Philosophy, Law and Environmental Crisis / Philosophie, droit et crise environnementale

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EDWIN ZACCAI, MARINE LUGEN (BRUSSELS) ¹

COMMON BUT DIFFERENTIATED RESPONSIBILITIES AGAINST THE REALITIES OF CLIMATE CHANGE

1. INTRODUCTION

Economic development is constrained by environmental limits, particularly through anthropogenic climate change. This major issue requires an international coordination which is hard to reach, and in which political principles interact with practical situations. This article analyses in particular the principle of common but differentiated responsibilities (CBDR) as it was originally laid in the Rio Declaration in 1992, differentiating developed and developing countries. We confront this distinction with a wide variety of national situations in terms of greenhouse gas (GHG) emissions. We then consider the official development aid vectors oriented towards environmental issues, climate change and more specifically adaptation to climate change, to conclude that those mechanisms show a low corrective power in relation to the processes involved. Looking at technology transfer promoting climate mitigation, we argue that another principle in the Rio Declaration, which deals with “different standards” between developed and developing countries, is also questioned by evolutions in the economic competition between states. Finally, we conclude by calling for a pragmatic approach that would not skip regulating principles but would fully takes into account their connection and combination in diverse and changing situations.

2. CLIMATE CHALLENGE AND DEVELOPMENT

2.1 THROUGH THE LENS OF THE IPAT EQUATION

One way of seeing in simplistic terms how growing impacts on the environment challenge the trajectories of societies is by using the “IPAT equation”, conceptualized by Ehrlich and Holdren². This equation describes how the combination of growing population, affluence and technology contributes towards the impacts of human activity on the environment.

\[ I = P \times A \times T \]

World population has increased by a factor 4 during the 20th century, while economic growth increased by a factor 14 and industrial production by a factor 40³.

¹ The authors would like to gratefully thank Etienne Hannon for his numerous comments on an earlier version of this paper, and also Romain Weikmans for his careful and informed reading. This article was made possible thanks to the Belgian Federal Development Cooperation funded R&D Platform on Development Cooperation KLIMOS (http://www.kuleuven.be/klimos).


Population and affluence, for ethical and practical considerations, are usually not the main focus for actions. It is sometimes possible to reduce population growth, but to question the growth of wealth is difficult by and large, within the actual political and economic systems, be it in poor or rich countries. Therefore the “T” factor remains the main factor with some potential to reduce the human impact on the environment in a substantial proportion. This equation is a very simple way of looking at a complex problem, however it captures the difficulty of limiting environmental impacts when technological solutions are insufficient or considered as non-affordable\(^4\), without deeper changes within the systems of production and consumption.

### 2.2 Unreachable 2°C?

Actually, combating climate change requires substantial changes in the economy, especially in the energy sector, but also within the production and consumption patterns. However two decades of climate change negotiations proved to be insufficient to achieve this result\(^5\). The Parties to the UN Framework Convention on Climate Change (UNFCCC) agreed in 2009 in Copenhagen to limit the increase in global temperature below 2°C compared to the preindustrial era (around 1750), in order to avoid dramatic and unmanageable impacts of climate change. Yet under current trends this objective, even though technically achievable, is unlikely to be reached, knowing that the increase has already reached 0.8°C at present times. Scenarios based on policies currently implemented (called “baseline scenarios”) suggest that temperature could reach up to 4.8°C by the end of the century compared to the 1986–2005 period\(^6\). Global CO\(_2\) emissions tend to increase with economic growth, especially energy-related ones. According to several studies, current proven fossil-fuel reserves are at least three times larger than the remaining carbon budget compatible with the 2°C goal\(^7\). The Intergovernmental Panel on Climate Change (IPCC) estimates that the world since the industrial revolution has emitted about two thirds the carbon that is compatible with keeping climate change within a safe range\(^8\). This situation is especially worrisome as it means that a great deal of fossil fuel resources have to be left in the ground (especially for coal), which is opposite to current trends of further exploitation\(^9\).

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\(^8\) Intergovernmental Panel on Climate Change, *(footnote 6)*, 10.

3. CBDR, PRINCIPLES AND EMPIRICAL DATA

3.1 COMMON BUT DIFFERENTIATED RESPONSIBILITIES (CBDR)

This problem of compatibility between growth and climate change stabilization has to be considered in the context of very diverse societies in our world. The negotiations led under the UNFCCC struggle to find principles acceptable to all in order to share the burden of necessary changes to be made, taking into account the specific contributions of different nations. In this context, a major principle we would like to discuss here is the Common but differentiated responsibility principle. This principle is enclosed in the Rio Declaration on Environment and Development (1992) (principle 7), a major piece of the architecture of sustainable development international policies. It is also included in the UNFCCC (Article 3), which was launched during that same Rio conference, and has been reiterated since then as for instance at the United Nations Summit on Sustainable Development, the latest major summit on sustainable development, held in Rio in 2012.

