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**CORRIGENDUM**

This document corrects document SWD(2019) 126 final of 04.04.2019

Footnote 117 modified

The text shall read as follows:

**COMMISSION STAFF WORKING DOCUMENT**

**The EU Environmental Implementation Review 2019  
Country Report - LUXEMBOURG**

*Accompanying the document*

**Communication from the Commission to the European Parliament, the Council, the  
European Economic and Social Committee and the Committee of the Regions**

**Environmental Implementation Review 2019:  
A Europe that protects its citizens and enhances their quality of life**

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## Executive summary

### Luxembourg and the Environmental Implementation Review (EIR)

In the 2017 EIR, the **main challenges** identified for Luxembourg in implementing EU environmental policy and law were:

- to **improve water quality** further, including reducing **nitrates pollution**; and
- to fully implement **urban waste water treatment**.

Luxembourg held a **national dialogue** on the EIR in October 2017. This focused on air and water quality, biodiversity and environmental governance issues. A **bilateral discussion** between the Luxembourg authorities and Commission representatives took place in Luxembourg in June 2018. The aim was to provide an update on implementation issues and feed into the present EIR report.

In 2017, the Commission launched the TAIEX-EIR peer-to-peer (**EIR P2P**) tool to facilitate peer-to-peer learning among environmental authorities. Luxembourg has so far participated to one P2P event: attended a multi-country workshop in Budapest on ammonia emissions from agriculture.

### Progress on meeting challenges since the 2017 EIR

The **2019 EIR** shows that there has been some progress on water pollution caused by nitrates. However, **nitrate concentrations** in groundwater and the trophic state of surface water remain problematic. Over the period 2012-2015, 87.5 % of monitoring stations were reported as being eutrophic and hypertrophic.

Luxembourg has complied with the requirements of the **Urban Waste Water Treatment Directive**.

**Air pollution** in Luxembourg, caused in part by traffic congestion, remains a concern. In 2017, a **clean air dialogue** with the European Commission took place in Luxembourg. The conclusion was that the top priorities were to: (1) implement short-term measures to reduce emissions from existing vehicles and (2) monitor the risk of increased particulate matter emissions from greater use of biomass to reduce greenhouse gas emissions.

On **nature protection**, considerable progress has been made in adopting conservation measures and producing management plans for all sites since 2015. As a result, by June 2018 all but one Natura 2000 sites were covered by a management plan. However, habitat fragmentation and biodiversity loss still require close attention.

### Examples of good practice

- **Environmental aspects of rural development:** almost 28 % of agricultural land in Luxembourg is expected to come under management contracts that support better water management. Nearly 11 % will be under contracts to improve soil management. Over 90 % will come under management contracts that support biodiversity.
- **Public access to information:** the website **guichet.lu** provides information on how to make a complaint and offers specific online forms for individual environmental matters; the data platform **data.public.lu** lists data sources on environmental matters such as waste management, air quality, energy and noise pollution; the national geoportal **geoportail.lu** illustrates spatial datasets on environmental topics, such as strategic noise maps.
- **Mobile applications:** the government has begun to develop mobile apps on a range of issues to boost public access to information. These include a mobile version of the website **guichet.lu** and specific apps on waste management and air quality.
- **Facebook:** the Environment Agency set up an official Facebook page in September 2017. This provides information to between 150 and 11 000 followers and is updated 2-5 times a week.

## Part I: Thematic areas

### 1. Turning the EU into a circular, resource-efficient, green and competitive low-carbon economy

#### Measures towards a circular economy

The Circular Economy Action Plan emphasises the need to move towards a life-cycle-driven ‘circular’ economy, reusing resources as much as possible and bringing residual waste close to zero. This can be facilitated by developing and providing access to innovative financial instruments and funding for eco-innovation.

Following the adoption of the Circular Economy Action Plan in 2015 and the setting up of a related stakeholder platform in 2017, the European Commission adopted a new package of deliverables in January 2018<sup>1</sup>. This included additional initiatives such as: (i) an EU strategy for plastics; (ii) a Communication on how to address the interplay between chemical, product and waste legislation; (iii) a report on critical raw materials; and (iv) a framework to monitor progress towards a circular economy<sup>2</sup>.

