollution as the perspective. Can we make it more explicit what States should or should not do? Let us base ourselves on what we already saw in General Comment 14. Though this General Comment is specified towards the Right to Health, we can extrapolate this to respecting, protecting and fulfilling a non-polluted air in general.

To respect is to "refrain from unlawfully polluting air," (CESCR, 2000). We saw in chapter 2 as important sources industry and traffic. In this light the duty to respect is relevant regarding an air-polluting facility owned by a State, or emissions of public transport.

With air pollution as perspective, we can easily see how the duty to protect is a worthy addition towards the duty to respect. To protect is to "enact or enforce laws to prevent the pollution of (...) air (...) by extractive and manufacturing industries." (CESCR, 2000, paragraph 51) In the case of traffic this can be brought even further than industries. States can also 'enact or enforce' laws concerning the use of vehicles. Or, to bring it back to industries, the kind of vehicles made – how polluting they are.

To fulfil is to "formulate and implement national policies aimed at reducing and eliminating pollution of air, (...)" (CESCR, 2000, paragraph 36). This duty, as well as the duty to protect, is a worthy addition in the light of air pollution. Indoor air pollution for example is not directly attributable to either States or 'third parties'. However, as we saw in chapter 1, indoor air pollution is a serious problem. The duty to fulfil requests States to deal with such serious air pollution problems just because it are serious problems – even if they are not caused by the States or third parties.

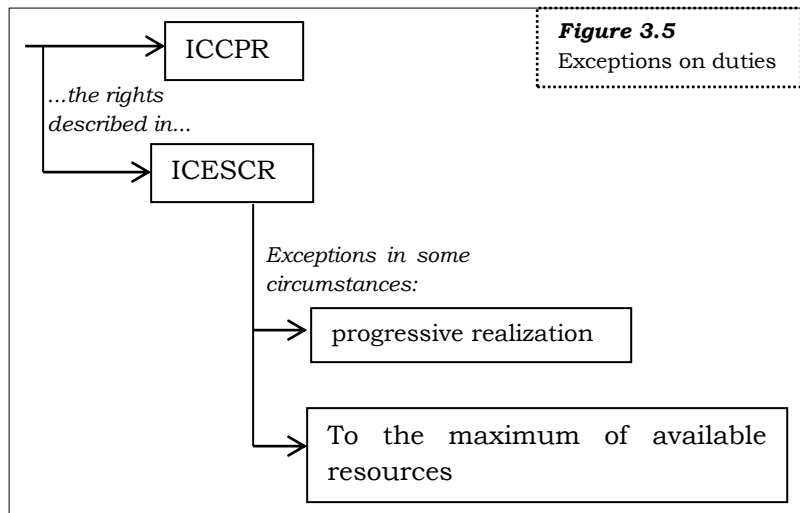
So far the general duties regarding air pollution according to the Right to Life, Health and Adequate Housing. Unfortunately we cannot stop here: some exceptions on the obligations are mentioned. We have to find out what these exceptions imply for the air quality duties.

3.4.2 Exceptions on the duties concerning air quality

- *Right to Life*

We saw in paragraph 3.2.2 that for the ICESCR some general exceptions were given, which is not the case for the UDHR and the ICCPR (see figure 3.5). As the Right to Life is specified in both the UDHR and the ICCPR, the obligation this right places on States Parties is strong. However, in the previous paragraph I also mentioned that according to Verschuuren the link between Right to Life and environment is too weak to base an environmental policy on (see

3.3.1). And I have to agree with Jonathan Verschuuren for the following reason: nowhere in the Human Rights Doctrine the Right to Life is coupled to either air quality or environment. In the previous paragraphs we saw how the Human Rights Doctrine has evolved. In this process rights are worked out and clarified. While throughout these years environment and air have become in the range of the Right to Health and Adequate Housing, related to the Right to Life this has not happened.



Maybe this is a good thing. If the Right to Life was connected to environment, this would provide a strong case for environmental protection. Yet it would weaken the authority of the Right to Life. It would place environmental pollution on the same level as murder of citizens. This could present a reason to 'work on' murder in the same way as environmental pollution: we are trying to counter it, but cannot yet fully abandon it. Let us now move on to the rights that contrarily to the Right to Life are inflicted by exceptions.

- *Right to Adequate Housing and Right to Health*

Article 2, sub 1 of the ICESCR says: "Each State Party to the present Covenant undertakes to take steps, individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures." (United Nations, 1966b) Both the Right to Adequate Housing and the Right to Health are specified in the same Covenant. In paragraph 3.2.2 we discerned two exceptions based on this article: 'progressive realization' and 'to the maximum of its available resources'.

General Comment No 3 mentions the distinction between obligation of conduct and obligation of result (CESCR, 1990). While some obligations clarify what States should do (conduct), other obligations present a result that has to be achieved. Both adequate housing and health are rather a result, than an action. In a teaching module on Economic, Social and Cultural Rights Activism of the University of Minnesota, the implication of this is clarified. "The obligation of result means the obligation to attain a particular outcome through active implementation of policies and programs. The simple fact that result X was not achieved cannot necessarily be blamed on the state in question, and therefore cannot always be called a violation of human rights." (International Human Rights Internship Program, 2000, section 4) Henceforth *progressive realization*, rather than immediate realization, is requested by States Parties. Specified for air quality this means that not every case of local air pollution is a violation of Human Rights. It can be that the State in question, though not yet having fully realized the Right to Adequate Housing and Health by having eliminated all unhealthy air pollution, is progressively working towards that result.

An understandable reason for the non-realization of a right is the lack of capability to do so. According to the Covenant a State Party has to undertake *to the maximum of its available*

resources. It is easy to see that this is relevant for air pollution issues. Dealing with air pollution needs scientific knowledge and technology, both often costly. We saw above that in dealing with indoor air pollution, education might also be part of the remedy. This is also not something costless. It may well be that a State does not have all the resources needed for these solutions.

The distinction between the duties to respect, protect and fulfil is relevant for this issue. These different duties imply different remedies, and thus need different resources. The duty to respect can involve closing a State-owned polluting facility. The duty to protect requests *inter alia* resources to enforce laws and to monitor the implementation of those laws. The duty to fulfil requires resources to conduct a policy to reduce and eliminate air pollution. This shows that the *maximum of available resources* in the case of air quality is a diverse exception: the availability of resources can differ greatly per duty. A State Party might not have the available resources to *fulfil* the rights, but this does not mean that it has to stop respecting and protecting the rights as well.

- *Summarizing exceptions on duties concerning air pollution*

The obligations implicated by the Right to Life are not restricted by exceptions. However, we saw that the link between the Right to Life and air quality is rather weak, and that this might even be a good thing.

