

# Global environmental challenges and the EU

Ludwig Krämer<sup>1</sup>



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**Abstract** The contribution discusses four of the five main global challenges to the environment, namely climate change, the loss of biodiversity, the omnipresence of chemicals, and the management of resources. For reasons of space, it will not discuss the fifth and most important environmental challenge, which is the eradication of poverty. For each of the remaining challenges, the contribution describes the EU approach, points out the successes and deficiencies of that approach and the institutional difficulty of the EU taking new initiatives at international level in order to better protect the environment.

**Keywords** Climate change · Biodiversity · Resource management · Chemicals · EU legislation

## 1 Introduction

At the beginning of the twenty-first century, there are numerous environmental challenges of a global nature and opinions certainly differ as to which are the most relevant ones. For example, the World Economic Forum identified the water crisis, the failure of climate change mitigation and adaptation and the greater incidence of extreme weather events as the three most relevant environmental challenges; however, this list referred to the year 2014 only.<sup>1</sup> This author considers that global warming, the loss of biodiversity, the omnipresence of chemicals, resource management and

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<sup>1</sup>World Economic Forum: Global risks 2014: understanding systemic risks in a changing global environment. Geneva 2014.

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✉ Prof. Dr. L. Krämer  
[kramer.ludwig@skynet.be](mailto:kramer.ludwig@skynet.be)

<sup>1</sup> Madrid, Spain

the fight against poverty are the most important challenges of the present. This selection is arbitrary: nuclear accidents or military activities with biological or other new weapons might confront the planet with challenges that are at present not taken seriously into consideration; water scarcity and its consequences for agriculture might create huge problems for specific areas; genetic manipulation or microbiological developments might generate new threats. Yet, as a choice delimiting the topics addressed must be made, this contribution will concentrate on four of the five challenges just mentioned.

This contribution will not deal with the fight against poverty, although globally this appears to be the biggest threat to the environment. However, a discussion of EU measures taken in order to eradicate poverty at global level could not remain limited to EU measures. Rather the policies, strategies and measures of EU Member States would also have to be included, as foreign policy—of which development aid and the fight against poverty are parts of—has very largely remained in the hands of the Member States, even though the Treaty on European Union (TEU) provides for a ‘common foreign and security policy’ of the EU. Furthermore, EU and national policies which aim at the eradication of poverty go far beyond environmental aspects; they also include trade, security, industrial, agricultural, fisheries and other policies; and a presentation of these different policies would require much more space than is available for this contribution. For example, EU agricultural policy, which gives third country agricultural products access to the EU market only to a very limited extent, is considered by many as impeding economic progress in developing countries. Others, however, underline the social and economic aspects of the EU agricultural policy for EU farmers and consumers and find some justification for the present EU policy. It is impossible to present and weigh the pros and cons of the different arguments in just a few lines.

Therefore, it will have to be sufficient to point out that the EU’s external action has as one objective, among others, ‘[fostering] the sustainable economic, social and environmental development of developing countries, with the primary aim of eradicating poverty’.<sup>2</sup> The EU budget for 2016 provides for ‘international cooperation and development’ expenses of about three billion euro.<sup>3</sup> However, the budget chapters for agriculture, transport, research, maritime affairs, migration, foreign policy, environment, neighbourhood negotiations humanitarian aid, energy, climate action, justice and consumers also provide for expenditures which directly or indirectly benefit developing countries. Concentrating on development measures alone would therefore give a wrong picture.

## 2 Climate change

The international discussion on global warming and climate change began in the mid-1980s. As the United Kingdom participated prominently in this discussion and supported the concept of anthropogenic greenhouse gas emissions being mainly responsible for global warming, the United Kingdom Government was, right from the

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<sup>2</sup>Article 21(2)(d) TEU. The eradication of poverty is also mentioned in Article 3(5) TEU.

<sup>3</sup>OJ 2016, L 48/1 Section 21.

beginning, favourable to EU measures in order to stop global warming. This attitude facilitated the EU policy according to which it was decided, already in 1990, to stabilise CO<sub>2</sub> emissions by the year 2000. In 1994, the EU adhered to the UN Climate Change Convention and signed, in 1997, the Kyoto Protocol. When the USA withdrew its signature under this Protocol, the EU declared publicly that the Kyoto Protocol ‘was not dead’ and engaged in strong international diplomatic activity in order to ensure this Protocol entered into force. These efforts succeeded in 2005.

The EU, which ratified the Kyoto Protocol in 2002,<sup>4</sup> complied with the commitment to reduce its greenhouse gas emissions by eight per cent in 2012, compared to 1990 levels. It used the provision in the Kyoto Protocol which allowed several States to comply jointly with their reduction obligations and adopted a burden-sharing decision which differentiated the reduction obligations of Member States according to a rather opaque policy process.<sup>5</sup> In 2009, another burden sharing decision was adopted, fixing the obligations of EU Member States up to 2020.<sup>6</sup> The EU also concluded the Doha amendment, undertaking to reduce its greenhouse gas emissions by 2020 by twenty per cent.<sup>7</sup> By 2012, the reduction of greenhouse gas emissions had reached 19.2 per cent.<sup>8</sup>

Furthermore, the EU actively promoted the conclusion of a new international agreement on climate change and signed, in April 2016, the Paris Agreement on climate change. In anticipation of that Agreement, the EU committed itself to reduce its greenhouse gas emissions by 2030 by 40 per cent, compared to 1990 levels, to ensure a share of renewable energies in the overall consumption of energy of 27 per cent and also to improve its energy efficiency by 27 per cent.<sup>9</sup>

The objective of limiting global warming to 2°C beyond pre-industrial levels has also been inserted, since the mid-1990s, in several policy statements of the European Council and also, progressively, in legislative texts. Since 2009, the Treaty on the Functioning of the European Union (TFEU) which is, together with the TEU a sort of constitution of the EU, establishes as one of the objectives of EU environmental policy, ‘combating climate change’ (Article 191 TFEU). Article 194 TFEU, also inserted in 2009, asks the EU to promote ‘energy saving and the development of new and renewable sources of energy’. Legislative measures in both the environmental and the energy sector are normally adopted by majority decisions and are then binding on all EU Member States. However, when a Member State’s choice as between

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<sup>4</sup>Decision 2002/358, OJ 2002, L 130/1.

<sup>5</sup>Decision 2002/358 (fn. 4, above).

<sup>6</sup>Decision 406/2009, OJ 2009, L 140/136.

<sup>7</sup>Decision 2015/146, OJ 2015, L 26/1.

<sup>8</sup>Commission COM (2014) 689.

