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The polluter pays principle: dilemmas of justice in national and international contexts

HANS CHRISTIAN BUGGE

1 Introduction

The Polluter Pays Principle (PPP) is one of the internationally recognized principles that influence the shaping of environmental policy at both the national and international level. As one of the environmental principles that have developed 'from political slogans to legal rules,'[1] it is also increasingly reflected in national and international law.[2]

It is seen and analyzed both as a principle of environmental economics and as a principle of environmental law. In environmental economics, it is discussed as an efficiency principle of internalization of environmental costs. As a legal principle, it is usually treated as a principle for the allocation of the cost of pollution prevention, and for liability and compensation for environmental damage.[3]

In general, it is regarded as an important and 'right' principle in the perspective of environmental protection. It is often mentioned together with other major environmental principles such as the precautionary principle, the principle of prevention and the principle of integration.

The PPP is expressed in numerous international recommendations and treaties.[4] For example, it was included in the EC Treaty in 1987 in Article 130R of the Single European Act (now Article 174 of the EC Treaty), which states that the policy of the Community 'should be based on the principle . . . that the polluter should pay'.[5] It is also expressed in the 1992 Declaration of the UN Conference on Environment and Development ('Rio Declaration') as Principle 16.[6] The meaning of the principle in international instruments is not always clear, and it differs. The same goes for national law. On the one hand, the *explicit* term 'Polluter Pays Principle' has several meanings. On the other hand, many rules *implicitly* lay down substantive parts of the principle

[1] Sadeleer 2000 at 23–32. [2] Macrory 2004.
[3] For a more thorough discussion, see Bugge 1996 at 53–90.
[4] For a nearly complete list, see Bugge 1996 at 56; and Sadeeler 2000 at 23–32.
[5] However, the principle was introduced into EC environmental policy in 1973, in the first Environmental Action Programme. It is also included in several environmental EC directives.
[6] Report of the UNCED, Doc. A/CONF.151/26/Rev.1 (Vol. 1), Annex II (1992).

by – in various ways – allocating responsibility and costs to the one that causes pollution. A closer analysis reveals that the principle has several dimensions or 'functions'[7] to which we shall revert.

Although generally acclaimed, the PPP is not uncontroversial. It is in fact subject to doubts and criticism in economic theory as well as in politics. One indication of this is the rather reserved wording of Principle 16 in the Rio Declaration:

> National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

As will be shown in the following, the ambivalence that is reflected in this formulation may at least partly be explained by considerations of justice[8] and fairness.[9]

The various dimensions or functions of the principle become apparent when considering the core content of the rule: That the '*polluter*' shall 'pay' excludes others from the duty to pay. A normal interpretation points to the following negations of the principle:

- The *victim* of pollution shall not pay. Here, PPP appears as a principle for allocation of costs of pollution prevention and for liability for pollution damage.
- The *taxpayer* shall not pay. In this relation, PPP is a principle that excludes that the costs of pollution prevention or clean-up of existing pollution is covered by public budgets.
- *Society at large* shall not pay. This means that the social costs of pollution have to be covered, in some way or another, by the polluter; they have to be internalized into the polluter's production costs. In legal terms, this may also be defined as a fundamental duty to avoid pollution, and even expressed as 'no right to pollute'. It follows from this that the polluter normally is not entitled to any compensation from the state because its polluting activity is restricted or prohibited.
- *Nature itself* shall not pay. As with social costs, damage to nature has to be compensated or repaired – whether or not there are measurable economic consequences of the pollution for people or society.
- *Future generations* shall not pay. Costs of preventive, compensatory and restoring measures must be covered by the present polluter – and the present generation – and not be left to our descendants.

[7] See Bugge 1996; and Pagh 1998 at 253–8.

[8] Recognizing fully the complexities of the concept of 'justice' from both a legal and philosophical point of view, I deliberately use it in a broad and general meaning in most of this chapter. In some parts of the analysis, a distinction between corrective justice and distributive justice is necessary.

[9] The first critical, in-depth analysis of the principle, and of its possible social consequences, was made by Rehbinder 1972.

A closer look at the principle reveals that it is even more complex. Many difficult questions appear: *Who* is the 'polluter' in the many situations where the causes of pollution are several, or in 'chains' of production or uses of a polluting product? *When* must the polluter pay and on what basis and criteria? Are there exceptions and situations where the polluter is not obliged to pay? *What* is to be paid or paid for – and *to whom*? And what is meant by '*principle*'? What is its legal meaning and 'strength' relative to other and possible contradictory legal principles and considerations?

Whether in its explicit or implicit form, it usually only regulates the question of allocation of what may be called 'the primary costs': the obligation to pay for preventive or compensatory measures *in the first instance*. The principle does not deal with the possibility for the polluter to have the costs covered by increased price on the products, or – in case of an accident – by insurance. As a principle of economic efficiency, it presumes that the cost of pollution prevention may lead to increases in the price of products. However, whether this will be the case depends on price elasticity and other market conditions. If the increased price is still competitive, *the consumer* – and not the polluter in the strict sense – is the one who ultimately 'pays'. Therefore, the principle may be seen as a *presumption* or a principle for allocation of primary responsibility and thus the economic *risk*: the polluter has to pay to the extent that the cost burden cannot be transferred to and ultimately carried by the consumer or other clients, an insurance company or another actor.