The two other rights do bear exceptions with them. The phrase *progressive realization* gives space to situations of air pollution not to be a failure of a State to fulfil its duties. According to the Human Rights Doctrine a lack of *available resources* is a valid reason not to have reached a state of non-pollution yet. However, as the duties concerning air quality present diverse measures, the relevant resources are also diverse. It might very well be that it differs per measure whether or not the maximum of available resources is reached.

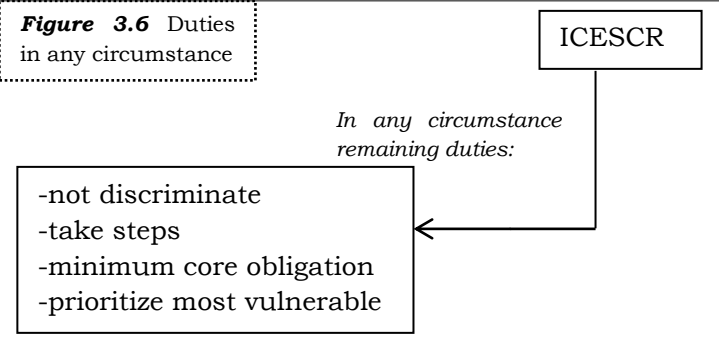
We saw a distinction between obligation of *result* and obligation of *conduct*. Analogues to this Kierkels distinguishes between ‘progressive’ and ‘immediate’ duties (Kierkels, 2010), the latter being comparable to obligations of conduct as these are duties that a State must *immediately* do. In this thesis we speak about ‘in any circumstance remaining duties’. The teaching module of the University of Minesota states: “What we would really like to see are obligations of the following type: ‘the state has to carry out this action,’ or ‘The state has to abstain from that action.’ These obligations are called ‘obligations of conduct.’” (International Human Rights Internship Program, 2000, section 4) Let us therefore turn to these duties.

3.4.3 *Duties in any circumstance concerning air pollution*

In paragraph 3.2 we distinguished four in any circumstance remaining duties (see figure 3.6). We specify these to the case of air quality one by one.

- *The duty of non-discrimination*

The duty of non-discrimination is among other places described in article 2 sub 2 of the ICESCR: “The States Parties to the present Covenant undertake to guarantee that the rights enunciated in the present Covenant will be exercised without discrimination of any kind as to race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.” (United Nations, 1966b) A State should grant a right to each of its citizens to the same extend.



The first and most obvious implication is that in no circumstance solutions for air pollution may be granted to some groups and not to others with a motivation based on the race, colour, ..., of those groups.

However, the duty of *non-discrimination* holds at least a second, less apparent implication for the case of air pollution. Non-discrimination in relation to air quality does not mean the same effort for every citizen; rather it urges States to make a well-thought difference in effort. Along this line General Comment No 20 on non-discrimination distinguishes *formal* discrimination from *substantive* discrimination. While eliminating formal discrimination points to e.g. the State's constitution, eliminating substantive discrimination "... requires paying sufficient attention to groups of individuals which suffer historical or persistent prejudice instead of merely comparing the formal treatment of individuals in similar situations." (CESCR, 2009, paragraph 8b) In other words: some groups might need more attention than others. Citizens struck most by air pollution, should receive most help, as to bring the quality of their atmosphere to the same level as those struck less by air pollution. The duty of non-discrimination requests a State to divide its *available resources* in such a way that those who need most, receive most.

- *The duty to take steps*

Above we saw that the phrase 'progressive realization' justifies some situations of air pollution. However, the word 'progressive' also points towards progression: States Parties should at least move in the good direction. They have in any circumstance the duty to *take steps*. General Comment No. 3 makes the relation between progressive realization and taking steps very clear: "[W]hile the full realization of the relevant rights may be achieved progressively, steps towards that goal must be taken (...). Such steps should be deliberate, concrete and targeted as clearly as possible towards meeting the obligations recognized in the Covenant." (CESCR, 1990, paragraph 2) Thus, while there are exceptions on reaching the desired result, there is no reason for States not to pay attention to air quality problems. They should at least try to deal with it, and maybe then discover that they do not have the available resources or need more time. The duty to take steps urges States to look to what they can do with the given resources, rather than using the fact that they cannot deal with *all* air pollution as a reason not to deal with air pollution at all. Ignoring the issue is prohibited by this duty.

Above we discussed that the *available resources* are diverse in relation to air quality problems. This means that States have many possibilities to *take steps* with respect to air pollution.

- *The duty to prioritize minimum core obligations*

The above described duty to take steps urges States to do *something*, but does not specify *what* they have to do. The duty to *prioritize minimum core obligations* specifies the States' effort by telling them what to do at least. According to the Committee on Economic, Social and Cultural Rights (CESCR) there can be no excuse not to ensure the provision of minimum essential levels of each of the rights. They write in General Comment No. 3: "Thus, for example, a State party in which any significant number of individuals is deprived of essential foodstuffs, of essential primary health care, of basic shelter and housing, or of the most basic forms of education is, prima facie, failing to discharge its obligations under the Covenant." (CESCR, 1990, paragraph 10) Under the exception *progressive realization* we concluded that not every state of air pollution is a violation of Human Rights. Minimum core obligations however bring up situations that are a violation of Human Rights, no matter the circumstances. The question remains whether this is also the case for air pollution situations. In other words: is there a *minimum core obligation* with respect to air pollution?

Let us combine the phrase ‘minimum essential level’ with an earlier insight related to the linkage between the Right to Life and the Right to Health (see 3.4.1). We saw that this connection provided a prioritization of air pollution problems. Although the Right to Life itself does not provide a good basis to motivate environmental policy, it still shows us where priorities according to the Human Rights Doctrine lie. The Right to Health provides a right to live a healthy life, left alone a right not to have such a lack of health that death follows. Surely a minimum essential level of the provision of the Right to Health is to ensure that air pollution does not inflict health in a fatal way. Thus, a *minimum core obligation* with respect to air quality would be to prevent air pollution issues so grave that people most surely die from it.

This remains a vague duty. It is difficult to say which level of air pollution is ‘too worse’. This duty however implicates an obligation of another kind. The duty to prioritize minimum core obligations requires States themselves to think about levels of air pollution. They should be able to make a valid point on whether they have provided minimum essential levels of air quality. Henceforth this duty requests States to have some sort of air quality guideline: some statement on when an air pollution situation is so emergent that something has to be done.

It is a valid stance to argue that the *maximum of available resources* can still cause a ‘problem’ here. Hypothetically, it might just be the case that even for the fulfilment of minimum core obligations resources are not sufficient. The Committee gives a clear comment on this. “In order for a State party to be able to attribute its failure to meet at least its minimum core obligations to a lack of available resources it must demonstrate that every effort has been made to use all resources that are at its disposition in an effort to satisfy, as a matter of priority, those minimum obligations.” (CESCR, 1990, paragraph 10)

Thus, we find a duty to prioritize, in order to discover and fulfil minimum core obligations. The linkage between the Right to Life and Health helps us to prioritize. More generally this duty requests States to use some air quality guideline, in order to be able to prioritize. We can see it as two steps: firstly making it possible (by creating or taking over air quality guidelines – see also box 3.3) to define minimum core obligations, and secondly fulfilling those minimum core obligations. In cases the *maximum of available resources* play a part in these steps, States at least have to show every effort has been made.