<sup>9</sup>European Council, meeting of 23–24 October 2014, document EUCO 169/14. See also European Commission: A framework strategy for a resilient energy Union with a forward-looking climate change policy, COM (2015) 80. The European Council, consisting of the Heads of States and Governments of the 28 EU Member States, is the highest political institution of the EU. Its decisions are of political, not of legal nature.

different energy sources or regarding the structure of its energy supply is affected or when ecotax decisions are to be taken, EU decisions require unanimity.<sup>10</sup>

Since 1988, the EU recommended Member States make better use of renewable sources of energy. It supported such initiatives with (modest) financial means. In 2001, an EU Directive<sup>11</sup> fixed as objectives a 12 per cent share of renewable energies in total EU energy consumption, and a 22 per cent share in total electricity consumption. Non-binding targets for electricity consumption were fixed for each Member State. Another Directive of 2003 tried to stimulate the use of biofuels in the transport sector.<sup>12</sup>

Both Directives were replaced by a 2009 Directive<sup>13</sup> which requested Member States to reach a share of renewable energies in the gross final energy consumption of 20 per cent by 2020; no targets for electricity consumption were fixed. Furthermore, each Member State had to cover, by 2020, its energy consumption in the transport sector to the extent of at least 10 per cent with renewable energies. Member States were requested to adopt binding action plans with annual timetables and submit them to the Commission; when progress was not sufficient, Member States had to amend their action plans. They had to report annually on progress achieved. The Directive also contained provisions on sustainability criteria for biofuels and bioliquids, produced within and outside the EU. The Commission was obliged to report extensively on the implementation of the Directive, including on the question of whether third countries which supplied biofuels to the EU complied with the sustainability criteria and respected specific international labour and environmental agreements.

The 2015 progress report by the Commission stated that the share of renewable energies in the EU in 2014 was 15.3% and that it would be possible to reach the 20% share by 2020.<sup>14</sup> The share of renewable energy in transport was 5.7% in 2014, and the Commission raised doubts, whether the 10% target for 2020 could be reached.<sup>15</sup> The discussion on the large-scale use of biofuels became controversial in the EU. The report was silent on third countries' compliance with labour and biodiversity agreements and on respecting the sustainability criteria.<sup>16</sup>

Also in the energy efficiency sector, the EU started financially supporting voluntary national measures. A first Directive in 1993 asked Member States to establish programmes to improve energy efficiency and to report on their implementation.<sup>17</sup>

<sup>10</sup>See Articles 192(2)(c) and 194(2) TFEU. Until 2016, all EU climate-change related legislation was adopted by majority decisions.

<sup>11</sup>Directive 2001/77, OJ 2001, L 283/33. Under EU law, directives address the Member States and are binding as to the result to be reached, see Article 288 TFEU.

<sup>12</sup>Directive 2003/30, OJ 2003, L 123/42.

<sup>13</sup>Directive 2009/28, OJ 2009, L 140/16.

<sup>14</sup>Commission, COM (2015) 293.

<sup>15</sup>Commission, COM (2015) 293. Difficulties to reach the target for 2020 existed, according to the Commission, in France, Malta, Luxembourg, Netherlands, United Kingdom, Belgium, Spain, Hungary and Poland.

<sup>16</sup>The only reference to this problem was made in a progress report of 2013 (COM(2013)75, p. 12) where it was stated: 'Whilst most non-EU countries have ratified the fundamental conventions, enforcement is lower than in the EU or in the US which has not ratified many such conventions'.

<sup>17</sup>Directive 93/76, OJ 1003, L 237/28.

This was replaced by a 2006 Directive which asked Member States to establish binding action plans for energy efficiency, with the objective of reaching, by 2015, an improvement in energy efficiency of nine per cent.<sup>18</sup> Another 2005 Directive<sup>19</sup> constituted the framework for binding measures on the energy consumption of products, which led to a large number of binding energy efficiency standards for products. A 2002 Directive, replaced in 2010, aimed at the improvement of energy efficiency for (new and renovated) buildings.<sup>20</sup>

A 2012 Directive asked Member States to set an indicative energy efficiency target in order to reach the EU objective of improving energy efficiency by 20 per cent until 2020.<sup>21</sup> It also established provisions on public procurement, building renovation, energy audits, metering, billing information and a number of other measures to promote energy efficiency. Member States had to adopt national energy efficiency action plans and report annually to the Commission. Specific sanctions in the event of non-compliance were not foreseen.

The Commission's 2015 progress report indicated that Member State measures added up to up to 17.6 per cent of an energy efficiency improvement by 2020<sup>22</sup>; and the Commission expressed the view that recent measures adopted by some States would permit reaching the envisaged target.

It is remarkable that both in respect of the measures on energy saving and those on energy efficiency, no enforcement measures were taken against Member States; the achievements were reached via an obligation to adopt and implement action plans and to report annually to the Commission (and to other Member States). This approach of cooperative discussions, suggestions for amendments of national action plans and learning from examples in other Member States was apparently relatively successful in achieving the political results which had been set.

In 2003, the EU adopted a Directive on emission allowance trading with greenhouse gases which concerned about 45 per cent of all greenhouse gas emissions in the EU.<sup>23</sup> Companies had to buy emission allowances. Where they did not need them, they could sell them on the market. The Directive sought to incite companies to invest in clean technologies instead of acquiring expensive emission allowances. As, however, the Member States which were responsible for attributing the allowances, were rather generous in their attributions, too many allowances were issued. This led to low prices for the allowances and thus did not constitute an incentive to invest in clean technologies. Attempts to reduce the quantity of emission allowances were not yet very effective: as no minimum price for CO<sub>2</sub> was fixed, the market does not function well.

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<sup>18</sup>Directive 2006/32, OJ 2006, L 114/64.

<sup>19</sup>Directive 2005/32, OJ 2005, L 191/29; this Directive was replaced by Directive 2009/125, OJ 2009, L 285/10.

<sup>20</sup>Directive 2010/31 on the energy performance of buildings, OJ 2010, L 153/13; this Directive replaced Directive 2002/91, OJ 2003, L 1/65.

<sup>21</sup>Directive 2012/27, OJ 2012, L 315/1.

<sup>22</sup>Commission, COM (2015) 574.

<sup>23</sup>Directive 2003/87, OJ 2003, L 275/32.

Other legislative measures of the EU concerned reporting requirements for CO<sub>2</sub>,<sup>24</sup> the CO<sub>2</sub> emissions of cars,<sup>25</sup> the capture and storage of CO<sub>2</sub>,<sup>26</sup> measures to reduce the landfilling of waste,<sup>27</sup> the labelling of car CO<sub>2</sub> emissions,<sup>28</sup> fluorinated gases in appliances<sup>29</sup> and numerous measures in the areas of agriculture, environment and research.

Overall, the EU reached, between 1990 and 2012, a reduction of greenhouse gas emissions by 19.2 per cent, while at the same time its gross domestic product increased by 45 per cent.<sup>30</sup> At the same time, global greenhouse gas emissions increased from 22.7 billion tons to 34.5 billion tons—thus by some 50 per cent.<sup>31</sup>

An essential part of combating climate change is the transfer of financial resources from developed to developing countries.<sup>32</sup> In this regard, the EU is relatively passive. The EU Member States prefer to give financial support to developing countries themselves, rather than via the EU. For example, the Agreement between the EU and 78 States of Africa, the Caribbeans and Asia (ACP-countries) provides for a sum of 31.5 billion euro which is to be made available to these countries between 2014 and 2020, with one of the possible activities which may be financed being climate change measures.<sup>33</sup> 29 billion euro are being made available by the Member States, and only the remainder comes from the EU.