The Ministry of the Economy, the Ministry of Environment, Sustainable Development and Climate and the Luxembourg Eco-Innovation Cluster hosted by LuxInnovation work closely together to promote the circular economy. There is also cooperation on the circular economy with the Benelux Union<sup>3</sup>.

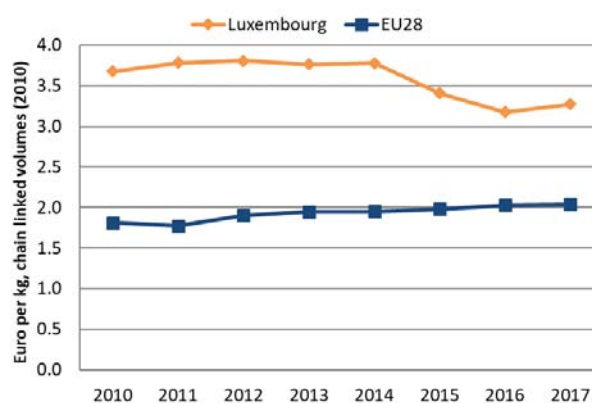
In the 2017 Special Eurobarometer 468 on attitudes of EU citizens towards the environment, 89 % of people in Luxembourg said they were concerned about the effects of plastic products on the environment (EU-28 average 87 %). 93 % said they were worried about the impact of chemicals (EU-28 average 90 %)<sup>4</sup>. Moreover, 93 % support greater EU investment in environmental protection, against the EU-28 average of 85 %. There appears to be very strong support for circular economy and environmental protection initiatives in Luxembourg.

The 10 indicators in the circular economy monitoring framework show that the rate of circular or secondary use of material in Luxembourg was 6.5 % in 2016. This is below the EU-28 average of 11.7 %. This figure has fallen

since 2014 when recycled material accounted for 24 % of the total material used<sup>5</sup>.

Luxembourg performs well above the EU average on resource productivity, i.e. how efficiently the economy uses material resources to produce wealth<sup>6</sup>. A rate of 3.27 EUR/kg was recorded in 2017, against the EU average of 2.04 EUR/kg. Figure 1 shows that, although Luxembourg’s resource productivity increased significantly between 2010 and 2014, it has been decreasing since 2014.

Figure 1: Resource productivity 2010-2017<sup>7</sup>



The circular economy is one of the cross-cutting focal points<sup>8</sup> that should be taken up by each of the six sectors targeted by the ‘Third Industrial Revolution’ strategy. These sectors are: mobility, food, building, energy, industry and finance. In June 2018, the Committee for the strategic follow-up, regrouping the different competent ministries, concluded that significant progress had been achieved on:

- implementing a flagship project highlighting the socioeconomic aspects of smart, sustainable, circular and zero-energy districts (e.g. Wiltz, Dudelange, Luxembourg’s pavilion at the World Expo 2020);

<sup>1</sup> European Commission, [2018 Circular Economy Package](#).

<sup>2</sup> [COM\(2018\) 029](#).

<sup>3</sup> BENELUX, [Roundtable](#), 14.12.2015.

<sup>4</sup> European Commission, 2017, [Special 486 Eurobarometer](#), ‘Attitudes of European citizens towards the environment’.

<sup>5</sup> Eurostat, [Circular Economy Indicators](#).

<sup>6</sup> Resource productivity is defined as the ratio between gross domestic product (GDP) and domestic material consumption (DMC).

<sup>7</sup> Eurostat, [Resource productivity](#).

<sup>8</sup> The Ministry of the Economy, [‘Third Industrial Revolution’ strategy](#).

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- promoting electromobility and launching a programme for zero-emission personal vehicles;
- promoting the circular economy in public procurement;
- developing a roadmap for sustainable food production<sup>9</sup>.

The circular economy is gaining momentum in stakeholder clusters, initiatives and the public authorities in Luxembourg. For example:

- The LIST (Luxembourg institute of science and technology) is developing, with the Environmental protection agency, a guide to improve the demolition of existing buildings and to reduce the quantity of demolition waste.
- Circular economy is integrated in the initiative “Climate Pact”, in order to address climate change mitigation and the transition to circular economy at the level of municipalities.
- In 2018 LuxInnovation’s eco-innovation cluster focused on the circular economy and plastics. In particular, the organisers indicated that the 2018 European strategy for plastics had been a crucial factor in the cluster’s decision to work on plastic waste.