Box 3.3 Air Quality Guidelines

It is not necessary for States to develop guidelines themselves. The World Health Organization, the US Environmental Protection Agency and the European Union each have developed air quality guidelines for ozone, nitrogen dioxide and particulate matter. (Brunekreef & Holgate, 2002) One could see it as a negative, confusing thing that *different* guidelines are developed. However, the positive implication is that at least no State can have an excuse not to have guidelines *at all*: guidelines are at hand.

- The duty to prioritize the most vulnerable

While the former duty speaks about a prioritization with respect to the air pollution situations, the duty to *prioritize the most vulnerable* is a prioritization with respect to the citizens. In General Comment No 3 “...the Committee underlines the fact that even in times of severe resources constraints (...) the vulnerable members of society can and indeed must be protected by the adoption of relatively low-cost targeted programmes.” (CESCR, 1990, paragraph 11) With respect to air pollution ‘members of society’ can be vulnerable in two ways. First, they can be vulnerable because of their lack of resources to cope with their situation. It can be a matter of resources to either or not live in a polluted area. Also it can

be a matter of resources to either or not have indoor air pollution caused for example by indoor biomass burning. Thus a lack of resources can make one more vulnerable. Second, some groups of citizens are vulnerable for air pollution due to their 'characteristics'. According to Brunekreef and Holgate, "[s]tudies have shown wide interindividual variability in responses to air pollutants." (Brunekreef & Holgate, 2002, p. 1236) For example children or elderly people have a weaker resistance, as well as people that already suffer from certain diseases, e.g. allergies.

- *Summarizing duties in any circumstance concerning air pollution*

Discussing the four 'in any circumstance'-duties, we have found the following:

The *duty of non-discrimination* urges States, besides an obvious request of non-discrimination, to divide available resources in such a way that those who need most, receive most.

The *duty to take steps* obligates States to think pro-actively: what can they do with the given resources? This is particularly for air pollution quite an extensive obligation, as air pollution issues as well as possible solutions are diverse, implying that there are several options to spend given resources on.

The *duty to prioritize minimum core obligations* points us to a difficult issue: how to state which level of air pollution is 'too worse'? The linkage between the Right to Life and the Right to Health provides some direction: to react on air pollution levels that cause fatal health infliction is a reasonable minimum core obligation. This duty however points us to a more basic need: air quality guidelines. In order for States to argue that they fulfil their minimum core obligation, they have got to follow some air quality guideline. In this respect, also monitoring air quality levels is an obligation implied by this duty. In the case that States lack resources even to prioritize and fulfil minimum core obligations, they have to show that every effort has been made.

The *duty to prioritize the most vulnerable* obligates States to pay attention first and foremost to their citizens that are particularly vulnerable for air pollution. We can distinguish two kinds of vulnerability: due to lack of resources, and due to characteristics that increase response to air pollutants.

3.4.4 *Intermediate analysis: exceptions and 'in any circumstance'-duties*

In section 3.4.2 we looked to the exceptions on the duties. Let us for a moment look to connections that section and the latter one: 'in any circumstance'-duties (3.4.3). This is interesting, as it shows the restricted use of the exceptions.

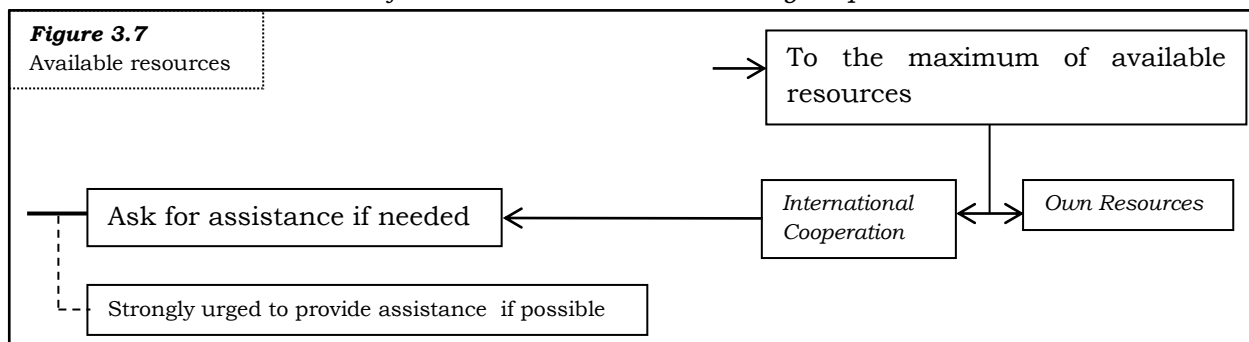
Firstly the phrase *progressive realization* implied an exception in the sense that not every situation of air pollution is a violation of human rights. The *duty to take steps* directly clarifies the use of this exception: it should not be used as an excuse not to counter air pollution, but rather in the positive sense, i.e. what steps can be taken? General Comment No. 3 puts it like this: "It (...) imposes an obligation to move as expeditiously and effectively as possible towards that goal." (CESCR, 1990, paragraph 9) Furthermore there are situations of air pollution that by no means can be justified by the phrase *progressive realization*. In any circumstance States should fulfil *minimum core obligations* and help the *most vulnerable*. To put it interestingly: these two duties present exceptions on the exception.

Secondly States should fulfil their duties to the *maximum of available resources*. A lack of resources thus is also a reason for an exception on the duties. However, a lack of resources places an even greater responsibility on States: without all the resources at hand they have to make a well-thought division of resources in order that those who need most, receive most, as the *duty of non-discrimination* implies. Because air pollution by nature is a diverse issue, an excuse based on the resource-exception is also difficult to make, because there are

several options to *take steps*. And especially with a lack of resources to fulfil *minimum core obligations*, States have to show that every effort has been made.

With the exception of *maximum of available resources* fresh in mind, we can now move on to the next and last part of the scheme, discussing precisely this topic.

3.4.5 The maximum of available resources concerning air pollution



The availability of resources obviously is a relevant issue, as most measures to fulfil duties demand resources. In General Comment No. 3 the Committee clarifies that the phrase ‘available resources’ was intended “to refer to both the resources existing within a State and those available from the international community through international cooperation and assistance.” (CESCR, 1990, paragraph 13) There are therefore three parts to be discussed: the maximum of own resources, requesting international assistance and providing international assistance (see figure 3.7).

- The maximum of own resources

Thinking on the *maximum of own resources*, this notion points us to at least two issues: the need to know what resources a State needs, and the role of legislation.