When all these various aspects are taken into account, the principle becomes indeed very complex. It may be understood in many different ways, and it has to be amplified and nuanced. It may even be more adequate to describe the principle in plural, as 'polluter pays *principles*', although with connections and overlaps, and a common core.[10]

The purpose of this chapter is to take a look at this principle – or these principles – from the perspective of environmental justice. The question to be discussed is: 'Is it a just principle?' or rather: 'How does the principle work from the perspective of fairness and justice?' Clearly, the PPP raises issues of justice of both a distributive and corrective nature, and in several relations: the distribution of environmental quality between social groups; the allocation of benefits and costs between the one that causes the pollution and the pollution victims, between several actors that cause pollution, between the polluter and society at large, between the human society and nature, and between the present generation and future generations.

While a full analysis of the issue would be far too complex here, I shall take an 'environmental justice look' at three main 'versions' of the PPP:

- PPP in the 'narrow' (or 'standard') sense as a principle for allocating the cost of preventing and reducing pollution to an acceptable level;

[10] Bugge 1996.

- PPP in the 'wide' (or 'extended') sense as a principle for full internalization of environmental costs; and
- PPP as a principle of liability and compensation for environmental damage.

2 The polluter pays principle in the 'narrow' sense: the costs of measures to prevent pollution should be borne by the polluter

This is the 'original' version of the PPP, as it was defined and recommended by the OECD in 1972 as a guideline for national environmental policy. It resulted from discussions among economists on how to allocate pollution prevention costs in order to achieve an efficient environmental policy. In addition, an important political objective was to avoid national differences that could create unequal competition conditions for industry between OECD member states. The first recommendation aimed in particular at limiting state aid to clean-up measures in polluting industry, and emphasized the PPP as a 'no-subsidy principle'.[11] It is 'narrow' because – although it contributes to the internalization of the environmental externalities of polluting activities – it does not aim at a full internalization of social and environmental costs of the (remaining) pollution.

The PPP in this sense is intuitively viewed as a 'just' principle: Since pollution above a certain level is harmful to people and the environment, it is 'natural' that the cost of reducing pollution to an acceptable level is covered by the one that causes the harm. However, the question is not quite as simple as this. While it is true that pollution may be harmful, it is not generally prohibited. Most often, pollution is a negative side-effect of an otherwise useful and desirable activity. Some people depend on that activity for their living. Others need the products or services it provides. Depending on technical and economic conditions, the prevention of pollution may entail considerable costs, and may even lead to the closing of the activity, to the detriment of those who are benefiting from it. Who loses, and who gains from this development? And are these consequences just?

Two commonplace examples illustrate the dilemma:

Case A: The emission from a factory is a serious nuisance to people in the neighbourhood. Smoke and stench reduce the value of the properties in the area. When the factory is ordered to reduce its pollution, it may have to close down for economic reasons and the workers lose their jobs and income. The neighbours, on the other

[11] Recommendation on Guiding Principles Concerning International Economic Aspects of Environmental Policies, C(72)128, OECD, 1972. Its para. 4 reads: 'The principle to be used for allocating costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment is the so-called 'Polluter-Pays Principle.' This principle means that the polluter should bear the expenses of carrying out the above mentioned measures decided by public authorities to ensure that the environment is in an acceptable state. In other words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption. Such measures should not be accompanied by subsidies that would create significant distortions in international trade and investment.'

hand, see an increase in value of their properties. Is it fair? Or would it in such a case be more just if the *victim* of the pollution pays for the measures from which they get a clear benefit? There are clearly arguments of fairness in favour of a 'beneficiary pays principle'.[12]

The polluter–victim relationship appears more clearly in the context of the classical issue of compensation for neighbour nuisance, to which we shall revert.

Case B: A factory is the main economic basis of a small community. Most of the families depend on the factory for their livelihood. The factory emits substances that are not harmful to the community itself, but contributes – together with many other sources – to regional or even global pollution problems. In order to reach national emissions reduction targets, the factory must reduce the emissions. If the PPP is applied fully, the costs are prohibitive, and the factory has to close down with serious social consequences in the community. Is it fair that the local community shall bear such a burden?

In order to avoid these consequences, the authorities must either exempt the factory from the restriction and accept the pollution, or cover parts of the costs through financial support in some form or another.

So, there may be arguments of justice *against* the PPP in the narrow sense, due to its distributive consequences. And, in fact, exceptions to the PPP are found to be politically necessary in order to avoid serious pollution problems without unreasonable economic and social effects. From the very beginning, the OECD accepted state aid to clean-up measures as exceptions to the PPP, and adopted guidelines that draw the limits for state aid to pollution control measures. These were followed up by similar guidelines within the EC, which – with later modifications – are still in force.[13]

A weakness – from an environmental point of view – of this version of the PPP as defined by the OECD, is that it does not in itself imply a strict pollution control policy. The polluter shall bear the expenses of 'measures decided by public authorities to ensure that the environment is in an acceptable state'. It is left to each state to define the 'acceptable' environmental quality and thus the strictness of environmental measures. Therefore, its effect as a principle of international harmonization of environmental policy is limited. Unless it is supplemented by international rules and standards that apply internationally, it may in fact contribute to a 'race to the bottom'. In the perspective of global environmental justice, the principle itself does not protect poor people in developing countries from being exposed to more pollution than people in developed countries with a stricter environmental policy.