Different activities have been launched in recent years by the SuperdrecksKëscht<sup>10</sup>, a public private partnership aiming at avoiding, reducing, recycling and disposing of waste in an environmentally correct way. Luxembourg is involved highlighting of examples of excellence in the circular economy. On 20-22 June 2017, it presented the progress achieved over the previous 2 years via the 2017 Luxembourg Circular Economy Hotspot. The presentation was attended by high-level government officials and industry leaders.

By September 2018, Luxembourg had nine products and 2 licences registered in the EU Ecolabel scheme, out of a total of 71 707 products and 2167 licences in the EU. Take-up of these licences is therefore low<sup>11</sup>. Four organisations had registered with EMAS, the European Commission’s eco-management and audit scheme that encourages organisations to behave in a more environmentally sustainable way<sup>12</sup>.

### SMEs and resource efficiency

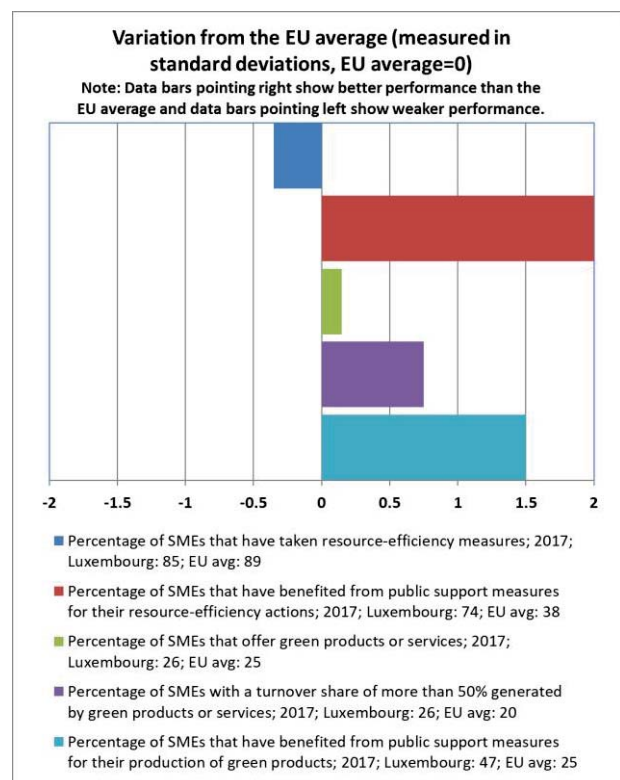
SMEs in Luxembourg continue to score well above the EU average on the environmental aspect of the Small Business Act, as shown in Figure 2. The proportion of

SMEs in Luxembourg offering green products or services is slightly higher than in the EU.

The ‘Fit 4 Circularity’ programme launched by the Ministry of the Economy together with LuxInnovation is part of the broader ‘Third Industrial Revolution’ strategy. ‘Fit 4 Circularity’ helps SMEs’ transition to the circular economy. It aims to ensure sustainable and smart growth for SMEs by: (i) helping them identify and assess their growth potential and (ii) integrating the circular economy into their general innovation activities.

Furthermore, “SuperdrecksKëscht fir Betriber” is an important vector to help companies become more resource efficient. Currently 5000 companies have joined this partnership.

**Figure 2: Environmental performance of SMEs<sup>13</sup>**



The latest Eurobarometer on ‘SMEs, resource efficiency and green markets’<sup>14</sup> asked companies about recent resource-efficiency action they had taken and additional resource-efficiency action they planned to take in the next 2 years. The Eurobarometer then compared these responses with those given to the same questions in 2015. Recent investments have been below the EU average, for example in more traditional areas like water

<sup>9</sup> The Luxembourg Government, [Mise en œuvre de la stratégie Rifkin](#)

<sup>10</sup> Ministry for Sustainable Development and Infrastructure, [The SuperDrecksKëscht](#).

<sup>11</sup> European Commission, [Ecolabel Facts and Figures](#).

<sup>12</sup> As of May 2018. European Commission, [Eco-Management and Audit Scheme](#).