Firstly, a State must know what resources it needs, before it can claim a lack of resources. The burden of proof of inadequate resources should be with the State (International Human Rights Internship Program, 2000). Therefore the duty remains for a State to find out the air quality problems and to come up with solutions. As the Committee states in General Comment No. 3 that “the obligations to monitor the extent of the realization, or more especially of the non-realization, of economic, social and cultural rights, and to devise strategies and programmes for their promotion, are not in any way eliminated as a result of resource constraints” (CESCR, 1990, paragraph 11). Related to air quality this points to the same as what we discussed under the duty to *prioritize minimum core obligations*: the need of air quality guidelines and monitoring.

Secondly, legislation is explicitly mentioned as relevant in the fulfilment of rights. States Parties are requested to achieve the realization of rights “by all appropriate means, including particularly the adoption of legislative measures.” (United Nations, 1966b, article 2 sub 1) We can also see the legislative power of a State as part of available resources. As such legislation is at least one step States can take. Besides legislation as an available resource itself, legislation can also be relevant with respect to the amount of available resources. The teaching module of the University of Minnesota writes:

“[t]he availability of resources refers to the resources of society and not only the resources within the current budget. It is true for most states that the executive is bound to the budget cleared by the legislature. It is equally true that the legislature, as much as the executive, is part of the state (separation of powers) and therefore must observe human rights obligations and the maximum of resources provision. If a legislature denies a government the budget necessary to meet the state’s obligation, although these resources are available in society, this has to be considered a violation of human rights by the legislature.”
(International Human Rights Internship Program, 2000, section 5)

Thus, the *maximum of available resources* is not bound by legislation, but rather a State should provide the legislation that supports the use of society's resources to the maximum to realize human rights.

- *International cooperation: ask for assistance if needed*

When a State claims to be non-bound by some obligations due to inadequate resources, another duty comes up: to *ask for international assistance*. Thus, by being a Party to the Covenant, a State takes upon itself the obligation to either realize the human rights by itself, or to invest in good international relations in order to make international assistance more likely.

- *International cooperation: provide assistance if possible*

Asking assistance implies that there is also a State that can provide such assistance. And this is where we leave the field of duties: the Human Rights Doctrine does not and cannot obligate States to help others. We already saw it under section 3.2.3: 'it cannot obligate a State to conduct international assistance if this is needed for the citizens of another State – it can only strongly urge to do so.'

We can only make a moral appeal. In this moral appeal the (generalized) difference between the developed and developing countries could have a place. With respect to air quality this is a two-fold difference. First of all we could mention the well-known difference in resource availability and technological expertise. Secondly we could recapitulate what we saw in our first chapter: the difference in air quality problems. Apparently the more pressing local air pollution problems take place in developing countries in the form of indoor air pollution, in the big cities combined with traffic air pollution. This could be combined with the *raison d'être* of the Human Rights Doctrine as we have seen it so far: e.g. prioritizing the most vulnerable and prioritizing air pollution that causes fatal health infliction. We could then add the fact that the Human Rights Doctrine itself explicitly mentions the need of international assistance. The CESCR writes in General Comment No. 3 that "[it] wishes to emphasize that in accordance with Articles 55 and 56 of the Charter of the United Nations, with well-established principles of international law, and with the provisions of the Covenant itself, international cooperation for development and thus for the realization of economic, social and cultural rights is an obligation of all States. It is particularly incumbent upon those States which are in a position to assist others in this regard." (CESCR, 1990, paragraph 14) We could end this moral appeal with the question how genuinely interested a State is in the fulfilment of Human Rights, if it does not seek ways to support other States with the fulfilment of their obligation.

- *Summarizing the maximum of available resources concerning air pollution*

The *maximum of available resources* requests States to monitor air quality and to make use of air quality guidelines, as the burden of proof for inadequate resources is with the State. Legislation can play a role both as part of available resources and in benefitting the use of the maximum of available resources. In case of inadequate resources States should ask for international assistance. In particular for air quality problems this is a relevant issue, which can form the basis of a moral appeal to lend assistance. States however cannot be obligated to help another State – at least such an obligation cannot be based on the Human Rights Doctrine.

3.5 Which duties are specified by the Human Rights Doctrine concerning air quality?

Let us now answer the main question of this chapter, based on what we came across in the previous paragraphs.

The main duties concerning air pollution is to respect, protect and fulfil the Right to Life, Health and Housing. These duties imply stopping State's pollution, enforcing and enacting laws to prevent or reduce the pollution of air, and forming policies to reduce and eliminate air pollution. This ranges from actions concerning State-owned facilities to education and support. While the duties to respect and protect only motivate solutions framed as to constrain someone to pollute another's air, the duty to fulfil provides a rationale for any solution to air pollution; any course of action that will reduce and eliminate air pollution.

These general duties are given most content by the Right to Health: air pollution should be eliminated because it affects health. The Right to Adequate Housing draws the focus on air pollution at places where people live. The Right to Life, though not a good basis for an air pollution policy, at least grants a baseline: air pollution causing death is absolutely no option – in such a situation problems have grown way too big and the State in question has fully missed the *raison d'être* of the Human Rights Doctrine.

The duties to respect, protect and fulfil the Right to Life, Health and Adequate Housing motivates States to counter air pollution that affects the health and dwelling of people. However, the notion of *progressive realization* implies that there are situations of air pollution with those consequences, that are no violation of Human Rights. A concrete example of such a situation is when the *maximum of available resources* is reached.

In their dealing with air pollution, States have always the duty of *non-discrimination*. In no circumstance solutions to air pollution may be granted to some groups and not to others. Not to discriminate the right on a non-polluted air also implies to pay more attention to those who need it more.

Furthermore States have the duty to *take steps*, implying that States are obligated to pay attention to air pollution issues. The desired result might be out of reach, e.g. due to lack of resources, but this is never an excuse not to pay attention to air pollution issues and find out what can be done.

Two concrete obligations of States are to prioritize *minimum core obligations* and the *most vulnerable*. The former requests States to prevent air pollution that is 'too bad'. The Right to Life helps to say which air pollution issues are 'too bad', but more generally this bids States to use some kind of air quality guideline. The latter demands that States at least help the most vulnerable members of society. With respect to air pollution the most vulnerable are both those that live in the worst circumstances and those that show most sensitivity to the effects of air pollution.

In fulfilling the duties with respect to air quality, most likely resources are needed. Resources are not always sufficient, as is conceived by the notion of *maximum of available resources*. However, the burden of proof that they have not sufficient resources, is theirs, and thus they have to know what air quality problems there are in their country, and what solutions are needed. Therefore in a situation of insufficient resources a State is even more requested to make use of air quality guidelines and monitoring. Furthermore legislation is also part of available resources, and should support rather than restrict the use of all the resources to the benefit of Human Rights.