Another weakness, or limitation, is that it limits the burden of the polluter to the abatement measures. The burden of the remaining pollution must be borne by the society – or nature itself. Generally speaking, this is neither economically efficient nor just. This is exactly what the PPP in the wide sense is intended to correct.

[12] There may of course be nuances to this, from a distributive justice point of view, depending on social conditions, etc. One discussion of a 'victim pays' approach is found in Meissner 1985 at 197–207.

[13] Community Guidelines on State Aid for Environmental Protection (2008/C82/01) of 1 April 2008.

3 The polluter pays principle in the 'wide' sense: a principle of internalization of social costs of pollution

The starting point here is the general efficiency objective of welfare economics,[14] and the economic view of pollution as (rational) use of the environment as a resource for harvesting, recreation and renovation. To economists, the challenge is to find the efficient or 'optimal' level of environmental quality – or the optimal pollution level – that is, the level which gives the maximum difference between the total social value of the environment as a resource and the total social costs of protecting it.[15]

In order to reach the efficient level of pollution, the full social costs of pollution as an external effect must be internalized into the polluter's cost. The 'basic' version of the PPP in the 'wide' sense as an economic efficiency principle is simply this: the polluter shall bear all social costs – including the environmental costs – of the pollution it causes.[16]

Although it is rational in an economic sense, this version of the PPP raises numerous technical difficulties, as well as serious problems of justice and fairness. In general, the efficient level of resource use is reached through the market mechanism. The problem here is that important environmental values and resources are what economists call 'free goods'. As they have no price in the market, they have to be estimated. To estimate the full social costs of pollution is a huge challenge. There is a rich economic theory on the issue,[17] and considerable practical experience.

This is where problems of distributive justice come in. Some of the methods used will inevitably result in higher environmental value of areas where property prices are high, than of areas where property prices are low. It will obviously be more costly to destroy or damage more valuable properties than less valuable properties. Although, depending on the level of environmental quality, thresholds of environmental and health effects in the areas etc., the social costs of (more) pollution will most often be relatively higher in clean areas than in areas that are already deteriorated by pollution. Hence, to put it somewhat bluntly, it is generally more costly to damage the environment of wealthy people than that of poor people. In this way, economic efficiency may easily contribute to maintaining and even increasing, environmental injustice in the sense of different environmental quality. This effect can be analyzed – and be observed – within a city, within a country and, not least, globally. Needless

[14] I use 'efficiency' in the meaning of static, 'Kaldor-Hicks efficiency'.

[15] Or the level of pollution that gives the maximum difference between total benefits of pollution abatement measures and the total costs of these measures.

[16] Also *partial* internalization may be regarded as being in accordance with the principle, since it contributes towards a higher degree of efficiency than if no internalization took place. This distinction is underlined in OECD 1992, which focuses on the PPP: 'Partial internalization is an internalization limited to certain categories of costs. Full internalization is an internalization of all categories of costs. In practice full internalization is rarely achieved because, at best, the polluter bears the cost of full compensation of the damage instead of full social cost of damage.'

[17] See e.g. Freeman 2003; and Garrod and Willis 1999. For earlier introductory literature on the topic see, among others, Pearce, Markandya and Barbier 1989; Pearce and Turner 1990; Tietenberg 1994; and Pearce 1995.

to say, the PPP is not the cause of unequal social conditions. Neither is this problem exclusively linked to the application of the PPP. It is first and foremost a general problem with cost–benefit analyses of projects that may have negative environmental effects: The same environmental effects in physical terms may have very different economic costs in areas with different property value. Hence poor areas are preferred as sites for polluting activities. This is a key factor behind problems of environmental (in)justice. Nevertheless, one side-effect of the PPP in the wide sense is that poverty becomes a competitive advantage.

Here, we are clearly faced with a dilemma. It is basically right from the point of view of protecting the environment to put a value on the environment and thus a cost on the destruction of the environment, and to let the polluter cover this cost. At the same time, however, it may contribute to undesirable social consequences. In order to avoid these problems of distributive justice, serious considerations have to be given to the pricing of environmental values and environmental damage. Measures to correct the unfair social effects must be developed. The 'wide' PPP and instruments to apply it must be supplemented by substantial rules such as environmental quality standards, emission limits, and material and procedural environmental rights.

The next question is *how* the external costs can be internalized into the polluter's costs. This is one of the classical issues in environmental economics. The usual answer is *taxes and charges* on the polluting activity. This raises new questions: What exactly should be taxed? Who should pay the tax? What is the right tax level? These are typical issues of environmental economics in the perspective of efficiency and cost-effectiveness.