<sup>13</sup> European Commission, [2018 SBA fact sheet - Luxembourg](#), p.12:

<sup>14</sup> Flash Eurobarometer 456 ‘SME, resource efficiency and green markets’ January 2018. The 8 dimensions were Save energy; Minimise waste; Save materials; Save Water; Recycle by reusing material internally; Design products easier to maintain, repair or reuse; Use renewable energy; Sell scrap materials to another company.

saving. Ambitions for the next 2 years have not risen significantly. 34 % said they did not intend to make any investment in resource efficiency (EU average: 19 %). Of those surveyed, far fewer aimed to use renewable energy than in neighbouring countries. This is despite the potential that service-sector-led economies such as Luxembourg have for using renewable energy.

Only 19 % of companies in Luxembourg relied on external support when trying to become more resource-efficient (EU average: 22 %). The low number of respondents makes it difficult to give a clear indication of preferred cooperation partners. However, a pattern indicates that public sources are used much more than private ones for both funding (35 % against 4 %) and advice (59 % against 15 %).

The companies surveyed in the EU-28 regard grants and subsidies as the greatest form of help in becoming resource-efficient (36 %). 20-23 % of the companies surveyed mention technical or financial consultancy, technology demonstration or better cooperation among companies as useful forms of assistance. Conversely, 20 % disagree that any of these would be of help.

Only 27 % of companies in Luxembourg mention grants and subsidies as being useful. Responses on the helpfulness of other types of support are largely in line with EU-28 responses. Support for networking is considered more useful, and databases with case studies less useful than in the EU-28.

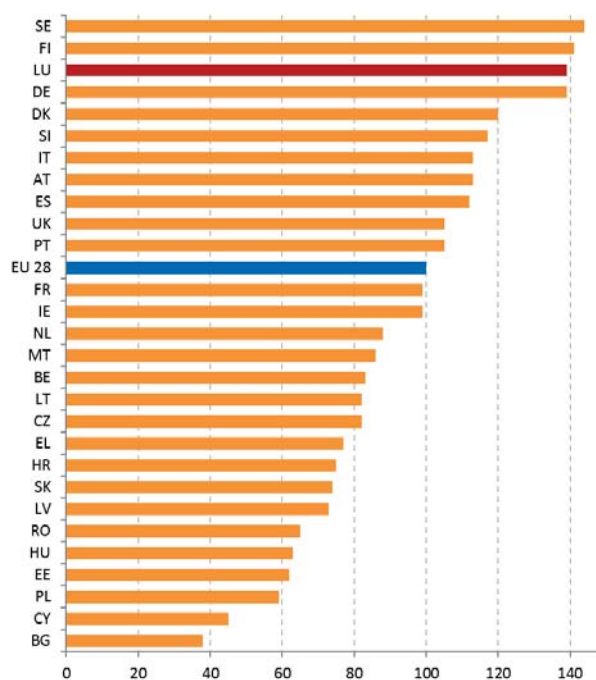
It is noteworthy that in a small, highly advanced and internationally connected economy like Luxembourg, public sector funding and advice on resource efficiency is considered so much more helpful than private sector services such as consultancy. SMEs' high environmental performance (Figure 2) shows that the system works. Future activities could include: (i) enhancing access to specialised consultancy, which may not be available on the local market; and (ii) involving businesses in the transition to renewable energy or resources.

### Eco-innovation

In 2018, Luxembourg ranked sixth on the European Innovation Scoreboard and was the 11th fastest growing innovator (a 6.6 % increase since 2010)<sup>15</sup>.

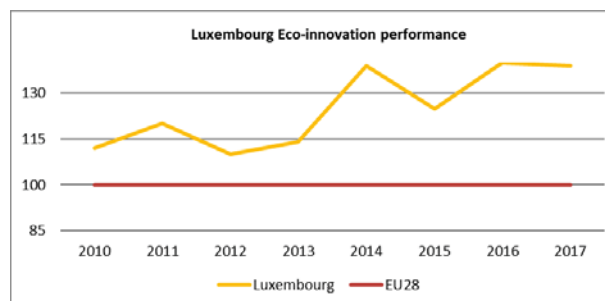
As shown in Figure 3, the country ranked third together with Germany in the European Eco-Innovation Scoreboard for 2017. This is a solid result, the country having been third in 2015.

Figure 3: 2017 Eco-innovation index (EU=100)<sup>16</sup>



The country's performance between 2015 and 2017 confirms that Luxembourg has become a top player in Europe in eco-innovation. The country ranked 11th in 2011 and 7th in 2013 (see Figure 4).