The EU budget for 2016 foresees EU contributions of some 800.000 euro to international climate change conventions.<sup>34</sup> Furthermore, some 250 million euro have been earmarked for measures on climate change, environment and sustainable energy in non-ACP developing countries.<sup>35</sup> The EU adopted provisions concerning the clean development mechanism under the Kyoto Protocol which favours common actions between developed and developing countries to reduce greenhouse gases.<sup>36</sup> However, the implementation is again in the hands of the Member States'; no cumulative data for the overall EU measures under this mechanism are available.

<sup>24</sup>Decision 525/2013, OJ 2013, L 165 p. 13; this Decision replaced Decision 280/2004, OJ 2004, L 49/1.

<sup>25</sup>Regulation 443/2009, OJ 2009, L 140 p. 1 (passenger cars); Regulation 510/2011, OJ 2011, L 145/1 (light duty vehicles). No limit value was fixed for trucks.

<sup>26</sup>Directive 1999/31, OJ 1999, L 182/1.

<sup>27</sup>Directive 2009/31, OJ 2009, L 140/114.

<sup>28</sup>Directive 1999/94, OJ 2000, L 12/16.

<sup>29</sup>Regulation 517/2014, OJ 2014, L 150/195; this Regulation replaced Regulation 842/2006, OJ 2006, L 161/1.

<sup>30</sup>Commission, COM (2014) 689. The UN 'Greenhouse gas inventory data for the period 1990–2013' ([unfccc.int/resource/docs/2015/sbi/eng/21.pdf](http://unfccc.int/resource/docs/2015/sbi/eng/21.pdf)) does not contain data for the EU, but only for its Member States separately.

<sup>31</sup>Netherlands Environment Agency, Trends in global CO<sub>2</sub> emissions, 2013 Report, The Hague 2013.

<sup>32</sup>See UN Framework Convention on Climate Change, Article 4(3)(c); Paris Agreement, Art. 9.

<sup>33</sup>See Decision 1/2013 OJ 2013, L 173/67.

<sup>34</sup>EU Budget for 2016, OJ 2016, L 48/1, Section 340251.

<sup>35</sup>EU budget (fn. 34, above) Sections 21020701 and 21020702. The actual payments in previous years were much lower which seems to indicate that developing countries are not too eager to request the financing of climate change and sustainable energy measures.

<sup>36</sup>Directive 2004/101, OJ 2004, L 338/18.

The Commission declared that the EU had undertaken, in the context of the EU Multiannual Financial Framework 2014–2020, to direct 20 per cent of its overall budget to climate-relevant projects and policies.<sup>37</sup> This policy commitment—which is not laid down in the Multiannual Financial Framework itself<sup>38</sup>—would mean that up to 2020, about 14 billion euro would be spent annually on climate-related projects in developing countries.<sup>39</sup> In contrast, the considerable State aid for fossil fuels which is granted by the EU and by its Member States<sup>40</sup> and which the Commission itself qualified as the ‘biggest obstacle to innovation in clean technology’<sup>41</sup> has not been tackled yet by the EU.<sup>42</sup>

Following the adoption of the Paris Agreement, the Commission announced that it would submit legislative proposals for putting into legal form the policy commitments of the European Council for 2030, which would include ratifying the Agreement, a new effort-sharing decision extending until 2030, proposals on land use, land-use change and forestry (LULUCF), and on a reliable and transparent governance mechanism streamlining planning and reporting requirements, and the revision of legislation on energy efficiency and renewables.<sup>43</sup> It did not announce any specific measure to approach the 1.5 °C target of the Paris Agreement.

In conclusion, the EU fully complied with its commitments under the Kyoto Protocol and is on track to comply with its commitments under the Doha Protocol. It started reducing further greenhouse gas emissions by 2030. Thus, the European Commission is right in praising EU’s ‘international leadership and climate diplomacy.’<sup>44</sup> The EU achieved more than comparable developed countries—the USA, Canada, Japan or Australia—could claim. The big problem is, whether these measures are sufficient. A Dutch court recently found that the EU did not do enough to bring its greenhouse gas emissions down<sup>45</sup>; such arguments appear to be well founded, as already in 2007, the EU offered to reduce its greenhouse gas emissions under certain conditions by 30 per cent by 2020.<sup>46</sup> Also with regard to developing countries, EU diplomacy might be able to do more than making financial resources available.

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<sup>37</sup>Commission, Communication ‘The road from Paris’, COM (2016) 110, p. 8.

<sup>38</sup>Regulation 1311/2013 laying down the multiannual financial framework for the years 2014–2020, OJ 2013, L 347/884.

<sup>39</sup>Commission (fn. 37, above), p. 8.

<sup>40</sup>State aid to fossil fuels by the EU and Member States is estimated at 81 billion euro per year, Commission (Ecofys) Subsidies and costs of EU energy, 2014.

<sup>41</sup>Commission (fn. 37, above), p. 7.

<sup>42</sup>See, however, Decision 2010/787 on state aid to facilitate the closure of uncompetitive coal mines, OJ 2010, L 336/24. This Decision provides that state aid to coal mines shall stop on 31 December 2018. Whether this Decision will be fully applied, is doubtful. Germany has signalled already that, having decided to stop nuclear energy production, it could not, at the same time, stop coal mining. And the Government in Poland which came to power in 2015, intends to heavily support national coal production.

<sup>43</sup>Commission (fn. 13, above) p. 9.

<sup>44</sup>Commission (fn. 14, above), p. 2.

<sup>45</sup>*Rechtbank Den Haag*, Case C/09/456689/HA ZA-13-1396, *Urgenda*, Judgment of 24 June 2015, ECLI:NL:RBDHA:2015:7196.

<sup>46</sup>See Decision 406/2009 (fn. 6, above), Recital 3: ‘the European Council of March 2007 endorsed a Community objective of a 30% reduction of greenhouse gas emissions by 2020 compared to 1990 ... provided that other developed countries commit themselves to comparable emission reductions and economically

### 3 Loss of biodiversity

The loss of biodiversity is a generally-recognised global phenomenon. The Convention on Biological Diversity noted in 1992 that ‘biological diversity is being significantly reduced by human activities.’<sup>47</sup> The Global Biodiversity Outlooks 4 and 5, elaborated in 2010 and 2015 under the auspices of the United Nations Programme for the Environment (UNEP), demonstrated that the loss of biodiversity was continuing at global level and had not come to a standstill<sup>48</sup>; it identified as the major causes for this loss, habitat loss and degradation, climate change, excessive nutritional loads and other forms of pollution, over-exploitation and unsustainable use, as well as invasive alien species.

The European Union is a wealthy, densely populated area with a high level of economic and leisure activities. Biodiversity is thus under constant pressure and though the EU adopted numerous measures on biodiversity conservation, success is limited.

The EU has acceded to international conventions on migratory species, biological diversity, the protection of the Alps, the conservation of Antarctic marine biological resources, the combating of desertification, the conservation of European wildlife and natural habitats, trade in endangered species and African-Eurasian waterbirds. However, monitoring and enforcement of international conventions does not take place in practice, unless the EU has adopted specific EU legislation—a directive or a regulation—to transpose the provisions of the respective convention into EU law. With the exception of the Convention on International Trade in Endangered Species of Fauna and Flora (CITES Convention), such legislation has not been adopted by the EU for any of the conventions just mentioned, so that these agreements are not monitored in EU territory.