Principle 7 of the Rio Declaration reads as follows: “States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem. In view of the different contributions to global environmental degradation, 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”10.

The CBDR principle promotes equity considerations in international environmental law and has at least two consequences. First, common responsibility means that all states shall cooperate to protect the environment and restore ecosystems. It also implies that our generation has a responsibility towards future generations. Second, differentiated responsibilities proceed from inequalities across states be it in capacities, socioeconomic situations or historical, current and future contributions to global environmental problems. CBDR links the exploitation of global commons with a special responsibility to take actions in order to reduce damages. The Rio Declaration specifically mentions developed countries as carrying this responsibility. We will see below that this apparently clear cut distinction between developed and developing countries has become problematic in many respects, and certainly in the context of climate change.

The CBDR principle is different from the polluter-pays principle (also included in the Rio Declaration, Principle 16), as there is no legal responsibility for the polluter as such. Instead it aims at bringing substantive equality in the regime by introducing distributive rules. To date, there are two main applications of differentiation in the case of climate change. First, it becomes mandatory for some countries to commit to quantified emissions reductions while this obligation does not hold for others (see below, the Kyoto Protocol). Second, the level of implementation of laws can be different between states, and some can benefit from incentives such as deferred compliance dates, technology transfer or financial assistance11.

11 Rowena Maguire, *The Role of Common but Differentiated Responsibility in the 2020 Climate
3.2 Emissions of major and minor emitters in the world

After this general presentation of the context of global climate change and of the CBDR principle, we introduce two tables of empirical data of CO\textsubscript{2} emissions from a number of countries.

Table 1 shows the top 15 emitters for the period 2003–2012. Among them, a significant number belongs to the group called “non-Annex I parties” (i.e. developing countries) in the vocabulary of the negotiations under the UNFCCC (China, India, Iran, Saudi Arabia….) (see next point on the Kyoto Protocol). Table 2 shows the 15 countries with the lowest human development index (HDI)\textsuperscript{12} for the same time period. All of these countries are also considered in the UN context of the UNFCCC or Rio and post-Rio summits as part of the same “non-Annex I” group. In these two tables, we have included the most recent complete data from the “Global carbon budget”\textsuperscript{13}, accounting CO\textsubscript{2} emissions per country in million tons of carbon per year.

As we can see in Table 1 big “developing countries” might have levels of emissions similar or above those of “developed countries” included in the same table (Japan, South Korea, …), while other “developing countries” in Table 2 emit at a much lower level, illustrating the wide range of national circumstances within developing countries. There is a factor 50 or 100 between typical emissions per capita in Table 1 countries (level of 10 TCO\textsubscript{2}/cap.) compared to countries in Table 2 (level of 0.1 to 0.2 T CO\textsubscript{2}/cap.).

Table 1 shows also that the GHG emissions’ growth rate (see line A) of the biggest emitters is quite high for the emerging economies but negative or relatively low for a majority of developed countries. Many countries announced policies to curb the rate of their future emissions, and for instance China has pledged in 2014 that it would peak its emissions in 2030. However, the IPCC considers that respecting the target of 2 degrees seen above would be difficult without peaking the global emissions around 2020. In comparison, Table 2 shows a trajectory where national emissions and per capita emissions (see line C) remain extremely low. Those data clearly highlight the gap between emerging economies and the world’s poorest countries although once again all of them are included in the same category of “developing countries”.

In summary, industrialized countries such as China or India are now far bigger emitters than major European countries. China has been the biggest world emitter since 2006, in terms of CO\textsubscript{2} emissions and since 2004, for all GHG emissions\textsuperscript{14}. In 2012, China had a 29\% share of global emissions, more than the US (16\%) and the EU (11\%) combined. India is to date the third biggest emitter for all GHG-emis-

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\textsuperscript{12} According to the United Nations Development Programme (UNDP) classification 2012–2013.

\textsuperscript{13} The Global Carbon Budget provides annual updates of carbon dioxide (CO\textsubscript{2}) emissions (from fossil fuel and cement production) and trends. It is part of the Global Carbon Project, a broad scientific partnership formed to provide mutually agreed knowledge base to support policy debate and action for mitigation (http://www.globalcarbonproject.org/).