Environmental taxes raise difficult issues of distributive justice. Who bears the burden of environmental taxes? The problem is particularly evident when a tax system is applied to everyday activities of ordinary families. Examples are tax on energy consumption/electricity, transport, or waste disposal. The tax increases the price in order to reduce demand – in energy consumption, car use or waste production. The objective is reduced pollution from these sources. But, in a social perspective, the tax may be problematic. The increased costs are relatively more burdensome for some people than for others. Charges on energy consumption will be particularly burdensome for big families with poor income. It is necessary for poor families to reduce their expenses and thus their consumption. It is not equally necessary for wealthy families. Hence, *most of the environmental effect of taxes is achieved through the sacrifices of the poorest segment of the population.* The well-to-do can afford the increased price, and continue their high level of energy consumption, car use and waste generation. Although rational from a purely economic view, the effect of the PPP as a principle of internalization of costs becomes its caricature: 'Those who can pay may pollute.'[18]

[18] The PPP in the narrow sense may, of course, indirectly have the same effect, since it normally leads to increased prices of the products produced by the polluting activity. However, the economic and hence social effects of taxes and charges are more direct and evident.

The distributive effects of environmental taxes are strengthened by the application of economic theory on these instruments. The efficiency objective of taxes is to get the polluter to adapt its activity to the 'optimal' level of pollution. According to economic theory, the correct tax level is not equal to the social costs, including environmental costs, but must correspond to the *marginal* social cost at the 'optimal' level. This so-called 'Pigovian tax'[19] has the somewhat surprising effect that the polluter must pay considerably more than the full social costs of the pollution. This is shown in the 'classical diagram' of environmental economics. Here, it may illustrate a factory's abatement cost, at an efficient emission level, the social damage cost caused by the emission, and the factory's cost when a Pigovian tax is applied as an incentive to reach the efficient emission level.[20]

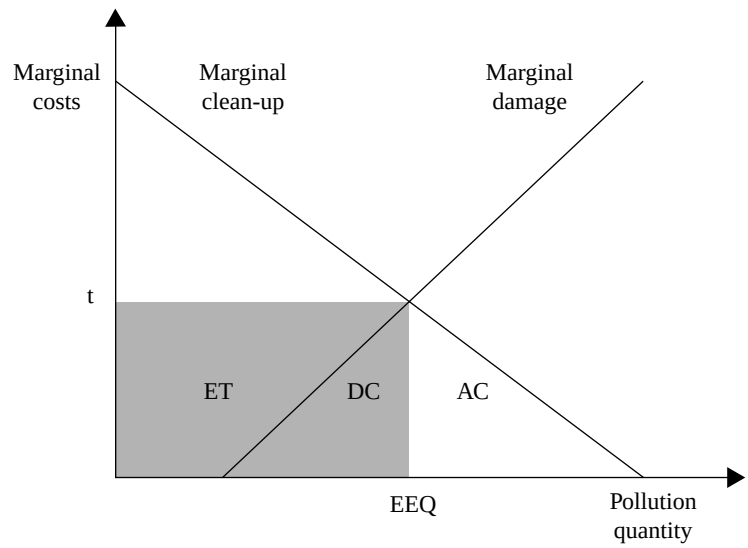

Figure 21.1 Pigovian tax: relationship between clean-up costs and social costs of pollution

EEQ = the efficient emission quantity
T = the level of emission tax that leads to the efficient emission quantity
AC = the abatement costs to be covered by the polluter under the PPP in the narrow sense
DC = the damage cost of the remaining pollution
ET = the extra tax amount – in addition to the damage cost – to be paid by the polluter through a 'Pigovian tax'

Figure 21.1 illustrates the relationship between clean-up costs and social costs of pollution. It may be applied, for example, to the costs related to pollution from a

[19] Developed by the British economist in Pigou 1924. [20] Source: Eide and Stavang 2005.

factory. If the factory's clean-up costs are zero, the pollution from the factory is at its maximum, and so are the social damage costs of the pollution. It shows how the economic burden of a polluter, in order to reach the efficient or optimal level of pollution (EEQ), varies considerably with different policy instruments and meanings of the PPP. If the polluter has to pay for abatement costs under the PPP in the narrow sense, the cost is AC. If he must pay a 'Pigovian tax', the cost is DC + ET.

The extra burden on the polluter of a Pigovian tax strengthens the incentive effects of the taxes towards efficiency, but aggravates the distribution problems of taxes. For polluting firms, it may entail production costs and other distributive effects which are simply too high to bear. The effect of this may be the closing down of factories, the loss of jobs and social problems. Intuitively, it is difficult to understand why a polluting factory has to pay a tax which may be several times higher than the social costs entailed by its pollution. In short, it is very problematic in a distributive justice perspective.[21]

It should be noted that PPP in this sense has limitations and is disputed as an efficiency principle. The 'Pigovian tax' solution presupposes that the pollution problem is 'unilateral'; that the victims of the pollution are not in a position to adjust to the pollution or in other ways influence the consequences and thus the social costs. This is the case with many of today's pollution problems, most clearly with chemical air pollution from diffuse sources. However, some environmental problems can correctly be described as *reciprocal relationships*: they are caused by conflicting or incompatible uses of the same environmental resource. Both parties may be in a position to avoid the problem. Cases in point are discharge of biodegradable waste into a fjord with aquaculture, and airport noise in a housing area. The economically efficient solution to the problem may be to continue aquaculture and air traffic, but remove the aquaculture installations to the neighbouring fjord, and insulate the houses to reduce the noise nuisance. It is thus the '*principle of the cheapest cost avoider*' that leads to efficiency, not the PPP, which may imply that the *victim* and not the polluter should pay for necessary preventive measures.