Figure 4: Luxembourg's eco-innovation performance



Drivers of eco-innovation in Luxembourg include:

- strong political support for and commitment to eco-innovation, sustainable development and the circular economy;
- a growing awareness among businesses of the need to commit to a circular economy;
- a strong and comprehensive set of national environmental and innovation laws; and
- economic diversification, which has been made a priority<sup>17</sup>.

<sup>16</sup> European Commission, [Eco-innovation Observatory](#): Eco-Innovation scoreboard 2017.

<sup>17</sup> European Commission, [Eco-Innovation Observatory, Country profile 2016-2017: Luxembourg](#), p. 12.

<sup>15</sup> European Commission, [European innovation Scoreboard 2018](#).

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The downside is that the market and the necessary enabling conditions are not always available for innovative projects due to a lack of understanding or commitment. Other barriers include the small national market for eco-innovations and pressure on resources due to the need to balance economic growth and environmental protection.

Transport and construction are two sectors where the government is particularly driving eco-innovation. To boost the development of electric mobility, new tax abatements have been introduced to encourage people and companies to use electric cars and bikes. Luxembourg has also introduced a mandatory passive house standard for all residential buildings to boost sustainable, low-energy housing.

The new public procurement law means that attention is now paid to criteria other than the lowest price. It also encourages innovative and green public procurement<sup>18</sup>.

### Waste management

Turning waste into a resource is supported by:

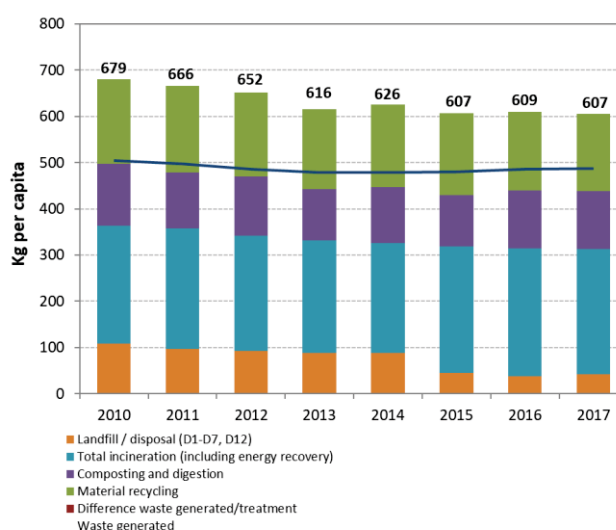
- (i) fully implementing EU waste legislation, which includes the waste hierarchy, the need to ensure separate collection of waste, the landfill diversion targets, etc.;
- (ii) reducing waste generation and waste generation per capita in absolute terms; and
- (iii) limiting energy recovery to non-recyclable materials and phasing out landfilling of recyclable or recoverable waste.

This section focuses on management of municipal waste<sup>19</sup> for which EU law sets mandatory recycling targets<sup>20</sup>.

Although municipal waste generation in Luxembourg fell between 2014 and 2017 to 607 kg/y/inhabitant<sup>21</sup>, it remains considerably above the EU average of 487 kg<sup>22</sup>. Even if the proportion of waste generated by daily commuters to Luxembourg is deducted, the resulting figure is still above the EU average. Figure 5 depicts

municipal waste by treatment in Luxembourg in kg per capita.

**Figure 5: Municipal waste by treatment in Luxembourg 2010-2017**<sup>23</sup>



Incineration accounts for 45 % and is significantly above the EU average (28 %). The amount of waste landfilled decreased since 2014 from 14 % to 6.9 % and is now far below the EU average (24 %). The recycling rate in Luxembourg has stagnated over the past decade. Figure 6 shows that 48 % of municipal waste was recycled (including composting) in 2017, slightly above the EU average of 46%. Luxembourg is close to complying with the 2020 municipal waste recycling target of 50 %. However, more effort will be needed to comply with recycling targets for the post-2020 period<sup>24</sup>. This will in particular require measures to reduce the incineration and landfilling of municipal waste.

A new national waste management plan was adopted in June 2018<sup>25</sup>. In addition to waste management, it also promotes the transition to a circular economy and views waste as a resource. It applies the 'polluter pays' principle and sets objectives on reuse, recycling and preventing waste, including packaging waste and food waste.