There is no comprehensive EU legislation on the conservation of biodiversity. The EU has not adopted legislation on soil protection either: such legislation exists only in some Member States. The EU has not adopted legislation on the protection of the landscape. In 2014, it adopted legislation to fight invasive alien species which has, however, not yet become operational.<sup>49</sup> As regards legislation on biodiversity conservation, the EU relies almost entirely on the Directive on the conservation of wild birds (Birds Directive)<sup>50</sup> which protects all wild living birds in Europe and grants special protection to some 190 threatened species; and on the Directive on the conservation of natural habitats and species of wild fauna and flora (Habitats Directive)<sup>51</sup> which ensures the conservation of rare, threatened or endemic species, including about 450 animals and 500 plants. Some 200 rare and characteristic habitat types are also targeted for conservation.

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more advanced developing countries commit themselves to contributing adequately according to their responsibilities and capabilities’.

<sup>47</sup>Convention on Biological Diversity, Recital 6.

<sup>48</sup>UNEP, Global Environmental Outlook 3 (2010); Global Environmental Outlook 4 (2015).

<sup>49</sup>Regulation 1143/2014, OJ 2014, L 317/35.

<sup>50</sup>Directive 2009/147 on the conservation of wild birds, OJ 2010, L 20 p. 7; this Directive replaced Directive 79/409, OJ 1979, L 103/1 on the same subject.

<sup>51</sup>Directive 92/43 on the conservation of natural habitats and of wild fauna and flora, OJ 1992 L 206/7.



Under both Directives, the EU created a 'Natura 2000' network which groups together at present about 28,000 natural land and marine habitats with around one million km<sup>2</sup> surface. Member States identified the habitats that needed protection, which the Commission then included in lists of habitats of EU interest. Following that, the Member States had to formally protect the habitat and provide for a management plan, in order to ensure a favourable conservation status.

Since the adoption of the first Birds Directive in 1979, the EU has undertaken a very considerable number of measures in order to protect biological diversity within and outside the EU. A good account of these measures, which cannot be enumerated here in detail, is found in the five reports which the EU sent, between 1998 and 2014, to the Secretariat of the Convention on Biological Diversity,<sup>52</sup> and which may be completed by the national reports which the EU Member States sent to the Secretariat.

In 1998, the EU adopted a biodiversity strategy<sup>53</sup> which envisaged four principal areas of activity, the conservation and sustainable use of biological resources, the sharing of genetic resources, research, control and exchange of information and education, training and sensitivisation. The objectives of the strategy were to be reached within the context of ongoing EU activities, but to a large extent also by Member States. In 2001, the Commission adopted a Biodiversity Action Plan, consisting of four sections: agriculture, the conservation of natural resources, fisheries and economic development cooperation.<sup>54</sup> Attempts to create, within the Commission, an integrated administrative structure so as to have environmental and nature conservation requirements considered in the activities of the other EU policies (*i.e.*, agriculture, fisheries *etc.*),<sup>55</sup> failed, however, so that the Action Plan did not change administrative and political reality. Following a policy commitment by the European Council, the Decision on the sixth EU environment action programme laid down, in a legally binding form, the objective of 'halting biodiversity decline with the aim of reaching this objective by 2010.'<sup>56</sup> Subsequently, the Commission submitted an action plan for halting the loss of biodiversity.<sup>57</sup> It identified a number of measures, in order to reach the deadline of 2010 to halt biodiversity decline, though most of these measures were to be taken by the Member States individually, not by the EU itself. When it turned out, in 2010, that the loss of biodiversity had not stopped, the Commission adopted a new strategy, on the basis of which the Council concluded that by 2020 the loss of biodiversity should be halted and by 2050, EU biodiversity and the ecosystem services<sup>58</sup> which it provided, would be fully protected.<sup>59</sup> No specific measures

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<sup>52</sup>Convention on Biological Diversity, First report of the European Union to the Convention on Biological Diversity, 1998; 2nd EU Report 2002; 3rd EU Report 2005; 4th EU Report 2009; 5th EU Report 2014.

<sup>53</sup>Commission, COM (1998) 42.

<sup>54</sup>Commission, COM (2001) 162.

<sup>55</sup>See on these attempts the first EU Report (fn. 52, above), p. 22.

<sup>56</sup>Decision 2002/1600, OJ 2002, L 242/1, Article 6(1).

<sup>57</sup>Commission, COM (2006) 216.

<sup>58</sup>Ecosystem services are the benefits which humans obtain, for free, from functioning ecosystems, such as forests, water systems, grassland, mountains etc.

<sup>59</sup>Commission, COM (2011) 244; Council Document 7536/10 of 16 March 2010; see also Commission, COM (2010)4 and COM (2010) 548.

were suggested. An interim assessment in 2015<sup>60</sup> showed that the 2020 target would probably not be reached either.

In 2010, the European Environment Agency published a first 'EU biodiversity baseline' on the state of biodiversity in the EU.<sup>61</sup> It found that—twenty years after the setting up of the Natura 2000 network—17 per cent of the habitats of that network had a favourable conservation status as requested by Directive 92/43, 65 per cent had an unfavourable conservation status and for 18 per cent the status was unknown. As regards species, 17 per cent had a favourable conservation status, 52 per cent an unfavourable status, and for 31 per cent the status was unknown. 25 per cent of EU marine mammals, 15 per cent of terrestrial mammals, 12 per cent of birds, 22 per cent of amphibians, 22 per cent of reptiles, 16 per cent of dragonflies, and 7 per cent of butterflies were threatened with extinction. The principal pressure on habitats came from agriculture which led, together with other pressures, to fragmentation, degradation and destruction due to land-use change: EU 'ecosystems are literally cut to pieces by urban sprawl, rapidly expanding transport infrastructure and energy networks'.<sup>62</sup>

The Commission indicated that in 2012, only 58 per cent of the Natura 2000 habitats had management plans in operation or in development, that 30 per cent of all species were threatened by over-exploitation of forests, oceans, rivers, lakes and soils, and a further 26 per cent by pesticides and fertilizers; between 1990 and 2006, bird populations in the EU declined by 10 per cent (farmland birds by 25 per cent, forest birds by 18 per cent).<sup>63</sup> Between 1961 and 2003, the EU ecological footprint increased from three to four hectares per person.<sup>64</sup>

These data do not show that the EU has successfully responded to the global challenge of biodiversity loss. It is not without reason that EU agriculture and fisheries activities are mainly blamed for this situation.<sup>65</sup>

Internationally, the EU adhered to the Convention on Biological Diversity, as well as to the Cartagena and the Nagoya Protocol. It adopted a regulation to ensure that timber exporting countries adopt a licensing scheme<sup>66</sup> and tried to conclude partnership agreements with timber exporting countries to make this legislation operational.<sup>67</sup> It also adopted a regulation to prohibit the import of illegally harvested

<sup>60</sup>Commission, COM (2015) 478; see also European Environment Agency: State of nature in Europe. Copenhagen 2015, p. 141 ff.

<sup>61</sup>European Environment Agency (EEA), EU 2010 biodiversity baseline (adapted to the MAES typology). Copenhagen 2010.

<sup>62</sup>EEA (fn. 61, above), pp. 88, 14, 19 and 21. The data do not include data from Bulgaria, Romania and Croatia.