\textsuperscript{14} Gregg Marland/Tom Boden/R.J. Andres, Global, Regional, and National Fossil-Fuel CO2 Emissions, Carbon Dioxide Information Analysis Center, Oak Ridge, 2013.
Table 1. CO₂ emissions per country¹: Top 15 emitters in 2012²

<table>
<thead>
<tr>
<th>Year</th>
<th>China</th>
<th>United States</th>
<th>EU (28)</th>
<th>India</th>
<th>Russian Federation</th>
<th>Japan</th>
<th>South Korea</th>
<th>Iran</th>
<th>Saudi Arabia</th>
<th>Canada</th>
<th>Indonesia</th>
<th>Mexico</th>
<th>South Africa</th>
<th>Brazil</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>1234.03</td>
<td>1549</td>
<td>1107</td>
<td>349.58</td>
<td>437.68</td>
<td>337.45</td>
<td>127.14</td>
<td>114.22</td>
<td>89.25</td>
<td>150.86</td>
<td>86.39</td>
<td>110.62</td>
<td>103.85</td>
<td>87.71</td>
<td>94.49</td>
</tr>
<tr>
<td>2004</td>
<td>1442.10</td>
<td>1579</td>
<td>1110</td>
<td>367.75</td>
<td>437.13</td>
<td>343.51</td>
<td>131.52</td>
<td>122.03</td>
<td>107.95</td>
<td>150.63</td>
<td>92.07</td>
<td>112.01</td>
<td>116.48</td>
<td>92.13</td>
<td>95.11</td>
</tr>
<tr>
<td>2005</td>
<td>1578.95</td>
<td>1589</td>
<td>1104</td>
<td>384.82</td>
<td>440.60</td>
<td>337.66</td>
<td>126.24</td>
<td>127.99</td>
<td>108.44</td>
<td>153.55</td>
<td>93.26</td>
<td>118.64</td>
<td>108.02</td>
<td>94.71</td>
<td>98.91</td>
</tr>
<tr>
<td>2006</td>
<td>1749.24</td>
<td>1565</td>
<td>1107</td>
<td>410.24</td>
<td>455.31</td>
<td>335.78</td>
<td>128.39</td>
<td>139.05</td>
<td>118.01</td>
<td>150.05</td>
<td>94.12</td>
<td>120.48</td>
<td>115.86</td>
<td>94.81</td>
<td>101.23</td>
</tr>
<tr>
<td>2007</td>
<td>1852.14</td>
<td>1590</td>
<td>1094</td>
<td>439.43</td>
<td>454.76</td>
<td>341.19</td>
<td>135.22</td>
<td>147.20</td>
<td>107.32</td>
<td>152.93</td>
<td>102.41</td>
<td>124.31</td>
<td>120.98</td>
<td>99.05</td>
<td>102.87</td>
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<tr>
<td>2008</td>
<td>1918.58</td>
<td>1543</td>
<td>1071</td>
<td>493.94</td>
<td>467.86</td>
<td>329.13</td>
<td>138.55</td>
<td>155.60</td>
<td>114.06</td>
<td>148.62</td>
<td>112.46</td>
<td>128.56</td>
<td>126.81</td>
<td>105.72</td>
<td>105.71</td>
</tr>
<tr>
<td>2009</td>
<td>2097.69</td>
<td>1449</td>
<td>990</td>
<td>540.57</td>
<td>429.33</td>
<td>300.15</td>
<td>138.91</td>
<td>157.48</td>
<td>117.54</td>
<td>140.15</td>
<td>123.56</td>
<td>121.69</td>
<td>137.43</td>
<td>100.12</td>
<td>107.74</td>
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<td>2010</td>
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<td>1482</td>
<td>1012</td>
<td>547.81</td>
<td>474.71</td>
<td>319.26</td>
<td>154.78</td>
<td>155.88</td>
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<td>118.35</td>
<td>120.99</td>
<td>125.48</td>
<td>114.47</td>
<td>101.74</td>
</tr>
<tr>
<td>2011</td>
<td>2480.04</td>
<td>1450</td>
<td>980</td>
<td>567.32</td>
<td>492.85</td>
<td>320.14</td>
<td>164.91</td>
<td>159.61</td>
<td>130.25</td>
<td>138.71</td>
<td>128.90</td>
<td>124.80</td>
<td>124.51</td>
<td>118.48</td>
<td>103.41</td>
</tr>
<tr>
<td>2012</td>
<td>2625.73</td>
<td>1397</td>
<td>967</td>
<td>611.23</td>
<td>491.84</td>
<td>342.22</td>
<td>166.68</td>
<td>164.50</td>
<td>137.88</td>
<td>137.82</td>
<td>129.99</td>
<td>129.94</td>
<td>125.74</td>
<td>122.08</td>
<td>101.15</td>
</tr>
</tbody>
</table>

| A. Growth rate %² | 11.278 | -9.81 | -12.65 | 74.85 | 12.37 | 1.43 | 31.1 | 44.02 | 54.49 | -8.64 | 50.47 | 17.47 | 21.08 | 39.19 | 7.05 |

| B. Compound Annual Growth rate % | 8.75 | -1.14 | -1.49 | 6.4 | 1.3 | 0.16 | 3.05 | 4.14 | 4.95 | -1 | 4.64 | 1.8 | 2.15 | 3.74 | 0.76 |

| C. Years before doubling 2003 emission⁴ | 9 years | / | / | 12 years | 54 years | 438 years | 21 years | 18 years | 15 years | / | 16 years | 39 years | 33 years | 19 years | 93 years |

| D. CO₂ per capita emissions (2012)⁵ | 7.1 | 16.4 | 7.4 | 1.6 | 12.4 | 10.4 | 13 | 5.3 | 16.2 | 16 | 2 | 4 | 6.3 | 2.3 | 18.8 |