Municipalities in Luxembourg have an obligation to base the variable part of waste collection fees on the quantities of mixed waste generated. However, the municipalities will need more incentives to divert

<sup>18</sup> European Commission, [Eco-Innovation Observatory, Country profile 2016-2017: Luxembourg](#), p. 23.

<sup>19</sup> Municipal waste consists of mixed waste and separately collected waste from households and from other sources, where such waste is similar in nature and composition to waste from households. This is without prejudice to the allocation of responsibilities for waste management between public and private sectors.

<sup>20</sup> See Article 11.2 of [Directive 2008/98/EC](#). This Directive was amended in 2018 by [Directive \(EU\) 2018/851](#), and more ambitious recycling targets were introduced for the period up to 2035.

<sup>21</sup> Transboundary commuters coming to work in Luxembourg (estimated 170 000 people every day) contribute significantly to this high figure.

<sup>22</sup> Eurostat, [Municipal waste generation and treatment, by type of treatment method](#).

<sup>23</sup> Eurostat, [Municipal waste by waste operations](#).

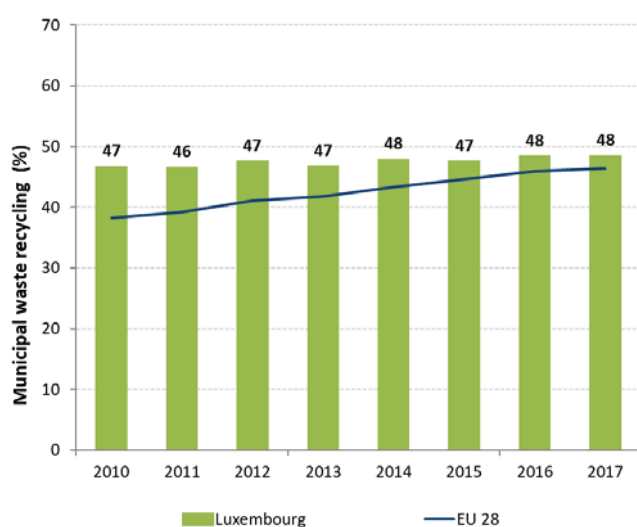
<sup>24</sup> [Directive \(EU\) 2018/851](#), [Directive \(EU\) 2018/852](#), [Directive \(EU\) 2018/850](#) and [Directive \(EU\) 2018/849](#) amend the previous waste legislation and set more ambitious recycling targets for the period up to 2035. These targets will be taken into consideration to assess progress in future Environmental Implementation Reports.

<sup>25</sup> Luxembourg, [Plan national de gestion des déchets](#).



recyclable waste away from landfill and incineration towards recycling.

**Figure 6: Recycling rate of municipal waste 2010-2017**<sup>26</sup>



Luxembourg is also making efforts to improve the separate collection of recyclables, specifically biodegradable waste and packaging. It is also working to ensure that the various schemes rolled out across the country are coherent. Some measures to prevent packaging waste have also been introduced, linked to the development of a circular economy in Luxembourg. Examples of these include the ‘ecobag’ (*eco-sac*)<sup>27</sup> and the ‘ecobox’<sup>28</sup>.

### 2019 priority actions

- Introduce new policies, including economic instruments, to implement further the waste hierarchy, i.e. promote prevention, and make reuse and recycling more economically attractive; implement the policies which are already in place.
- Shift reusable and recyclable waste away from incineration by gradually phasing out subsidies to incineration or by introducing an incineration tax. Channel those revenues towards measures to improve waste management in line with the waste hierarchy.

<sup>26</sup> Eurostat, [Recycling rate of municipal waste](#).

<sup>27</sup> The Luxembourg Government, [Prevention of waste ecobag](#).

<sup>28</sup> The Luxembourg Government, [ecobox](#).

## Climate change

The EU has committed to undertaking ambitious climate action internationally as well as in the EU, having ratified the Paris Climate Agreement on 5 October 2016. The EU targets are to reduce greenhouse gas (GHG) emissions by 20 % by 2020 and by at least 40 % by 2030, compared to 1990. As a long-term target, the EU aims to reduce its emissions by 80-95 % by 2050, as part of the efforts required by developed countries as a group. Adapting to the adverse effects of climate change is vital to alleviate its already visible effects and improve preparedness for and resilience to future impacts.