<sup>63</sup>Commission, COM (2015) 478, p. 6; 4th EU Report to the Biodiversity Convention (2009), p. 3; 5th EU Report to the Biodiversity Convention (2014) p. 10 and p. 11.

<sup>64</sup>Commission, 5th EU Report (fn. 63, 62, above), p. 38.

<sup>65</sup>Commission, 4th EU Report (fn. 52, above), p. 80.

<sup>66</sup>Regulation 2173/2005, OJ 2005, L 347/1.

<sup>67</sup>By March 2015, such agreements were concluded with Ghana, the Republic of Congo, Cameroon, Liberia, Central African Republic and Indonesia. Negotiations with about ten other countries are ongoing.

timber and timber products.<sup>68</sup> Long before the EU was allowed, in 2013, to adhere to the CITES Convention on trade in endangered species, it adopted EU legislation which aligned to that Convention and was even, in parts, more protective;<sup>69</sup> all decisions of the Conference of the Parties to the CITES Convention were transposed into EU legislation. This includes import bans on whales and whale products,<sup>70</sup> as well as on seals and seal products.<sup>71</sup>

The EU is by far the largest donor for biodiversity measures at international level. Between 2003 and 2006, the yearly external assistance for biodiversity—provided by the EU and EU Member States—totalled 1.5 billion, and was raised to 1.7 billion euro between 2006 and 2010;<sup>72</sup> since then, it certainly has not diminished. ‘Very few [developing] countries have identified biodiversity as a priority sector for cooperation in their country strategy papers. This is a major impediment to increasing EU funding for biodiversity in development cooperation.’<sup>73</sup>

In conclusion, despite the very considerable efforts undertaken by the EU and its Member States, EU measures have been insufficient to halt the decline of biodiversity within the EU and at global level.

#### 4 The omnipresence of chemicals

Chemicals, as substances or as products, are indispensable in modern life. Yet, they have a very considerable impact on human health and on the environment. While, in the preceding sections, climate change and loss of biological diversity were discussed as global environmental challenges, it should not be overlooked that the principal source of global warming is the emission of chemicals—in the form of greenhouse gases or ozone-depleting substances; and ‘agriculture’ as the main pressure on the natural environment in the EU ‘exercises’ this pressure to a large extent through the use of pesticides and fertilisers or the discharge of nitrates and other pollutants. According to the Commission, air pollution—principally nitrogen oxides (NO<sub>x</sub>) and fine particulate matters (PM<sub>10</sub> and PM<sub>2.5</sub>) cause more than 400,000 premature deaths per year in the EU.<sup>74</sup> Other forms of pollution of the air, of water and soil are less visible, but nonetheless dangerous to humans, animals and plants.

The EU does not have a consistent, coherent product policy. Article 191 TFEU states that environmental policy should be based on the principles of prevention and precaution, of the need to fight environmental impairment as a priority at source and of the polluter-pays-principle. In practice, however, these principles—with the exception of the precautionary principle—are not applied when the EU adopts legislation

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<sup>68</sup>Regulation 995/2010, OJ 2010, L 295/23.

<sup>69</sup>Regulation 338/97, OJ 1997, L 61/1; this Regulation replaced Regulation 3626/82 of 1982, OJ 192, L 384/1.

<sup>70</sup>Regulation 348/81, OJ 1981, L 39/1.

<sup>71</sup>Regulation 1007/2009, OJ 2009, L 286/36.

<sup>72</sup>Commission, 4th Report (fn. 52, above), p. 58; 5th EU Report (fn. 52, above), p. 37.

<sup>73</sup>Commission, 4th EU Report (fn. 52, above), p. 76.

<sup>74</sup>Commission, COM (2013) 718 p. 5.

in the area of free trade (implying free circulation) of goods and services within the EU, in agriculture, fisheries, State aid, transport or energy measures.

There has been no systematic EU attempt to eliminate chemical substances that are toxic, carcinogenic or mutagenic or otherwise dangerous to humans or to the environment, although there are numerous pieces of EU legislation which limit or prohibit the presence of some such substances, in particular heavy metals. Examples of such laws are those concerning cars and electrical-electronic products, toys, packaging material, batteries, and crystal glass. However, the elaboration or strengthening of each legislative measure is heavily contested by the specific vested interest groups which all too often leads to derogations, exceptions or compromises that are, from the point of view of human health or the environment, unsatisfactory. The general EU Directive on product safety refers to the safety of consumers, but not to the environment.<sup>75</sup>

An EU strategy to phase out cadmium to the extent possible, failed completely.<sup>76</sup> Restrictions on cadmium, lead, chromium and mercury are limited to very specific products or uses.<sup>77</sup> With the exception of lead, no concentration value (*i.e.*, quality objective) for the air was fixed;<sup>78</sup> for water such concentration values were fixed for cadmium, lead and mercury.<sup>79</sup> Enforcement of this legislation is frequently capable of being improved upon.

A number of pesticides were restricted in use or prohibited as a follow-up of the POP Convention on Persistent Organic Pollutants.<sup>80</sup> All active substances for pesticides and biocides need an EU authorisation which is, overall, generously granted.<sup>81</sup> An EU Directive on the sustainable use of pesticides<sup>82</sup> has remained general: it enabled Member States which wanted to limit the use of pesticides to take action, but was not sharp enough to enforce restrictions, and is insufficiently monitored. EU legislation for pesticide residues on and in food fixes maximum residue levels for each pesticide (about 700 pesticide residues) and for each type of fruit or vegetable, a huge

<sup>75</sup>Directive 2001/95, OJ 2002, L 11/4; see, however, Court of Justice, Case C-288/08 *Kemikalieinspektionen*, ECR 2009 I-11031.

<sup>76</sup>See Commission proposal for a strategy COM (87) 165; Council Resolution, OJ 1988, C 30/1. A good example is cadmium in fertilisers, by far the most important source of cadmium impacts to soil and to the food chain: as the EU could not agree to limit the cadmium content in fertilisers, it allows Sweden, Austria and Finland such a limitation—since 1995, more than 20 years; see for example Commission Decision 2006/347, OJ 2006, L 29 p. 19.

<sup>77</sup>See Regulation 1907/2006 on the registration, evaluation, authorisation and restriction of chemicals (REACH) OJ 2006, L 396 p. 1, Annex XVII, no. 23 (cadmium), 18 and 18a (mercury), 63, 16 and 17 (lead) and 47 (chromium VI).

<sup>78</sup>Directive 2008/50, OJ 2008, L 152/1.

<sup>79</sup>Directives 2008/105, OJ 2008, L 348/84 and 2013/39, OJ 2013 L 226/1.

<sup>80</sup>Regulation 850/2004, OJ 2004, L 158 p. 7; this Regulation replaced a directive on the prohibition of pesticides of 1979.

<sup>81</sup>Regulation 1107/2009, OJ 2009, L 309/1 (pesticides); Regulation 538/2012, OJ 2012, L 167/1 (biocides).