International cooperation is in those cases also very important. Unfortunately States cannot be obligated to provide assistance. The Human Rights Doctrine however strongly appeals States to do so.

4 Special Rapporteurs

How do Special Rapporteurs refer to these duties in their country visits?

4.1 Relevant parts of country visit reports

Previously Special Rapporteurs were introduced as part of the Human Rights doctrine. Country visits of Special Rapporteurs henceforth are an obvious place of interaction between the Human Rights Doctrine and its addressees, namely States. Reports of these country visits present an insight in the (non-)realization of the duties vis-à-vis air pollution. In other words: is the *theoretical* linkage between the Human Rights Doctrine and environmental issues such as air pollution in its full extend also used *in practice* by people representing the Human Rights Doctrine?

Special Rapporteurs present reports of their country visits to the Committee. Within these reports I have searched for the words 'environment', 'atmosphere', 'air' or 'pollution', and also read the summaries, in order to find out how the Special Rapporteurs make use of the conclusions of the previous chapter. In the following sections an overview will be given of those country reports in which relevant references to either environmental or 'aerial' issues are found. We saw in the previous chapter that the Right to Health and the Right to Adequate Housing present most linkages with these issues. It is therefore that only the country visits of the Special Rapporteurs of these two rights have been taken into account⁸.

4.1.1 Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health

The list of reports consists of 17 documents, covering 15 visits of countries, 1 visit to a pharmaceutical company (GlaxoSmithKline) and 2 visits to international bodies (World Trade Organization, World Bank and International Monetary Fund). Only four documents contained relevant references (according to my searching method). As for reference matters, each report consists of a summary and several small (numbered) paragraphs.

- *Mission to Peru, June 2004 (Hunt, 2005a)*

In the summary the Special Rapporteur (SR) already mentions that environmental health issues are dealt with as well. Paragraph 15 mentions air pollution amongst other problems in Peru. Under paragraph 54 the Special Rapporteur stresses that environmental problems deserve attention.

- *Mission to Romania, August 2004 (Hunt, 2005b)*

Under paragraphs 69 through 73 specific attention is given to environmental health. There is especially a focus on access to water.

- *Missions to the World Bank and the International Monetary Fund in Washington, D.C. (20 October 2006) and Uganda (4-7 February 2007) (Hunt, 2008)*

Paragraph 111 mentions that the 'approval culture' in the World Bank reflects an emphasis on the approval of large projects with large amounts to the neglect of negative environmental

⁸ In the previous chapter, section 2.3.2, I spoke about a Special Rapporteur on Human Rights and the Environment. Unfortunately I have not been able to find any country visit report of this Special Rapporteur.

and social impacts of these projects. The SR writes in paragraph 112 that this is due to lack of human rights training of employees of the World Bank and the International Monetary Fund.

- *Preliminary note on the mission to Ecuador and Colombia, May and September 2007 (Hunt, 2007)*

This mission is to review negative consequences of aerial spraying at the borders of Ecuador and Colombia. Paragraph 10 mentions that it is not a scientific mission: personal testimonies and existing evidence present the data rather than direct research and measurements. The SR refers under paragraph 17 to the precautionary principle (taking action on basis of the possibility of harm, without full scientific evidence), believing that this principle is relevant for these problems. He notes in paragraph 19 that at some places the problem is politicized, and that this is not good for Human Rights. “When an issue becomes politicized in this way, human rights are always among the first victims. The health and lives of ordinary people, especially the most disadvantaged and poor, are often forgotten or obscured.”

- *Intermediate discussion*

A first observation is that there are very few references to either the environment or air in particular: 13 of the 17 documents lack such references. In the remaining four, the environment is not omnipresent either. Two of these do not even mention it in the summary, implying that it is not an important part of the report.

The reports on the missions to Peru and Romania contain specific attention to ‘environmental health’. Interestingly enough these are the two first country visit reports. It seems as if during that time environmental issues still were in the picture of the SR, but that later on it ‘left the picture’.

In the preliminary note on the mission to Ecuador and Colombia the Special Rapporteur mentions that it was not a scientific mission. This points us to another relevant issue: most likely the SR itself is not able to measure environmental circumstances.

4.1.2 Special Rapporteur on adequate housing as a component of the right to an adequate standard of living, and the right to non-discrimination in this context

The list of country visit reports contains 23 documents, covering 18 country visits. Two documents are a ‘follow-up’, in each document respectively three or four countries are discussed. In these documents the Special Rapporteur reviews what countries have done so far with the recommendations given in earlier country visit reports. According to my searching method, 10 out of the 23 documents contained relevant references – nine of the eighteen country visits and one follow-up document.

- *Visit to the occupied Palestinian territories, January 2002 (Kothari, 2002)*

In the paragraphs 74 through 78 the Special Rapporteur discusses an environmental issue: waste management. He writes: “The ‘right to a safe place to live in peace and dignity’ cannot be realized without also realizing the right to a safe and clean environment. In the occupied Palestinian territories, however, Israelis dump solid waste without restriction on Palestinian land, fields and side roads.”

- *Mission to Mexico, March 2002 (Kothari, 2003)*

The Special Rapporteur recommends in paragraph 31 to “further integrate the human rights dimensions of housing”, including the sector of environment.

- *Mission to Peru, March 2003 (Kothari, 2004b)*

Similarly to the SR on Health in his mission to Peru, the SR on Adequate Housing already in the summary mentions “pollution of natural resources, particularly water and air”. In paragraph 12 the SR takes note of the commitment of the government to provide an ‘adequate environment’. However, paragraph 44 mentions with respect to the community La Oroya in the Central Andes that there is “an urgent need for government at all levels to respond to the grave problem of poverty and environmental conditions.” In this community they suffer from pollution caused by the metallurgical complex owned by a multinational company. Box 5 on page 20 presents another example of environmental problems due to economic activities, on which the complaints of citizens are not heard. In paragraph 501 the Special Rapporteur recommends the government to react quickly on “housing and land crisis brought about by unbridled involvement of private corporations”.

- *Mission to Afghanistan, September 2003 (Kothari, 2004a)*

In paragraphs 44 through 48 the Special Rapporteur expresses environmental concerns, especially with a focus on lack of water. In paragraph 48 he recommends to involve environmental strategies in policies vis-à-vis adequate housing. The SR reaffirms this in paragraph 97n: “The Special Rapporteur recommends that the main ministries taking active responsibility for the improvement of access to adequate housing also adopt an environmental strategy in order to ensure that the right to adequate housing entails the right to live in a safe environment.”

- *Mission to Australia, July-August 2006 (Kothari, 2007)*

In his report the Special Rapporteur deals in some paragraphs (62 through 66) with “[s]tructural and policy shortcomings and the need for a human rights approach.” In paragraph 66 the SR suggests that Australia should incorporate a human rights approach in its housing policies, among which he mentions ‘safe environment’ together with the other elements of adequate housing.