¹. Data from Thomas A. Boden, Glenn Marland, R.J. Andres, “Global, Regional, and National Fossil-Fuel CO₂ Emissions”, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak, 2013. All values are in million tonnes of carbon per year (1MtC = 3.664 billion of tonnes of CO₂ per year).
². Countries are organized in the table in descending orders of emissions.
³. For the period 2003–2012 (own calculation).
⁴. Based on the CAGR, starting at 2003 (own calculation).
Table 2. CO₂ emissions per country¹: Lowest 15 Human Development Index² (2012).

<table>
<thead>
<tr>
<th>Year</th>
<th>Ethiopia</th>
<th>Mozambique</th>
<th>Congo (RDC)</th>
<th>Burkina-Faso</th>
<th>Niger</th>
<th>Malawi</th>
<th>Guinea</th>
<th>Liberia</th>
<th>Sierra-Leone</th>
<th>Mali</th>
<th>Eritrea</th>
<th>Chad</th>
<th>Burundi</th>
<th>Central African Republic</th>
<th>Guinea-Bissau</th>
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<tbody>
<tr>
<td>2003</td>
<td>1.35</td>
<td>0.52</td>
<td>0.30</td>
<td>0.29</td>
<td>0.24</td>
<td>0.26</td>
<td>0.37</td>
<td>0.15</td>
<td>0.18</td>
<td>0.15</td>
<td>0.20</td>
<td>0.10</td>
<td>0.05</td>
<td>0.06</td>
<td>0.05</td>
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<tr>
<td>2004</td>
<td>1.43</td>
<td>0.52</td>
<td>0.32</td>
<td>0.30</td>
<td>0.26</td>
<td>0.27</td>
<td>0.37</td>
<td>0.17</td>
<td>0.18</td>
<td>0.15</td>
<td>0.21</td>
<td>0.10</td>
<td>0.05</td>
<td>0.06</td>
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</tr>
<tr>
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<td>0.40</td>
<td>0.31</td>
<td>0.23</td>
<td>0.25</td>
<td>0.32</td>
<td>0.20</td>
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<td>0.37</td>
<td>0.22</td>
<td>0.26</td>
<td>0.32</td>
<td>0.21</td>
<td>0.20</td>
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<td>0.11</td>
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<td>0.06</td>
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<tr>
<td>2007</td>
<td>1.61</td>
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<td>0.39</td>
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<td>0.26</td>
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<tr>
<td>2008</td>
<td>1.74</td>
<td>0.64</td>
<td>0.40</td>
<td>0.46</td>
<td>0.25</td>
<td>0.32</td>
<td>0.33</td>
<td>0.16</td>
<td>0.18</td>
<td>0.16</td>
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<td>0.14</td>
<td>0.07</td>
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<td>0.29</td>
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<td>0.17</td>
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<td>2010</td>
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<tr>
<td>2012</td>
<td>1.83</td>
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<td>0.57</td>
<td>0.47</td>
<td>0.39</td>
<td>0.35</td>
<td>0.34</td>
<td>0.22</td>
<td>0.19</td>
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<td>0.14</td>
<td>0.13</td>
<td>0.09</td>
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</tr>
</tbody>
</table>

A. Growth rate %³ 35.56 55.77 90 62.07 62.05 34.62 -8.11 46.67 5.56 13.33 -30 30 80 16.67 40

B. Compound Annual Growth Rate % 3.44 5.05 7.39 5.51 3.35 3.36 -0.94 4.35 0.6 1.4 -3.89 2.96 6.75 1.73 3.81

C. Years before doubling 2003 emissions⁴ 21 years 13 years 10 years 13 years 22 years 21 years / 17 years 118 years 50 years / 24 years 11 years 41 years 19 years

D. CO₂ per capita emissions (2010)⁵ 0.1 0.1 0.0 0.1 0.1 0.1 0.1 0.2 0.1 0.0 0.1 0.0 0.0 0.1 0.2

1. Data from Thomas A. Boden, Glenn Marland, R.J. Andres, “Global, Regional, and National Fossil-Fuel CO₂ Emissions”, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak, 2013. All values are in million tonnes of carbon per year (1MtC = 3.664 billion of tonnes of CO₂ per year)².
2. Countries are organized in the table in descending orders of emissions
3. For the period 2003–2012 (own calculation)
4. Based on the CAGR, starting at 2003 (own calculation)
5. Data from the World Bank, 2010 (metric tons per capita)
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Emissions, though its level of emission per capita is the lowest in Table 1. In 2013, non-OECD countries accounted for 60% of global emissions, up from 45% in 2000, a massive change. But while some emerging countries have a growing influence in the occurrence of climate change, some of the poorest countries have extremely low emissions’ profiles and annual growth rates, and they continue to have a very low share in global GHG emissions.