The conception of pollution problems as reciprocal relationships – conflicting or incompatible uses of the same resource or environment – is the point of departure for Ronald H. Coase's discussion of the problem of social costs.[22] The 'Coase theorem'[23] is another challenge to the PPP as a principle of economic efficiency. If the victim is in a position to influence the consequences of the pollution, Coase shows that the parties will negotiate the efficient solution regardless of the initial distribution of rights and obligations. If the rights of the parties are clearly defined, and transaction costs are zero, an efficient result will be reached regardless of whether the rule is

[21] See the discussion on this, *inter alia*, in Pearce and Turner 1990 chapter 6.

[22] Coase 1960; repeated in Coase 1998.

[23] The Coase theorem is worded in several different ways. A straightforward definition is found in Polinski 1989 at 12: 'If there are zero transaction costs, the efficient outcome will occur regardless of the choice of the legal rule.'

that the polluter pays or that the victim pays. If it is profitable for the polluter to continue the pollution, while compensating the victim for his damage, the polluter will seek that solution. If, on the other hand, the damage of the pollution to the victim is such that it is better for the victim to avoid it by paying the polluter to stop pollution, the victim will seek that solution. The end result will depend on the strengths of interests on both sides.

As an (efficiency) principle of internalization of social costs, the PPP in the wide sense does not imply compensation to victims of pollution. The income from environmental charges and taxes shall not be used to compensate the victims. Compensation may in fact lead to an inefficient solution, as it may remove the incentive for victims of pollution to avoid the problem.

However, rules on liability and compensation for pollution damage are often claimed to be a fulfilment of the PPP. One may even maintain that PPP in a legal sense means (strict) liability and compensation for pollution damage. This version of the principle, and some connected issues of justice, will now be discussed.

4 The polluter pays principle as a principle of liability and compensation for pollution damage

As a principle of liability and compensation, PPP implies that the person that causes pollution is usually liable for pollution damage regardless of *culpa*, and consequently also for the costs of preventing such damage. In many countries this has old roots in tort law. This is also perceived as a 'natural' legal solution, based on considerations of fairness or justice. It is conceived, intuitively, as a 'normal' or 'just' principle: Nobody should have the right to damage others without a duty to compensate the victim. This appears as particularly reasonable where the polluter earns money from the polluting activity and pollution is a normal and foreseeable effect of the activity. The polluter is seen – and legally defined – as the one who brings about negative changes through emissions and thus 'causes' the problem – the 'tortfeasor'. The PPP in this sense becomes a clear principle of *corrective justice*, even an ethical principle.

This is clearly valid as the main rule and the starting point for the analysis. But, again, a closer look at different situations shows that the PPP is not always a just principle in a corrective justice perspective. Let us take a closer look at some aspects of this issue.

First, there must be some limitations to the liability at the outset. We must all accept some pollution, because society – and actually life itself – cannot function without a certain level of pollution. We are all contributing to pollution through our daily activities, so we are at the same time polluters and victims of pollution. A certain level of pollution is always accepted by society. So, corrective justice must mean that only pollution damage over and above a certain acceptable or 'usual' limit – to which not 'everybody' contributes – should be compensated. Here, the concept of a tolerance limit comes into play.

In the traditional neighbour law of many Western countries, there is a 'tolerance limit' which limits liability for neighbour nuisance. The nuisance has to exceed a certain threshold before it entails compensation to the neighbour. This threshold is usually not only a physical factor. It may also be linked to the question of probability and predictability: What can be expected? What is my future position likely to be? If you choose to live close to a motorway, you must expect traffic noise at night. You have to tolerate more noise than the person who settles in the remote countryside. This influences both the corrective justice assessment and the solution to the compensation issue.

In many cases, the victim accepts the pollution or risk of pollution. She buys an apartment close to a noisy road or a stinking factory. This choice may be hard, and 'voluntary' only in a theoretical sense. She may simply not be able to afford to settle in a pollution-free area. For others, the choice may be more real: the victim prefers the nuisance and thus lower housing costs in order to afford and enjoy other goods. It may even be maintained that she herself *causes* her problem when she moves into the polluted area. In this case, one may argue that full compensation for the damage caused to her by the pollution is neither necessary nor reasonable from a corrective justice point of view. In reality, rules on liability for neighbour nuisance are often based on a 'time priority rule': neighbours who moved into the area after the polluting industry have no – or only limited – right to compensation.[24]

This is just a simple example among many that shows that PPP as a principle of compensation for damage is not always evident from a *corrective justice* aspect. Instead, corrective justice may require an *exception* to the PPP.

But what about the *distributive justice* perspective here? A closer look reveals that we are again faced with a dilemma.