- *Mission to Spain, November-December 2006 (Kothari, 2008a)*

In paragraph 32 the Special Rapporteur takes note of the fact that Spain has adopted legislation related to adequate housing. This Land Law, entered into force in 2007, among other things addresses “...the right to enjoy decent and adequate housing in an *adequate environment*” (emphasis added).

- *Mission to Canada, October 2007 (Kothari, 2009)*

The Special Rapporteur mentions in paragraph 76 that there is air pollution (among other problems) due to economic activities in territories of the Aboriginals. In paragraph 95 he deals with the issue of clean water for the Aboriginals and in paragraph 105 he promotes a housing strategy based on a human rights approach in collaboration with Aboriginal governments and communities.

- *Mission to Maldives, February 2009 (Rolnik, 2010a)*

The Special Rapporteur deals with the sensitivity of the Maldives to environmental changes. In this respect he mentions in paragraph 16 the importance of environmental assessment.

Besides climatic sensitivity in paragraph 57 waste management is mentioned as another environmental issue in the Maldives.

- *Mission to the United States of America, October/November 2010 (Rolnik, 2010b)*

Paragraph 43 describes that a resident of Alten Gardens, outside Chicago, mentions air pollution as a problem.

- *Follow-up to country recommendations: Afghanistan, Mexico, Peru and Romania (Rolnik, 2009)*

In this report the Special Rapporteur comes back on the recommendations made to Afghanistan, Mexico, Peru and Romania. Unfortunately the part of Mexico and Peru is in Spanish. As for Romania, there were no recommendations to be reviewed in relation to aerial or other environmental issues. As for Afghanistan, in paragraph 12 and 13 the SR regrets that the government has not commented on the recommendation to involve environmental strategies in policies vis-à-vis adequate housing. The SR mentions in paragraph 15 that Afghanistan has adopted a National Development Strategy, but that it “generally frames human rights in civil and political rights terms and largely neglects economic, social and cultural rights.”

- *Intermediate discussion*

The Special Rapporteur on Adequate Housing clearly gives more attention to environmental issues. Three times air pollution itself is mentioned, two times linked to economic activities. Waste management, clean water and environmental sensitivity are three other ‘specific’ environmental issues mentioned by the SR. Four times the SR deals with the importance to integrate human rights and the different elements of adequate housing in policies.

While environmental issues are clearly mentioned more by the SR on Adequate Housing than the SR on Health, we can still question how much *relevant* attention these issues get. More than once environment is mentioned ‘just’ as one of the elements of adequate housing – it appears to be mentioned only to be complete (in having mentioned all the relevant elements), rather than because environmental issues itself are important to pay attention to. Also, environmental issues are recognized as problems, but do not always appear among the recommendations. For example, while in the country visit report of the Mission to the United States of America air pollution is clearly mentioned as a problem, no recommendation is made on this issue by the Special Rapporteur⁹. The follow-up report shows the importance of recommendations besides noting problems, as in this report only the result of the recommendations are reviewed.

4.2 Discussing the country visit reports with respect to duties related to air quality

4.2.1 Observations

An interesting observation is that, while in chapter 3 the connection between air pollution and the Human Rights Doctrine was most prominently established through the Right to Health, in the country visits we find that with the Right to Adequate Housing much more attention is paid to the environment.

During the review of these country visits, we also observe that when discussed, air pollution issues are mostly dealt with from the perspective of *protection* of Human Rights. States should resolve air pollution due to economic activities; they should prevent third parties

⁹ The USA however first should start with ratifying the ECSCR – the Special Rapporteur ends its country visit report with this recommendation, see paragraph 108.

such as industries to pollute one's air. The duty to fulfil is not dealt with in relation to air pollution.

Taken together, we do not see much of the terminology of chapter 3 in connection with air pollution or other environmental issues. This is not to say that these Special Rapporteurs do not use the terminology of duties at all. The terms 'respect', 'protect', 'fulfil', '(maximum of) available resources', 'most vulnerable', etcetera, are present in the discussed country visits. Scarcely, however, this is in relation to environmental issues and air pollution in particular.

4.2.2 Discussion

Both references to environmental issues, as well as the terminology of chapter 3, are in the country visits. They are, however, not so much connected. This is not necessarily a problem. We could argue that chapter 3 presents an extensive argumentation to counter environmental problems based on Human Rights. The conclusion of this argumentation is that from a Human Rights perspective air pollution should be paid attention to. And we find out that the Special Rapporteurs do so; not necessarily using the terminology of chapter 3, but rather working from the conclusion of chapter 3 that they should pay attention to the environment.

We can however ask the question: do they pay enough attention to environmental issues – with enough meaning 'as much as the Human Rights Doctrine stimulates to'? Or, in other words, does the terminology of duties with respect to air pollution and the environment present a wider approach of the problems, than the Special Rapporteurs do? A 'yes' as answer to this second question implies a 'no' to the first question. And in my opinion, this is the case.

We see that environmental issues are discussed by the Special Rapporteurs. Missing, however, is a review of a *minimum core obligation* – whether the visited States have defined such an obligation on basis of air quality guidelines and whether they are fulfilling it. Also missing is the explicit use of *maximum available resources*, as in requesting States to provide the proof that every effort has been made, and insisting that in such a case they should search *international assistance*. It is not explicitly reviewed whether States are *taking steps* with respect to air pollution problems. The duty to *fulfil* is not dealt with regarding air pollution, meaning that an issue like indoor air pollution will not receive attention.

When the terminology of chapter 3 would be used to its full extent by Special Rapporteurs, the examination of air pollution problems, as well as other environmental issues, would be more far-reaching. The extensiveness of the duties vis-à-vis local air pollution according to the Human Rights Doctrine is not dealt with as such by the Special Rapporteurs.

5 Conclusion and Discussion

5.1 Conclusion

In chapter two we learned about Nitrogen Dioxide, Ozone and Aerosols: three pollutants that play an important role in local air pollution problems. The sources of these pollutants are not merely anthropogenic. However, human actions certainly have a big share in the formation of these pollutants. In developed countries traffic is an important source of local air pollutants, combined with the character of big cities as efficient places for the build-up of pollution. In developing countries especially indoor air pollution is affecting the lives of many people. The different faces of local air pollution imply that different measures are needed. This, however, is no reason not to deal with local air pollution. On the contrary: because both local air pollution affects many lives, as well as that local air pollution for a substantial amount is caused by human actions, it is relevant to deal with local air pollution.