3.3 Kyoto’s attempt to share commitments

Compared to the general categorization of developed-developing included in the CBDR principle, the UNFCCC has established a more technical division between countries. The convention distinguishes between “Annex I Parties” (industrialized countries that were members of the OECD in 1992, plus countries with economies in transition), “Annex II Parties” (OECD member countries only) and “non-Annex I Parties”. Under the UNFCCC, Annex I Parties are to reduce their GHG emissions and Annex II Parties are to provide financial assistance and technologies to non-Annex I Parties to help them mitigate their emissions and adapt to the effects of climate change. However in the “non-Annex I Parties”, the heterogeneity sketched above still remains.

Launched in 1997, the Kyoto Protocol represents the main agreement framing the commitments towards mitigation at global level. It creates two types of differentiation. First, it defines obligations to reduce emissions for Annex I Parties and no legally binding obligations for non-Annex I Parties. Second, there is a differentiation in individual targets for Annex I Parties. However, the flexibility of the system undermined its effectiveness as major Parties withdrew from the Protocol (United States and Canada) while others didn’t pursue their engagement for the second commitment period (2013–2020) (Japan, Russian Federation and New Zealand). Furthermore some of the biggest emitters in the “non-Annex I” category have no legal obligations to reduce emissions. Altogether the share of global emissions still to be reduced under the second commitment period of the Kyoto Protocol is minor.

During the COP20, held in Lima in December 2014, it was made clear that next generations of agreements would imply for all countries to commit towards mitigation. Yet countries as China, Brazil and India already claimed that their commitment should be reviewed considering national contexts. Under the lead of India, developing countries pushed towards the addition of a paragraph in the text resulting from the COP about differentiation, saying that the principle of categorizing countries would be based on their ability to pay. The re-categorization of coun-

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16 Maguire (note 11), 261.
17 Ibid., 262.
18 Submissions from Parties to the ADP, in the UNFCCC website: http://unfccc.int.ezproxy.ulb.ac.be/bodies/awg/items/7398.php
tries, and of their responsibilities and commitments, will for sure be a major issue during the next climate summit, planned in Paris by early December 2015.

3.4 Several types of indicators ranking countries’ responsibilities

Returning to the CBDR principle, informed by these empirical data, we understand the complexity of the aim of determining “differentiated responsibilities”. While economists often link differences in CO₂ emissions across countries with per capita income, many other factors actually play a major role, including geographical location, availability of renewable energy sources, historical events, implemented policies, etc. Arguably it would be necessary to take all those factors into account but this would raise huge methodological challenges.

However, several approaches may be used to calculate GHG emissions. The fact that they lead to distinct countries’ profiles implies that the choice of the approach would play an important role in the debates and negotiations, even if it is apparently technical. First, most methods consider only CO₂ emissions, leaving out non-CO₂ emissions of greenhouse gases and land-use emissions. This benefits for instance countries with high emissions from deforestation such as Brazil. Second, the responsibility of emissions are attributed to states where these emissions occur, overlooking the fact that part of them is used for products that are exported to other countries for the benefit of consumers in other states.

More generally, different criteria can be applied as in the examples showed in the tables above: it is possible to consider a country’s emissions for a specific year, or a time period; it is also possible to consider the total emissions for a country or per capita emissions instead, or the growth rate of the emissions. It is also conceivable to measure the carbon intensity of GDP (relation between CO₂ emissions and GDP) – a factor that often advantages OECD countries. These different methods answer different questions and lead to (very) different rankings of emitters among different states.

For example, China is by far the biggest polluter today based on its total amount of emissions, while the United States is historically the most important one (accumulation of CO₂ in the atmosphere) and Qatar takes the lead if per capita emissions are considered.
A recent study quantifies countries’ contributions to cumulative GHG emissions, and shows that even for historical emissions, different accounting methods will also end up in highly different results. Factors identified in this study are: (a) technological progress: developing countries, coming later in the process, can benefit from more advanced technologies emitting less CO₂ for the same level of output than developed countries decades ago; (b) the time period: choosing a late start date, for example after 1990, increases largely the relative contributions of emerging economies and decreases the contributions of early emitters; (c) deducting emissions necessary for ‘basic needs’ (e.g. heat and cooking) by following the principle that countries cannot carry the same responsibility for those.