On the one hand, if compensation is excluded on the basis of a time priority rule, it works to uphold differences in environmental quality and social conditions. More pollution in an already polluted area – where poorer groups of the population live – is not compensated. The polluter has no incentive to improve the situation. Hence, the time priority rule works to the effect that bad conditions are kept bad, and it may even entail a worsening of the situation – to the further detriment of the weaker part of the population. This touches the core of the environmental justice problem as a social issue.

From this perspective, *the PPP can be used as an argument in favour of distributive justice*, with a view to modifying the traditional neighbour law by giving less weight to time priority.

But this is not the whole story. There are also situations where *distributive* justice goes against the PPP solution, because of social conditions. Take the example of a polluting factory close to a living area with well-to-do people. The factory strives to

[24] In Norwegian law, time priority is important, but not always entirely decisive according to the Neighbour Act of 16 June 1961 No. 15, section 2.

survive, with the risk of unemployment for the (less affluent) workers if it has to compensate the rich community for the reduced property value due to the emissions from the factory. An extreme case is the following: In New Delhi in India, the people living in the wealthy part of town, with electrical heating, are said to have once complained about nuisance from smoke from Old Delhi. This smoke came from small fires lit by the poor people, living in the slum areas, who could not afford electricity. Would it be just that the poor people should compensate the rich people for their damage, or be forced to end fire burning? Most people will probably answer no, regardless of time priority.

Let us now go back to questions of corrective justice as a challenge to PPP. It is, for example, not evident that PPP is always a just principle if the effect of a certain emission is *excusably unknown* to the polluter. For example, the possible harmful effects of a substance may have been totally unknown even to scientists in the field.[25] Another example is what is known as 'regulatory compliance defence'.[26] Here, the pollution is in compliance with the law and regulations. Society has struck a balance between the interests of the polluter and the environment, and the polluter respects the restrictions which have been laid down by the authorities. It is still reasonable and fair – in many situations – that the victim of the remaining pollution is compensated for the damage and loss. But is it fair that the compensation is to be paid by the polluter? It is possible to argue in favour of a different solution: that the compensation is paid by the society, since the society has defined the limit between the legal and illegal pollution and thus also brought about – and accepted – the harm to the victim of pollution. Needless to say, there are also arguments in favour of polluter liability also for the remaining pollution. One important argument is that this will be an incentive for further emissions reductions.

Yet, this illustrates a general viewpoint: corrective justice may require that the victim of pollution is compensated. But must the compensation necessarily be paid by the polluter? In his profound analysis of compensation and justice, Jules L. Coleman[27] shows that this is not necessarily so. If the main argument for compensation is that a wrongful act has been carried out to the detriment of others, then corrective justice implies that compensation is paid by the tortfeasor – in our case, the polluter. But, if we instead concentrate on the harm and see the need for compensation to the victim as the main reason for compensation, *who* pays compensation is less important from a *corrective justice* point of view. In our case, it might be a state budget, an insurance company or other financial sources instead of the polluter.

The examples mentioned are possible exceptions to the PPP as a principle of liability and compensation for pollution damage, which are not insignificant. Still, a broad and intuitive corrective justice assessment implies strict liability for the polluter.

[25] The fairness problem of PPP faced with 'excusable ignorance' is one of the issues discussed with reference to climate change and mitigation of greenhouse gas emissions in Caney 2005 at 747–75.

[26] Or 'permit defence' if the pollution is legal on the basis of a permit.

[27] Coleman 1992.

5 The PPP as a principle of allocation of costs between states

Turning to the PPP as a principle of allocation of costs between states, we are faced with many of the same dilemmas of fairness and justice as have been described above. Here, they refer to relations between states instead of between citizens and other actors at the national level, and the core issue is the relationship between rich and poor countries. Let us take a closer look at how the three main versions of the PPP work in the perspective of justice between states:

- The PPP in the narrow sense: each state should bear its own costs to abate pollution.
- The PPP in the wide sense: the polluting state should internalize the environmental (damage) costs in other states in its pollution control policy.
- The PPP as a principle of liability and compensation for environmental damage: the polluting state should be liable for pollution damage in other states.

5.1 The PPP in the narrow sense

Looking first at the PPP in the narrow sense, one problem has to be highlighted: the striking difference in environmental policy between most of the rich and most of the poor countries, not least related to pollution control. As mentioned, PPP in the narrow sense does not in itself work to reduce this difference. Rather, on the contrary, without substantive international rules to harmonize pollution control policy, it may stimulate a 'race to the bottom'. It does not in itself promote environmental justice in the sense of improved environmental conditions for poor people in poor countries.

The soft wording of Principle 16 of the Rio Declaration reflects a certain ambivalence. This may partly be explained by the fact that most industrial countries still give some state aid to clean-up measures, as illustrated by the OECD and EC guidelines on state aid for environmental protection. It may also reflect the recognition of a more profound global problem: the lack of resources for pollution abatement in many developing countries, and the need for financial support from the industrialized countries.