<sup>82</sup>Directive 2009/128, OJ 2009, L 309/71.

challenge for monitoring authorities; the monitoring reports do not signal significant problems.<sup>83</sup>

EU legislation on genetically modified organisms (GMO) is very restrictive on the release of GMOs: while the presence of GMOs is allowed within certain limits, the cultivation of GMO plants is almost completely restricted, and recent legislation enabled Member States to prohibit altogether such cultivation on certain conditions.

Several Member States provide for such a prohibition already. Hormones or other growth promoters in meat are prohibited since the mid-1980s.

The EU abandoned an early approach to fixing limits for emissions into the air and discharges into the water from industrial installations<sup>84</sup> and opted instead for concentration limits (quality objectives) in air and water, knowing that compliance with such quality objectives can hardly be monitored and enforced.<sup>85</sup> Large industrial installations are obliged to apply the best available technique to reduce emissions,<sup>86</sup> a formula which gives broad discretion to the authorities charged with granting permission. Medium-size installations will be covered by this formula in future,<sup>87</sup> but small installations are not covered by EU regulations.

Exceptionally, air emission limit values are fixed, for example for waste incinerators, cars and trucks. Thanks to the Montreal Protocol, there are large and effective restrictions on the marketing and use of ozone-depleting substances which go beyond international obligations of the Protocol.<sup>88</sup> In contrast, emission limit values for greenhouse gases only exist for passenger cars (CO<sub>2</sub>).<sup>89</sup> Other car emissions are fixed by a 2007 regulation.<sup>90</sup> No emission limit values exist for airplanes and ships, though ships have to limit their SO<sub>2</sub> emissions in some EU waters. Some—not too stringent—emission limit values exist for new non-road machinery.<sup>91</sup>

As regards discharges into water, the strategy to phase out, by 2020 the discharge of dangerous substances into water, was abandoned and replaced by a quality objective approach.<sup>92</sup> More effective was a Directive on urban waste water which required all agglomerations with more than 2000 people to have waste water collection systems and at least secondary treatment for such waters and which, furthermore,

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<sup>83</sup>European Food Safety Authority (EFSA): The 2013 EU report on pesticide residues in food. EFSA Journal 2015; 13(3):4038.

<sup>84</sup>Directive 84/360, OJ 194, L 188/20 (air emissions); Directive 76/464, OJ 1976, L 129/23 (water discharges).

<sup>85</sup>A good example is that of air pollution in the UK: EU Directive 2008/50 (fn. 77, above) requires Member States to comply with its quality objectives by 2010, at the latest by 2015. Where a breach is found, the remediation shall take place 'as soon as possible'. The UK Government keeps on arguing that it cannot comply with the EU values before 2025.

<sup>86</sup>Directive 2010/75, OJ 2010, L 334/17.

<sup>87</sup>Directive 2015/2193, OJ 2015, L 313/1.

<sup>88</sup>Regulation 1005/2009, OJ 2009, L 286/1.

<sup>89</sup>Regulation 443/2009, OJ 2009, L 140/1.

<sup>90</sup>Regulation 715/2007, OJ 2007, L 171/1.

<sup>91</sup>Directive 2004/26, OJ 2004, L 146/1.

<sup>92</sup>See on the one hand Directive 2000/60, OJ 2000, L 327/1, Art. 16, on the other hand Directive 2008/105 (fn. 78, above).

prohibited the discharge of sewage sludge into waters.<sup>93</sup> In contrast, a Directive on the limitation of nitrates in water from agricultural sources<sup>94</sup> was reduced in its effectiveness by generous derogations granted and through lack of enforcement by the Commission.

EU Regulation 1907/2006 on chemicals introduced a procedure for limiting or prohibiting the use of dangerous chemicals.<sup>95</sup> However, the process is slow: by 2016, only six new substances had been inserted into the list of restrictions/prohibitions, since the Regulation had been adopted in 2006, and some restrictions had been amended.<sup>96</sup>

Internationally, the EU followed the approach of the Rotterdam Convention on prior informed consent.<sup>97</sup> It did not question this approach, although it appears that in nine out of ten cases, a chemical that is prohibited within the EU because of its toxic, carcinogenic or mutagenic properties, also constitutes a risk in the third country. Frequently, developing countries do not have the necessary, scientific, administrative and political infrastructure, in order to correctly and completely assess the risk of a chemical. The prior informed consent approach is thus favourable to developed countries, but less advantageous to developing countries. The EU prohibited the export of metallic mercury and its compounds<sup>98</sup> and of a number of ozone-depleting substances<sup>99</sup>; in both cases, it followed international agreements.

Air emissions for airplanes and ships are fixed by the International Civil Aviation Organisation (ICAO) and by the International Maritime Organisation (IMO) respectively and have been taken over by the EU. Such provisions, however, hardly exist or are very loose. Progress in these two organisations is disappointingly slow, as vested interests have too much influence there and as unanimous decisions are the rule. In both organisations, environmental concerns do not rank high in the priority list.

In conclusion, the EU has equipped itself with a modern, progressive legislative instrument as regards the marketing of chemicals (REACH), based on the precautionary principle. Progress under this Regulation is slow, because of strong vested interests. The limitation of emissions from mobile and stationary sources—in particular from transport—does not match with the disastrous state of air pollution within the EU, specifically in urban agglomerations. Discharges to water have been reduced. Agricultural activities—pesticide, fertiliser use—continue to put strong pressure on soils and on the natural environment and no policy change is in view. The enforcement

<sup>93</sup>Directive 91/271, OJ 1991, L 135/40.

<sup>94</sup>Directive 91/676, OJ 1991, L 376/1.

<sup>95</sup>Regulation 1907/2006 (fn. 77, 76, above).

<sup>96</sup>See last Commission Regulation 474/2014, OJ 2014, L 136/19. Overall, annex XVII of Regulation 1907/2006 which lists the restrictions and prohibitions, contains 65 substances. It should, however, be pointed out that restrictions which are inserted in other pieces of EU legislation—for example heavy metals in batteries (Directive 2006/66 OJ 2006, L 266/1)—are not listed once more in annex XVII.

<sup>97</sup>Regulation 649/2012, OJ 2012, L 201/60. Annex I Part 1 of the Regulation lists some 170 substances which are subject to the PIC-procedure, because they are banned or severely restricted in use within the EU.

<sup>98</sup>Regulation 1102/2008, OJ 2008, L 204/75.

<sup>99</sup>Regulation 1005/2009, OJ 2005, L 286/1.

of existing provisions—the greatest problem of environmental law—is particularly problematic in the area of chemical substances.

## 5 Resource management

EU policy and strategy on resource management are still in their infancy. For decades, general EU policy was oriented towards economic growth, the import of raw materials (if that was necessary) and the export of manufactured products. The slowly-growing awareness that there were limits to growth, that economic development had to be sustainable and that planetary resources were not inexhaustible—all ideas coming from the environmental sector—have begun, in these last ten years, to bring about new attitudes. Sometimes, external factors had an influence: the exhaustion of fish stocks in European waters inspired thoughts of a different EU fisheries policy. The growing dependency on imported fossil fuels accelerated reflections on a change of energy policy orientations within the EU. Also, quite simple considerations favoured re-thinking: the weight of a mobile telephone is some 100 grams; however to produce a mobile telephone, about 80 kilograms of raw materials are necessary. A passenger car might weigh, on average, about one ton. In order to produce a car, about sixty tons of raw materials are required. In a world with nine billion people, all of whom need food and shelter, energy and products, recourse to raw materials inevitably becomes more difficult.