According to the CBDR principle, causal responsibility could apply for historical emissions of industrialized countries, which altogether are clearly more important than emissions of developing ones (although the global picture is rapidly changing in this regard, due to the dramatic increase of GHG emissions in emerging economies). Yet, some countries, mostly developing ones, have also argued that the system should incorporate clear compensation by the incorporation of historical emissions, which would involve financial flows. This vision of retributive justice has not gained the international arena, where distribution rules have been given so far the priority.

This line of argument is combined with the fact that the impacts of climate change will be felt with important differences among countries and regions in the world. As underlined by the IPCC, both impacts and adaptive capacities differ much between regions and societies. LDCs and Small Island Developing States (SIDS) are likely to be among the most challenged by climate change due both to their geographic location and their socioeconomic situation. The problem of unequal impacts and adaptation capacity to the detriment of poor developing countries has been a growing issue of negotiations and it constitutes a major issue in the context of international aid for development, as we will see in the next section.
4 Evolutions of ODA linked to adaptation to climate change, and more broadly considered

4.1 Adaptation aid is in practice limited

International financial assistance is typically provided through the official development aid (ODA) vectors. Among ODA, the part actually dedicated to environment issues is low. Based on a self-assessment made by OECD countries using the Rio markers\(^1\) for the period 2010–2011, only 19.7% of total ODA could be linked to the environment, to various degrees. Among the total of sector-allocable aid, around 6% directly targets the environment – which represents a bit more than US$ 5 billion in 2010\(^2\).

If we focus on climate change, we see that financing adaptation has become an important issue in international negotiations. Pledges of donor countries can be an argument to convince developing countries to participate in international agreements, meaning to contribute to the efforts towards mitigation\(^3\), at least through commitments on future emissions for those countries that are minor emitters. CBDR in climate policy context is located somewhere between consequentialist approaches for which states have a moral duty to take responsibility for the consequences of their actions, and non-consequentialist approaches where dealing with climate change should be based on the capacity of countries to pay in the name of solidarity. In this case, historically responsible countries tend to be the wealthy ones, which helped to translate those considerations in financing countries that have little responsibility for the problem (very low emissions) but great impacts to bear, or are vulnerable to them\(^4\). Yet, financing adaptation to climate change suffers major limits, similar to those encountered in ODA but more specific to this new field of activity.

First, the amounts are not sufficient compared to the needs. Moreover, the reality of budgets made available must be distinguished from the sums that are pledged. In Copenhagen (2009), developed countries jointly pledged to provide nearly US$30 billion in “fast start” finance in 2010–2012 to support mitigation and adaptation actions in developing countries. They also committed to mobilize US$100 billion a year by 2020 from a variety of sources\(^5\). In 2014, the United Nations Environment Program (UNEP) estimated that only for adaptation, those amounts were probably two to three times underestimated in the period after 2030 and plau-

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\(^1\) And more precisely DAC countries, which are the members of the Development Assistance Committee of the OECD, gathering the largest aid donors. The Rio markers are a tool used by the DAC to monitor external development finance targeting environmental objectives by reporting for each aid activity whether they target or not specific issues (being: biodiversity, climate change adaptation, climate change mitigation, desertification).

\(^2\) OECD, Aid in support of environment, 2013.


\(^5\) Antonio Gambini, Financing the fight against global warming: will the financial markets come to the South’s rescue? Point Sud. A CNCD-11.11.11 study, 2011, 5.
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possibly even more so towards 2050\textsuperscript{35}. However, only 18\% of the amounts provided between 2010 and 2012 (less than 7 billion dollars) would have targeted adaptation in developing countries. In addition, only a third of “fast start” finance is really new and additional, while more than 50\% is made up of loans and not grants\textsuperscript{36}. There are stark differences between the estimation of needs, pledges, and available money.

Second, some developing countries, especially LDCs, do not have the institutional resources to manage inflows and adequately implement the programs that are foreseen for adaptation to climate change. Projects, for instance led by NGOs, can make a difference locally, but the weakness of institutions and of capacity hinders the scale of implementation of broader national policies in poor countries\textsuperscript{37}.

In addition, it is very difficult to label the share of aid aimed specifically at climate change within the global set of development projects. (This is also one of the reason why the Rio Markers mentioned above are imprecise.) Indeed many strategies and activities planned to reduce vulnerability to climate change are very similar to actions used to address non-climate problems. Conversely, any adaptation action will achieve other objectives at the same time. Moreover, the complexity of the climate system makes it extremely hard to distinguish natural actual climate variability from anthropogenic forcing in concrete cases of impacts\textsuperscript{38}.

4.2 ODA AS A PARTIAL VECTOR OF EQUILIBRATION

As we suggest above, the way in which the fulfilling of responsibilities of rich countries towards poor ones impacted by climate change could be accomplished through aid to adaptation appears, at least at present, quite limited.

These limitations can be analyzed within the broader context of the evolution of ODA in general, and of its own limitations.