In chapter three we continued from this point, to review with which duties this relevance can be harnessed, based on the Human Rights Doctrine. The Human Rights Doctrine is an extensive body, evolving throughout time. On the original UDHR-document nowadays many treaties, documents and mandates are based – all together clarifying, explicating and enlarging the reach of the Human Rights Doctrine. The Right to Health and Adequate Housing imply a right on non-polluted air – or at least the right not to live in an atmosphere that is polluted so much that health is inflicted or housing is not adequate. States have the duty to respect, protect and fulfil this right: not pollute one's air, prevent third parties from doing so, and provide the circumstances to live in a clean air. States should do so progressively, implying that there can be situations of air pollution which are not a violation of Human Rights, as States are still in progression. It is also recognized that States not always have sufficient resources: they should live up to their duties to the maximum of available resources.

In all circumstances however States should not discriminate. States should take steps forward, prioritize a minimum core obligation, and target the most vulnerable. This implies that States have no excuse not to pay attention to local air pollution. Both due to the nature of local air pollution (being diverse) as the extent of the duties to respect, protect and fulfil (implying a lot), there are numerous possibilities to take steps. In a situation of insufficient resources States should at least find out what the problems are, and think about the solutions needed. The burden of proof that the maximum of available resources is being used is theirs; before they can claim not to have enough resources, they have to pay attention to the problems. Also they have to make an educated decision on what the bottom line of air quality is, in order to distinguish a minimum core obligation. Hence some kind of Air Quality Guidelines are needed. Besides that, they should find out where the problems are worst, in order to be able to prioritize the most vulnerable citizens. Monitoring air quality is therefore obligated. Furthermore, States should ask for assistance if their own resources are not sufficient. States with sufficient resources are strongly appealed to lend assistance.

In chapter four we have looked to the country visit reports of the Special Rapporteur on Health and the Special Rapporteur on Adequate Housing. While the link between local air quality and the Human Rights Doctrine is more firmly established through the Right on Health, interestingly enough the Special Rapporteur on Health does refer much less to air quality or other environmental issues than the other Special Rapporteur. When discussed, air pollution issues are mostly dealt with from the perspective of *protection* of Human Rights

– leaving the *fulfilment* of those rights untouched, and thus also fulfil-related issues such as indoor air pollution. Overall the references of the Special Rapporteurs to air quality (or other environmental) issues are not as extensive as the body of duties vis-à-vis local air quality we found in chapter three.

We started this thesis with the question:

Which duties can be deducted from the Human Rights Doctrine concerning local air pollution?

We can conclude that duties that can be deducted from the documents are to respect, protect and fulfil the right of citizens not to live in an atmosphere polluted such that it affects the health and dwelling of the citizens. There are exceptions on the reach of these duties. Yet, as written above, these duties remain extensive (we come back on the extensiveness of duties under 5.2.1). However, we can also conclude that from the living representations of the Human Rights Doctrine (Special Rapporteurs) these specified duties cannot yet be deducted so much.

The Human Rights Doctrine itself is an evolving body, not yet and maybe never ‘finished’. Likewise the richness of deduction of duties concerning local air pollution is evolving. It is already in the documents; nonetheless it is not yet finished.

5.2 Discussion

5.2.1 Indivisibility of rights and duties, and the discovery of the robustness of the Human Rights Doctrine

It might feel as if interpreting Human Rights as also holding a link with for example local air pollution (as we did in this thesis) is artificial and not convincing. This brings me to an interesting observation: while there are exceptions on the *realization* of the rights, there are no exceptions on the *applicability* of the rights.

We have seen that the Human Rights Doctrine has evolved through time. New documents add to the interpretation of the original Human Rights. These interpretations have resulted in a wider reach of the Human Rights Doctrine. For example, while in 1948 it was not directly linked to a right to clean water, this right has now been accepted widely. The widening of this reach is possible, because the Human Rights Doctrine does not provide exceptions on the interpretation, as in ‘this right may not be interpreted as holding a right to [for example] a clean environment’. This is what I mean when I say that there is no exception on the *applicability* of the rights. As long as interpretations of a right follow a correct argumentation and do not contradict the Human Rights Doctrine, there is no reason not to accept them as rights.

Concerning this the term *indivisibility of rights* is relevant: equal importance of all rights. Following this term with respect to this thesis, we can say that there is no reason to see ozone causing tissue damage as a less worse infliction of Human Rights than the unavailability of education. It might be tempting to think so – as the latter is directly mentioned in the UDHR (article 26) while the former has an argumentation in between. Yet there is no reason – and the term *indivisibility of rights* restricts us – to think in that way. I will come back on this, right after the following argument with regard to *taking steps*.

Some argue that the range of duties to respect, protect and fulfil present a line along which a government can take steps. It sounds logic that States should start to look at their own actions (*respect*), and then to others (*protect*), and then to any other circumstance (*fulfil*) in relation to the right at stake. This hence would present a nice structure via which States can *take steps*: from respecting a right onward to fulfilling a right.

This thought is appealing, but in the case of local air pollution does not make sense. We saw in section 3.4.1 that dealing with indoor air pollution mostly is motivated from the duty to *fulfil*. It is then absolutely not good that States are stimulated to first respect, later on protect, and if possible also fulfil Human Rights.

Analogues to the *indivisibility of rights* it is wise to speak in this respect about *indivisibility of duties*: all duties are of equal importance. The Human Rights Doctrine does not give any reason to see some duties as less important than others. When not all duties can be met to a full extent (e.g. due to lack of resources), States should prioritize according to the prioritization-tools the Human Rights Doctrine gives (*core obligation* and *most vulnerable*), rather than based on the kind of duty. Then States will *take steps* with respect to the most pressing air pollution issues, rather than the kind of duty.

Indivisibility of rights is the term that points to the argument that living up to the duties concerning local air quality is of equal importance as living up to the duties concerning other Human Rights that might be described more explicitly in the Human Rights Doctrine. *Indivisibility of duties* expresses my argument that all different duties concerning local air quality, as distinguished in this thesis, are of equal importance. Let us add to these two terms the fact that local air quality is a diverse issue (as we saw in chapter two). All together this presents an immense set of tasks for States. With this in mind we can start to see why exceptions like *progressive realization* and *maximum of available resources*, are not weakening, but rather strengthening the authority of the Human Rights Doctrine.

Let us imagine for a moment that such exceptions were not present. Then this vast amount of tasks with respect to local air pollution should all be realized immediately. This is absolutely not possible – it would change the rights held within the Human Rights Doctrine into idealistic, but never reachable goals. The Human Rights Doctrine would be a beautiful story of a perfect world, but certainly not an foundation to build legislation on it.

Rather than reducing the vast amount of tasks, the Human Rights Doctrine recognizes the fact that not everything can be realized immediately through certain exceptions. But besides that, as we saw in chapter three it also adds ‘in any circumstance’-duties. For example the duty to *take steps*. The explication of the duties concerning local air quality should not be used to request governments to realize these duties immediately. Rather the exploration conducted in this thesis presents a solid basis on which governments can continuously be triggered to take steps – there is always something more to do. In this way the Human Rights Doctrine unites the realistic with the idealistic.