As a matter of fact, this need was recognized as early as the 1972 UN Stockholm Conference on the Human Environment. Principle 12 of the Stockholm Declaration[28] stated that necessary resources should be made available, 'taking into account the circumstances and particular requirements of developing countries and any costs which may emanate from their incorporating environmental safeguards.' However, for a long time, the issue was not really pursued.

The World Commission on Environment and Development elaborated on the topic in its report in 1987. The Commission strongly recommended that 'a larger portion of total development assistance should go to investments needed to enhance the environment and the productivity of the resource sectors' in developing countries,

[28] Report of the UN Conference on the Human Environment, UN Doc. A/CONF.48/14/Rev.1 (1972).

mentioning such tasks as reforestation, watershed protection, soil conservation and low-cost sanitation measures.[29] It also argued for the active support of the industrialized countries to strengthen the technological capabilities in developing countries.[30] On the other hand, it criticized developing countries for the lack of measures to reduce pollution, which gave these countries a competitive advantage on the world market for 'pollution-intensive goods'. The Commission added:

> Yet it is in the developing countries' own long-term interest that more of the environmental and resource costs associated with production be reflected in prices. Such changes must come from the developing countries themselves.[31]

Faced with the critical situation of the ozone layer, urgent action was needed also in developing countries. The 1987 Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol)[32] to the Vienna Convention for the Protection of the Ozone Layer[33] established a 'financial mechanism', including a 'multilateral fund'.[34] The mechanism 'shall meet all agreed incremental costs' of the developing countries 'in order to enable their compliance with the control measures of the Protocol'. An important point is that contributions to the mechanism shall be *additional* to other financial transfers. This was probably the first major exception from the PPP in a state-to-state context.

In 1990, the environmental economist David W. Pearce acknowledged the need to adjust the PPP for development purposes when he wrote:

> Finally, sustainability requires a reconsideration of the international economic order. Where critical ecosystems are in the possession of the developing world the richer cannot expect their conservation, with consequent benefits to the developed world, without paying for those benefits. This will mean rethinking the 'polluter pays principle', since a country degrading its forests (the polluter) will not pay those suffering the loss of carbon-fixing values (the polluted). International conservation financing must become a key focus for the last decade of the 20th century.[35]

This approach was broadened and strengthened in the 'Rio process', and since then it has marked the North–South debate on the environment and sustainable development. In the United Nations Declaration on Environment and Development (Rio Declaration) and the 1992 Framework Convention on Climate Change, the issue was given a general application through the principle of 'common but differentiated

[29] World Commission on Environment and Development 1987 at 77. [30] *Ibid.*, 88. [31] *Ibid.*, 84.

[32] 1987 Protocol on Substances that Deplete the Ozone Layer, reprinted in 26 *International Legal Materials* (ILM) (1987) 1550. Adopted on 16 September 1987 at Montreal.

[33] 1985 Convention for the Protection of the Ozone Layer, UNEP Doc. IG.53/5, reprinted in 26 ILM (1987) 1529. Adopted on 22 March 1985 at Vienna.

[34] Montreal Protocol, note 32 above, Art. 10, later to become the Global Environment Facility (GEF). On which see Mickelson, in Chapter 15 of this Volume.

[35] Pearce 1990.

responsibilities'.[36] Special multilateral financial instruments have been developed to this effect, the most important being the Global Environmental Facility (GEF). The consequences of this are, at least on the surface, an important deviation from the PPP in the narrow sense as a principle for allocation of costs between states.

'Common but differentiated responsibilities' is considered as a principle of justice and equity in international relations.[37] This is indirectly expressed in Principle 7 of the United Nations Declaration on Environment and Development (Rio declaration):

> States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

However, this can also be seen as an expression of the Polluter Pays Principle in a broad and general sense, and based on justice and equity: the industrialized states have already polluted the atmosphere too much, and must pay for necessary measures to clean it up, even measures taken by developing countries.[38]

5.2 The PPP in the wide sense

This point of view is strengthened when we move to an analysis of the PPP in the wide sense, related to transfrontier pollution. According to this, a polluting state has an obligation to internalize the cost of pollution damage in other states when regulating polluting activities within its borders. This coincides with another principle of international environmental law: the principle of 'non-discrimination'. Environmental effects in other countries shall be assessed and considered similarly, and be given the same weight when decisions are taken, as effects within the national borders.[39]

The economic efficiency objective behind the PPP in the wide sense applies in principle to any economic unity. The need to internalize all social costs to reach efficiency is no less when the pollution is transboundary than when it is kept within

[36] United Nations Declaration on Environment and Development, UN Doc. A/CONF.151/26/rev.1 (1992), 31 ILM (1992) 876, Principle 7; United Nations Framework Convention on Climate Change, reprinted in 31 ILM (1992) 849, Art. 4.

[37] Whether it is always a good principle from an environmental protection point of view is another matter, and remains controversial. A discussion of this in relation to the international climate regime is found in Kokott 1999. See also Brunnée and Shelton in, respectively, Chapters 16 and 3 in this volume.

[38] This is, from necessity, a simplification. It may, for example, be discussed whether it is fair that the members of the present generation should pay for effects that have been caused by earlier generations' actions. Caney offers a thorough and critical analysis of these and other problems of fairness in the distribution of costs of climate change mitigation and adaptation measures. See Caney 2005.