The European Commission clarified, in several communications, that its approach to an integrated product policy—defined as ‘an approach which seeks to reduce the life cycle environmental impacts of products from the mining of raw materials to production, distribution, use and waste management’<sup>100</sup>—favoured voluntary measures by economic operators and did not intend to suggest legislation.<sup>101</sup> This approach did not reach tangible results, also because of divergences among economic operators.

The EU did not take up in any serious form the invitation from the Rio Conference of 1992 to deal with issues of sustainable production and consumption. A 2008 Commission proposal for an action plan on sustainable consumption and production<sup>102</sup> again concentrated on the energy question and on voluntary measures by economic operators. It met with limited enthusiasm from the European Parliament and the Council and was not really put into operation. More successful was a Directive on the eco-design of energy-related products<sup>103</sup> which led to a very considerable number of binding regulations on the reduction of energy consumption of products, such as computers, TV sets, household appliances, water heating equipment *etc.* Although the legislation allowed general environmental performances to be regulated, in practice, the EU gave strong priority to energy consumption, as this fitted into the EU policy of combating climate change. This Directive was completed by a Directive

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<sup>100</sup>Commission, COM (2001) 68, p. 2.

<sup>101</sup>Commission, COM (2001) 68; COM (2003) 302; COM (2010) 614.

<sup>102</sup>Commission, COM (2008) 397.

<sup>103</sup>Directive 2005/32, OJ 2005, L 191 p. 29; in 2009, this Directive was replaced by Directive 2009/125, OJ 2009, L 285/10. The Directives did not apply to cars, airplanes and other means of transport.

on energy labelling and standard product information (relating to *e.g.*, noise, water consumption) of (mainly) household appliances and office equipment.<sup>104</sup>

EU waste policy has favoured, since the 1970s, the recycling of waste materials and fixed, as a first priority of any waste management policy the prevention of waste generation. When this objective was adopted, it was overlooked that materials, before they became waste, were products; thus a waste prevention policy required measures affecting products. EU waste legislation of 2008<sup>105</sup> required Member States to adopt waste prevention programmes and contained a number of measures to promote the recycling of waste materials.

When proposals were made, in 2013–2014, to increase recycling and recovery targets for certain waste materials—glass and metal, paper and plastics—the newly installed Commission considered that such measures ran contrary to the EU objective of deregulation and announced that it would repeal its proposals on waste recycling. However, this announcement raised a storm of protests from Member States governments, the European Parliament, the recycling industry and the general public. On this point, the Commission gave in and declared that it had repealed its proposals because they were not ambitious enough. In 2015, it then came out with a proposal for a circular economy<sup>106</sup> and some recycling proposals.

The Commission understood by a circular economy an economy, ‘where the value of products, materials and resources is maintained in the economy as long as possible and the generation of waste minimised’.<sup>107</sup> It proposed to examine and regulate in future, in the context of the eco-design Directive, the reparability, durability, upgradability and recyclability of products, promote repair, re-use and recycling, boost the market for secondary raw materials and water re-use, develop provisions for waste-based fertilisers and adopt quality standards for secondary raw materials. Measures on plastics, food waste, critical raw materials, construction and demolition material and biomass would be dealt with as a priority. Furthermore, the Commission suggested ambitious recycling rates for waste materials (glass, metals, paper, wood, plastics and construction and demolition waste) and a reduction of the landfilling of municipal waste.<sup>108</sup>

The European Parliament and the Council generally welcomed the Commission proposal on the circular economy, but asked for concrete legislative proposals.<sup>109</sup> Until now, only cars had to be, up to a certain percentage level, recyclable or recoverable.<sup>110</sup> The Commission also proposed that Member States encourage the use of products ‘that are resource efficient, durable, repairable and recyclable’, and that they

<sup>104</sup>Directive 2010/30, OJ 2010, L 153/1; this Directive replaced an earlier Directive of 1992.

<sup>105</sup>Directive 2008/98, OJ 2008, L 312/3.

<sup>106</sup>Commission, Closing the loop—a European Union action plan for the circular economy, COM (2015) 614. The term ‘circular economy’ was taken from German law, where legislation on circular economy existed since 1994 (Kreislaufwirtschaftsgesetz).

<sup>107</sup>Commission, COM (2015) 614, p. 2.

<sup>108</sup>Commission, COM (2015) 398; COM (2015) 596 (packaging and packaging waste); COM (2015) 595 (paper, metal, wood, glass and plastics) and COM (2015) 594 (landfills).

<sup>109</sup>European Parliament, Resolution of 9 July 2015, document P8-TA-Prov (20150266); Council, Resolution of 18 April 2016, document ST 8004 2016 INIT).

<sup>110</sup>Directive 2000/53, OJ 2000, L 269/34.



reduce the generation of food waste and waste generated in processes related to industrial activities.<sup>111</sup> To what extent such proposals, even if they were adopted by the legislator, would be able to change economic reality and achieve movement towards a circular economy, remains more than doubtful.

As regards relations with third countries, the EU implemented the Basel ban, which prohibits the export of hazardous waste to non-OECD countries, even when the material is to be recycled. For other hazardous wastes that may be exported under the Basel Convention, and for non-hazardous waste, the EU applied the prior informed consent principle.

Particular problems are raised by the export of end-of life vehicles<sup>112</sup> and of electrical and electronic waste (WEEE). Cars, even when they are no longer capable of being used, are all too often exported from the EU as second-hand cars which allows the application of waste legislation to be avoided. The EU has not yet taken measures to stop such abuse, for example by requiring that any car which is to be exported undergo a test to check whether it is roadworthy. The situation regarding WEEE is somewhat better, whereby Directive 2012/19 requires that a person who intends to export electrical or electronic equipment which is not waste, has to prove that 'every item in the consignment' is a product and thus capable of being used.<sup>113</sup> It is not known whether this provision is applied in practice and has stopped, for example, shipments of computers to a developing country, which are 75 per cent or more unusable.

When ships belonging to an owner within the EU end their useful lifetime, they are regularly sold, at high sea or in a third country, in order to be dismantled in Bangladesh, Pakistan, India or—to a lesser extent—in China. The environmental and social conditions in these dismantling facilities are appalling. Anticipating the Hong Kong Convention on the safe and environmentally sound recycling of ships (which has not yet entered into force), the EU adopted legislation on this issue.<sup>114</sup> That legislation provides in particular for the setting up of an EU register of dismantling facilities which comply with ILO and basic environmental requirements. Ships from the EU may only be dismantled in such registered facilities. Whether this legislation will stop the present abuses of (EU) ship-dismantling is doubtful, as nothing prevents a third-country owner from having his ship dismantled in a sub-standard facility.

As can be seen from this sketchy overview, the approach to a circular economy of the European Union is, at present, more a political wish than an economic and environmental reality. The EU has not yet fully grasped the economic impact which a future scarcity of raw materials might have. It has no provision for the compulsory use of recycled material in production. It has no eco-design standards yet on recyclability, durability and other environmental characteristics. The consumption of water of certain household appliances must be indicated on the label but is not in any way limited. The same applies to the use of raw materials or rare earths, the reparability of products and their durability. Only in the energy sector are there efforts to limit

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<sup>111</sup>Commission, COM (2015) 595.