Globally ODA has a relatively decreasing share in international trade and financial flows. It represented 70\% of total North-South flows of finance in 1970 and only 13\% in 2011. This shows the growing role of trade and private financial flows, an evolution which may undermine some effects of policies conducted under ODA\textsuperscript{39}. This evolution influences also the distribution of finance flows between countries. Combining low scores with regard to GDP/inhabitant, economic growth, financial development and country openness, LDCs are unlikely to attract such private inflows. Their low economic growth and political instability make transaction appear insecure to private investors\textsuperscript{40}.

\begin{thebibliography}{10}
\bibitem{36} Gambini (note 34), 7.
\bibitem{39} Arnaud Zacharie, \textit{Mondialisation: qui gagne et qui perd? Essai sur l’économie politique du développement}, Le bord de l’eau/La Muette, 2013, 236.
\end{thebibliography}
Authors agree that ODA is mainly driven by political motivations, including ideological ones. The degree of compatibility between donors’ interests and development objectives of recipient countries is a main determinant of the impacts of cooperation policies on political objective within developing countries.

For some developing countries amongst the poorest, ODA is the main financial inflow with Foreign Direct Investment (FDI) and remittances sent home by migrants. These states can be completely dependent on ODA for public expenditure, which is another difficulty for the sustainability of the system and shows the dependency of governments in LDC’s to richer countries’ governments. Another concern is that donors’ interests may not be consistent with sustainable development objectives to be followed in host countries.

5. Technology Transfer and Different Standards

In the first two sections we have considered some points of articulation between the CBDR principle and the reality of emissions of greenhouse gases among different countries. In the third section we had a look on the limitation to use ODA, and especially for its application to adaptation to climate change. In this last section, we turn to another crucial element in international climate cooperation already mentioned in our introduction: the greater availability of technologies. We will see that if the CBDR principle is also relevant in this respect, other principles are used in combination, and that recent evolutions question the implementation of those principles.

5.1 Competition on Green Technologies

Technology development and transfer, aimed at mitigation of climate change and adaptation is rather important under the UNFCCC, which expressly mentions this objective in its article 4.7. While this article does not explicitly mean that technology transfer should be a way to achieve socioeconomic goals alongside with environmental objectives, it has been interpreted that way by a number of Parties. An important instrument in this regard is the Clean Development Mechanism (CDM), a part of the Kyoto Protocol. In terms of contribution in capital, technology and skills transfers towards developing countries, CDM has shown limited success. The majority of the projects has been implemented in emerging economies and contri-
butes little to environmental sustainability in poorer ones. We encounter again here some earlier points in our analysis: the differences between several types of countries within the “developing” countries group, and the difficulty to attract investments in poorer countries.

A more recent issue in the field of technology transfer is the competition between some OECD countries, especially the EU and the US, and emerging countries for the production and commercialization of green technologies. Since the early 90’s, the EU has considered that a major benefit of its sustainable development goals for its economy would be the development of green technologies within the Member States, as a possible source of growth for its industries and services. However, these last years, in some sectors like the photovoltaic for instance, the import of products from China has been massive, up to an unanticipated level and to the detriment of domestic industry. A similar evolution has happened in the US. Photovoltaic is not the only case of competition in green technologies, and some authors speak here of a “next generation of environmental conflicts”, linked to the rise of environmental policies across different states in the world.

Acknowledging this evolution, we see that the principle of technology transfer from developed to developing countries to mitigate climate change and to adapt is scrutinized by states during the negotiations under the UNFCCC in order to take into account its possible consequences on industrial competition between historically industrialized countries and emerging economies. At a global level, it is not an unfavorable evolution that more affordable green technologies would be produced in countries that use them within their current industrialization, on the contrary. Nor does this evolution hinder the need to transfer relevant technologies and capacity to LDCs. However, we see that the principle of technology transfer has to take place in a more competitive context than before.

5.2 New Implications of the Different Standards Principle

We can consider this evolution more broadly through the lenses of another important principle included in the Rio Declaration, allowing for different standards in environment, between developed and developing countries. We first explain this principle and its initial background, and will then see how the recent evolutions described in this paper might shed another light on it.

The principle 11 of the Rio Declaration reads as such: “States shall enact effective environmental legislation. Environmental standards, management objectives

48 In 2012 the EU, Japan and the US set up a case at the World Trade Organization (WTO) over China’s export restrictions on rare earth minerals covered under environmental concerns. Same year, Japan and EU had oral arguments over Ontario’s feed-in tariffs for renewable energy (which would be found later by WTO as being illegal) and US accused China to practice unfairly dumping with solar panels in their market while China was pointing US’s rebates for renewable energy installation (Mark Wu / James Salzman, The Next Generation of Environmental Conflicts: The rise of Green Industrial Policy, *Northwestern University Law Review* 108/2 (2014), 401–474). Those are just but a few examples.
and priorities should reflect the environmental and development context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries”49. This principle can be applied to national standards (for example in the Rio Declaration) or international standards (for example in Agenda 21, paragraph 39.350). Importantly, the UNFCCC mentions it as well in the acknowledgments, using the exact same words.