5.2.2 Recommendations

In box 3.2 I spoke about the work of Fatma Zohra Ksentini as Special Rapporteur on Human Rights and the Environment. She has made recommendations with respect to Human Rights and the Environment. On basis of this thesis, I wish to recommend that her recommendations will be followed. I work out one of these recommendations: the recommendation that a thematic Special Rapporteur on Human Rights and the Environment will be appointed.

Chapter four shows that the Right to Health is interpreted so widely that its Special Rapporteur has a huge mandate. It is completely logic that the Special Rapporteur on Health cannot pay much attention to all of the topics that are included in the Right to Health, including environmental issues such as local air pollution. A mandate for a Special Rapporteur on the Environment would both help the Special Rapporteur on Health to focus more, as well as result in more explicit attention for the connection between human rights and environment.

We saw in chapter four that both Special Rapporteurs do use the terminology of chapter three, but not so much in relation to the environment. When Special Rapporteurs on Health and Adequate Housing use the terminology, a Special Rapporteur on the Environment will most likely do that as well, but then will connect it to the environment. A Special Rapporteur on the Environment will hence be able to pay due attention to the extensiveness of duties as discovered in this thesis, linking the terminology to the environment.

There is also (at least) one concrete benefit of a distinct Special Rapporteur on the Environment. In the preliminary note on the mission to Ecuador and Colombia, discussed in section 4.1.1, the Special Rapporteur mentions that it was not a scientific mission. For environmental issues, however, this often might be relevant. For issues such as local air pollution the actual measurement of the state of air pollution is a very important component. A Special Rapporteur on Health cannot be specialized in every scientific background – both medical as environmental. For a mandate as concrete as the environment someone could be picked with a scientific background in environmental issues.

There is however one argument supporting the extensive mandate of the Special Rapporteur on Health. Above we dealt with the *indivisibility of rights*. In this respect one Special Rapporteur appears better than two: that one will take into account the different sorts of rights under his mandate, while two Special Rapporteurs might focus each on their subject, without taking notice of other rights.

Yet, despite this one argument against a distinct Special Rapporteur, I wish to recommend a Special Rapporteur on Human Rights and the Environment will be mandated. This would certainly help to further establish duties concerning environmental topics, such as local air pollution.

5.2.3 Further research

This thesis has not discussed everything relevant for this thesis' topic. Certainly not; the topic could greatly benefit from further research. Let me now name a few directions.

- *Local air pollution in developing countries*

To start off with the most pressing direction of research: in chapter two we saw that research on air pollution issues is concentrated on developed countries, while developing countries are coping with greater local air pollution problems (as in 'more lives affected by'). There is a desperate need for more research in developing countries. We have seen in chapter three that working on air pollution issues starts with monitoring and getting to know what the problems are. For this research is needed.

In chapter three international assistance came across. Research is a typical field in which developed countries can easily and greatly help developed countries.

- *Translating duties into measures*

In this thesis the kind of duties established by the Human Rights Doctrine have been discussed. I have already started with explicating these duties towards local air pollution. This could however be done in much more detail. According to the duties found in this thesis, precisely what measures can or should be taken vis-à-vis local air pollution? In other words: further research could contribute to a translation of the duties into measures.

- *Communication of the Human Rights Doctrine*

In this thesis I have also discussed one way of communication for the Human Rights Doctrine: Special Rapporteurs (as part of the Human Rights Doctrine) communicate this

Doctrine into the real world. In chapter four we discovered that Special Rapporteurs do not use the full width of duties as exposed in chapter three. Most likely, however, Special Rapporteurs are not the only way of communication. There are certainly other ways via which States learn about and are influenced by the Human Rights Doctrine, not necessarily authorized by the Human Rights Doctrine (like Special Rapporteurs). To name one: Non-Governmental Organizations play an important role in letting States adopt and fulfil Human Rights. Further research could contribute to an understanding of the ways how duties established in the Human Rights Doctrine find their way into reality. Possibly these other ways fill the gap the Special Rapporteurs leave.

- *International assistance: more body, less heart?*

While reading the country visit reports of the Special Rapporteurs, I came across something interesting. I searched for terms from the terminology of chapter three. One of these terms is 'international assistance': countries helping each other to live up to their duties. We saw in chapter three that the Human Rights Doctrine tries to give weight to this matter. In the country visit reports however I come across another kind of international assistance: assistance by United Nations bodies. Let me give some citations from the report of the visit to Afghanistan, when looking for the word 'assistance':

"In Herat water has been chlorinated with the assistance of UNICEF..." (Kothari, 2004a, paragraph 45)

"In 2001/02, UNHCR, with its implementing partners, both international and national, and under the aegis of the United Nations Assistance Mission in Afghanistan (UNAMA) in its overall coordinating role, initiated a project to provide aid and assistance to this population." (Kothari, 2004a, paragraph 51)

"In order to facilitate return, UNHCR has focused increasingly on shelter assistance projects with the objective to support the neediest returnees to rebuild their homes at their place of origin or return." (Kothari, 2004a, paragraph 78)

It is interesting to see that assistance is used in another context than 'international assistance' such as discussed in chapter three. In this and other reports I could not directly find a use of the term 'assistance' in the same sense as chapter three¹⁰. Could it be that the proliferation of UN bodies in some way has negative consequences on the attention for 'helping each other' in a direct sense? It can be argued that in a State like the Netherlands, where the government provides much facilities for its citizens, the citizens themselves will not anymore look around to see whether they can help their neighbours. Could it be that the same is happening in the international community? Further research could work on this intriguing hypothesis: the proliferation of UN bodies has negative consequences for the 'international assistance' promoted by the Human Rights Doctrine¹¹. Put it nicely: more

¹⁰ I did however not fervently look for it either – further research could do that. Also there is at least one country visit report in which 'international assistance' in the sense of chapter three is dealt with: in the report of the Mission to the World Bank and the International Monetary Fund, as well as to Uganda, the international assistance provided by Sweden to Uganda is discussed (Hunt, 2008).

¹¹ Analogues to this issue, though more theoretical, the role of documents such as General Comments (GC's) can be discussed. It could be that, as the Human Rights Doctrine itself provides interpretations of the International Bill of Rights – via documents such as GC's -, individual States will not start with interpreting the Human Rights Doctrine in a wider sense than already explicitly described. We can say that the information put in General Comments could also already have been concluded by States themselves, as General Comments not add new rights, but just provide an explanation and interpretation of rights. States could do that themselves as well. Possibly they won't, just because General Comments already do that. We can come up with the same question in relation to this thesis: how wise is it to describe and explicate the linkage between Human Rights and local air pollution? This might help with giving States the idea that they do not have to explicate issues themselves. They might start with using a Human Rights approach to soil pollution not before this issue is explicitly described by some document.

body (UN bodies, international organizations) might result in less heart (intention of international assistance).

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