<sup>112</sup>Directive 2000/53 (fn. 110, above).

<sup>113</sup>Directive 2012/19, OJ 2012, L 192/38, Art. 10 and Annex VI.

<sup>114</sup>Regulation 1257/2013, OJ 2013, L 330/1.

the energy consumption of products and buildings, as the adoption of legislation was induced by climate change considerations.

## 6 Other challenges

International or global negotiations on environmental issues normally pose a policy problem for the EU, as it is obliged to find a common position for such negotiations—which is not always easy for a group of 28 EU Member States. When an international problem was already the subject of EU legislation, the EU position is relatively easy to determine, as both the EU institutions and the Member States are obliged, under EU law, to defend the EU *acquis*. However, it is not always clear, whether an EU position on a specific problem exists. For example, at the 2009 Copenhagen Summit on climate change, the EU heads of States and Governments negotiated on their own and for themselves, without trying to find and promote a common EU line, although there was an EU policy at that time. This was different during the negotiations on the Paris Agreement on climate change. In this case, there was a position adopted by the EU heads of States and Governments on the EU climate change policy and targets until 2030. This position was then successfully defended by the EU and the Member States during the negotiations in Paris, where the EU spoke with one voice.

The only sanction which the EU has at its disposal, when a Member State does not respect the EU solidarity and negotiates or votes for itself, is to bring that Member State before the European Court of Justice. The EU took such a step, when Sweden went its own way in discussions under the POP Convention.<sup>115</sup> However, it did not take such a step, when Denmark, in 2013, voted differently from the other EU Member States on the question of whether the polar bear should be classified in annex I to the CITES Convention.<sup>116</sup>

With regard to global governance, the EU itself is not member of the United Nations, and nothing indicates that this situation will change in future. Indeed, it would be difficult to avoid giving a seat to the EU in the Security Council, but France and the United Kingdom, both permanent members of the Security Council, would then have to step down—which is not really possible against their will and is politically excluded. The EU does not pursue the objective of becoming a member of the United Nations but is aware that the present situation has a considerable impact on numerous decisions taken by the UN or by one of the UN's daughter organisations. The lack of formal representation in the United Nations also explains to some extent why the EU only takes a limited number of political or governance initiatives at international level, in the environmental sector or beyond. Anyway, the political dimension of this problem is not limited to the environmental sector and will therefore not be further discussed.

The EU has long pleaded for the creation of a United Nations Environmental Organisation, in parallel to the World Trade Organisation or the International Labour Organisation. Past initiatives in this direction were opposed in particular by the United

<sup>115</sup>EU Court of Justice, Case C-246/07, *Commission v. Sweden*, ECR 2010, I-3317.

<sup>116</sup>See L. Krämer, EU negotiating and voting under the amended CITES Convention, *Journal for European Environment & Planning Law* 2015, p. 3.

States and Saudi Arabia and did not succeed in bringing about a re-evaluation of the United Nations Environmental Programme (UNEP).

Initiatives such as the Rio Declaration on environmental principles and the Johannesburg Declaration on sustainable development or similar attempts to advance the policy and legal policy discussion on the planet's environment, are almost never started by the EU. First, such an initiative would require a consensus of the 28 Member States on a common proposal—and it would take years to hammer it out. Second, while 'general principles of law, recognised by civilised nations' constitute, according to Article 38 of the Statute of the International Court of Justice, a source of international law, such principles do not have the same function within the EU: the European Court of Justice has to apply the law as it is laid down in the EU Treaties, in international agreements to which the EU has adhered and in the numerous pieces of secondary EU legislation. Only where the interpretation of this written law does not lead to results, is it possible to think of the application of general principles of law. This strong reliance on written, codified law practically excludes recourse to international environmental principles—and at the same time makes EU initiatives at the international scene defending or promoting environmental principles most unlikely.

The EU actively supports international initiatives such as attempts to improve access to water or better protect forests. Its activities in this regard are embedded into its development and humanitarian aid policy and thus perhaps less visible. However, for the reasons mentioned above, it would be unrealistic to expect that the EU ever would initiate or start, for example, a global initiative to tackle the problem of land being used for biofuel generation and no longer for food production.

This reluctance to take the lead in environmental matters goes even further: the EU has prohibited hormones and growth promoters in meat, but does not try to obtain global rules in this regard. The EU adopted very strict rules on the authorisation and in particular the cultivation of genetically modified plants and animals but does not go to international level to have such restrictions generalised. The EU very actively promotes the large-scale use of renewable sources of energy but does not pursue this policy at international level. The EU does not take the lead in stopping financial support—including from the European Investment Bank or the European Bank for Reconstruction and Development—of coal-fired plants worldwide. The EU imposes relatively strict emission standards on its cars—but does not do anything to bring about strict car emission standards for cars being exported or at UN level. The EU adhered to the Aarhus Convention and adopted provisions on access to information, participation in decision-making and access to justice in environmental matters but does not undertake efforts to have such basic governance rules applied in other parts of the world.

## 7 Concluding remarks

Overall, it may be concluded that the EU tries to respond to global environmental challenges within its own territory. The EU environmental policy in any given area—whether air and water, biodiversity, noise, products, waste or industrial installations—need not fear comparison with other developed countries or regions, such as United

States, Canada, Australia, New Zealand, Japan, Norway, Switzerland, the North American Free Trade Area NAFTA, Mercosur, or the ASEAN regions. Many of its institutional or substantive solutions for dealing with environmental issues are exemplary. This may be said of the role of the European Court of Justice, which delivered between 1976 and mid-2016, almost 1000 judgments in environmental matters (interfering with national law and decision-making processes, but meeting no or very little resistance in the name of national sovereignty); the role of the European Commission as instigator of environmental legislation; and the participation in the legislative process of the European Parliament as the elected representative of more than 500 million citizens.

With regard to substantive environmental law, frequently innovative and progressive solutions to environmental problems are secured by the EU, ranging from waste water treatment to drinking water, from chemical substances handling (REACH) to the large application of the precautionary principle for pesticides, biocides, GMOs and other chemicals, from waste stream management (WEEE, cars, packaging waste) to landfilling, from the Natura 2000 network to environmental impact assessments for plans, programmes and projects, and from the reduction of greenhouse gas emissions to renewable energies and energy efficiency measures. This enumeration could be continued. The EU could and should improve in ensuring the application of its environmental provisions all over the EU, should increase citizens' rights and do more regarding noise pollution, nature protection and the transition to a low carbon economy.

Internationally, the EU does not bring to bear its full weight and know-how concerning environmental issues. Global environmental initiatives by the EU will not be seen in the foreseeable future. The EU also adheres to the principle that one euro which is invested, for example, in Africa, should bring a return of three euro to the European economy. A fundamental change to this policy approach is not in sight. It might only occur, when the demographic pressure of nine billion people, together with climate change consequences, are such that environmental migration takes another dimension to that it has today.

This leads back to the question already been posed above: the EU does a lot for the protection of the environment—but is it enough? It is a poor consolation that the measures taken elsewhere are not a sufficient response either to the challenges which this planet faces.

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