As we see, the Different Standards (DS) principle means in this context applying different level of harshness for environmental protection to developed and developing countries. It can involve two kinds of application: delayed implementation51, or less stringent commitments.

Theoretically, this principle can be interpreted as an application of weak sustainability. The distinction between weak and strong sustainability is developed by ecological economists when considering sustainable development52. In strong sustainability, some parts of the choices are not negotiable: for instance some levels of environmental protection are required at any costs. In weak sustainability, substitutions are possible between a gain in some aspects (generally in the economy) and loss in others (generally the environment) if the trade-off is positive between this gain and loss. Although the measurability and the very principle of this trade-off can be highly contested53, weak sustainability is the overall framework of nearly all sustainable development policies. In the principle presented above, weak sustainability is reflected in the idea that a country might “lose” on environmental standards, but instead would “win” in economic development, or competitiveness.

As a matter of fact, numerous UN documents defend conceptions of a “right to development” which are not necessarily compatible with the objectives of sustainability and of social justice54. On the other side, the DS principle favors the attractiveness for investors who may produce with lower environmental standards. This possibility is used by some transnational corporations, which initially belong to OECD countries. Moreover, non-tariff barriers based on higher standards of environmental protection are sometimes used by richer countries with the objective of protecting their domestic industry55. So, even if it could be detrimental for environmental protection, and in the case we analyze, to climate change, we see that this

49 UNCED (note 10).
50 United Nations Conference on Environment and Development (UNCED), Agenda 21, 1992
51 This first type is indeed typical of international economic agreements. It especially appears in many WTO agreements. To name some major ones: the General Agreement on Trade in Services (GATS), the Agreement on Agriculture, the Agreement on Subsidies and Countervailing Measures, the Agreement on Technical Barriers to trade.
52 Zaccai (note 4), 82.
55 A few of those cases were discussed at the WTO justice court to find out if those non-tariff barriers were covered by the Article XX GATT or if it was a form of green protectionism. Article XX GATT allows some trade restrictions if they pursue specific goals, including “to protect human, animal or plant life or health”. Positions of the Court were not always consistent and most cases turned out to be rather sensitive (Olivier De Schutter, Le Commerce au Service du Développement durable: Associer le Commerce aux Normes environnementales et aux Droits du Travail, 2003).
principle has had a number of justifications and utilizations both in the North and the South.

However, at least three evolutions are challenging the context sketched above. First, the seriousness of climate change as a threat is hardly compatible with major emerging countries striving for lower standards on green technologies, and this is an evolution that is visible during the last decade. Second, as we mentioned above, a number of greener products, traded internationally, have been manufactured increasingly in developing countries. This is a different situation than at the time of the Rio Conference where this principle was promulgated. Third, and quite ironically here, it can be seen that in climate negotiations, some developed countries demand that developing countries decarbonize their pathway to growth in a much quicker way than industrialized countries did in historical times. In this perspective, environmental standards would be more stringent for developing countries than for the developed ones, in opposition to the letter of the principle of different standards in the Rio Declaration. This is a perspective that developing countries are of course reluctant to adopt during the negotiations. More precisely, we encounter here a possible link with implications of the CBDR seen above. Indeed, the discussion on emissions standards for developing countries may be linked to different issues such as the negotiation of emission standards for developed countries, different forms of finance transfers, or to technology transfers.

6. ConcluSion

The architecture of sustainable development built in Rio reflects a dichotomy between the so-called developed and developing countries. We have seen that shaping the environmental law regime, at least in the field of climate change with this traditional North-South comprehension does not mirror present realities in a number of ways. This perspective is challenged by the power of emerging economies and their recent contributions to GHG emissions, by the lack of aid effectiveness including in environment, by new unforeseen implications of general principles. Principles which are the basis of Treaties act altogether, not separately, in a world characterized by diverse and changing societies. This leads to reconsider agreements in a more iterative way of thinking. The case of different standards for instance illustrates that a principle may have important connections that were overlooked in the original context of its formulation (in this case trade competition), but ended up influencing its actual applications and should therefore be included increasingly in the negotiations in order for them to be effective.

If treating responsibilities and reaching justice in climate change policy is a very difficult objective, the urgency of dealing with it calls for settlements over mitigation and adaptation that are much stronger than current ones. As we have seen, an issue yet to be resolved is the development of criteria and categories to better reflect the broad range of state players at international level, especially in terms of growth and power. Considering equity and justice leads to a variety of ways to integrate this differentiation. Capability and responsibility, both for past and present, are major

factors to discuss in order to define obligations and create effective differentiation. Defining the differentiation model will be a key issue of the next climate summit in Paris of December 2015. This may contribute to a new understanding of the principles discussed in this paper.

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