[39] The principle was first expressed in the Environment Convention of 19 February 1974, between Denmark, Finland, Iceland, Norway and Sweden (Nordic Environment Convention), 13 ILM (1974) 591.

the borders of a nation state.[40] However, to reach efficiency in a transboundary pollution context raises special methodological and institutional problems. One may again argue that the principle of common but differentiated responsibilities is one way of at least partly implementing the PPP in the wide sense. This viewpoint seems particularly valid for those international environmental problems which are mainly caused by the developed countries, such as climate change, the problem of the ozone layer, and the global spreading of toxic, persistent chemicals.

This leads into the third issue.

5.3 The PPP as a principle for liability and compensation for transfrontier pollution damage

The principle of state sovereignty in customary international law implies that a state has the right to use its natural resources according to its own decisions, while at the same time have the the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction.[41]

It is the last part of this principle which is of interest here. In many ways it can be compared to the general prohibition of harmful pollution in national law. It is generally understood as also implying a duty of the polluting state to compensate the damaged party, as was expressed in the *Trail Smelter* case.[42] Unfortunately, this rule is unclear, both in its content and its status. For example, it is unclear whether the state is liable if it has shown 'due diligence' and done whatever seemed reasonable to prevent the damage. It is also unclear where the liability 'threshold' lies, and what types of damage should be compensated. There is agreement in international law that a state must accept some nuisance or damage without having the right to compensation, but the borderline between what is acceptable and what is not acceptable is quite unclear. And, thirdly, a general 'proportionality principle' may apply in the sense that the damage done to the victim state should be compared to the polluting state's costs of preventing the damage. These and other questions make it quite unclear what exactly constitutes a breach of international law.[43]

[40] Baumol and Oates 1988, chapter 16, analyzing international environmental economics, underline that the general analysis of environmental economics 'is fully applicable to the regulation of transnational pollution'. The transfrontier pollution problem is not different from an ordinary problem of externalities among a small group of individuals.

[41] See 1972 United Nations Declaration on the Human Environment (Stockholm Declaration), UN Doc. A/CONF/48/14/Rev.1 (1972), 11 ILM (1972) 1416, Principle 21. Repeated with a slight modification ('environmental policies' changed to 'environment and development policies') in Principle 2 of the Rio Declaration of 1992, note 36 above, and expressed in the preambles to or operative parts of several global environmental conventions.

[42] 33 *American Journal of International Law* (AJIL) (1939) 182; and 35 AJIL (1941) 684.

[43] State responsibility for transfrontier damage is a complex issue in international law. Since 1978, the International Law Commission has been working on the topic of 'International Liability for Injurious Consequences

It is definitely a just rule, but it is difficult to apply. Transfrontier pollution takes place every day without any protests or legal actions by the state victim. As the principle is interpreted, it is not applicable to true global problems like climate change and the dispersion of toxic substances. The PPP could be used as an argument for strengthening and sharpening this general rule of international environmental law.

To sum up with the problem of global warming as the clear case. It is certainly in accordance with environmental justice that those parts of the world where the main sources to the problem are found shall cover their own costs of preventing further emissions, seek to internalize the global costs of climate change in their policy, and pay compensation for the damage done elsewhere.

It must be recognized, however, that the complexities of both the most important environmental problems and the international economic relations make the application of the principle difficult. Increasingly, all states are at the same time polluter and victim of pollution, as they together contribute to climate change and the deterioration of the global biodiversity. The globalization of business, trade and the economy, and the intricate web of multinational companies, makes it often very difficult, if not impossible, to identify 'the polluter' and 'victims', and allocate responsibilities and costs in accordance with conceptions of fairness and justice.

6 Conclusion

The Polluter Pays Principle has several meanings, and I have looked into three versions of the principle from a justice perspective. The main conclusion is that the principle is a just principle both as a principle for the allocation of costs to prevent pollution, a principle of internalization of the social costs of pollution, and of compensation to victims of pollution. I have mainly dealt with local situations. However, as shown in section 5 above, the PPP is basically a just principle also as a principle of the allocation of the costs of pollution and pollution abatement between states.

However, exemptions and modifications are required in order to avoid clearly unreasonable results from both a corrective justice and a distributive justice point of view. In particular, it must be applied with due account of its possible unreasonable distributive effects. And, in the perspective of global justice, it must work together with the principle of common but differentiated responsibilities. The PPP should be seen as exactly that: a principle, a starting point, a 'presumption' or 'main rule' – with modifications and exceptions required by considerations of corrective and distributive justice.

Arising out of Acts not Prohibited by International Law'. The work includes both prevention of transboundary damage from hazardous activities, and international liability in case of loss from transboundary harm arising out of hazardous activities. Three more recent consecutive reports by the Special Rapporteur, Mr P. S. Rao, are illustrative: see ILC Report A/53/10 (F), 1998, Chapter IV (B), ILC Report A/54/10 (F), 1999, Chapter IX (B), and ILC report, A/55/10, 2000, Chapter VIII. For the theoretical discussion, see also, *inter alia*, Birnie and Boyle 2002 at 181–200.

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