For emissions not covered by the EU emissions trading system (ETS), Member States have binding national targets under the Effort Sharing legislation. Luxembourg had lower emissions than its annual emission allocations (AEAs) in each of the years 2013-2016. According to preliminary data, emissions in 2017 were slightly lower than the AEA. For 2020, Luxembourg's national target under the EU Effort Sharing Decision is to reduce emissions by 20 % compared to 2005. For 2030, Luxembourg's national target under the Effort Sharing Regulation will be to reduce emissions by 40 % compared to 2005.



Transport represents almost a quarter of the EU's GHG emissions and is the main cause of air pollution in cities. Transport emissions in Luxembourg decreased by 14 % from 2013 to 2016, but with existing measures alone no further substantial decrease is expected towards 2030.

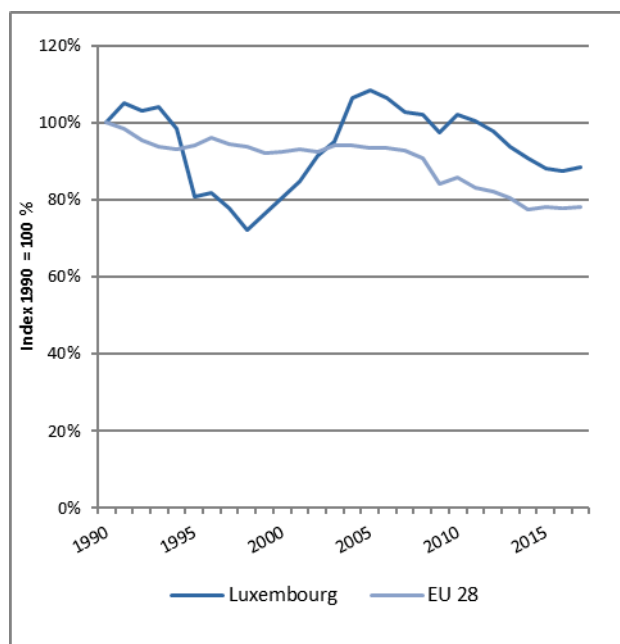
The Regulation on fluorinated greenhouse gases (F-gas) requires Member States to run training and certification programmes, introduce rules for penalties and notify these measures to the Commission by 2017. Luxembourg has notified both measures.

The accounting of GHG emissions and removals from forests and agriculture is governed by the Kyoto Protocol. A preliminary accounting exercise for 2013-2016 shows net credits of, on average, -0.3 Mt CO<sub>2</sub>-eq per year, which

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corresponds to 0.2% of the EU-28 accounted sink of - 115.7 Mt CO<sub>2</sub>-eq.

**Figure 7: Change in total greenhouse gas emissions 1990-2017 (1990=100%)<sup>29</sup>.**



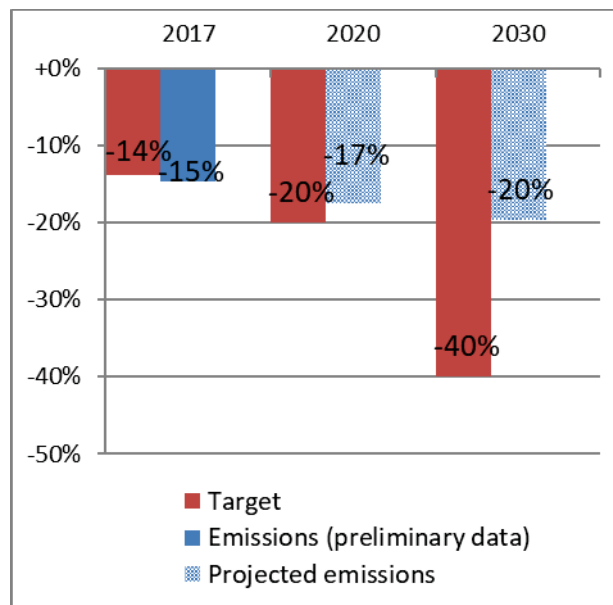
The EU Strategy on adaptation to climate change, adopted in 2013, aims to make Europe more climate resilient, by promoting action by Member States, better informed decision making, and promoting adaptation in key vulnerable sectors. By adopting a coherent approach and providing for improved coordination, it seeks to enhance the preparedness and capacity of all governance levels to respond to the impacts of climate change.

Luxembourg adopted a National Adaptation Strategy on Climate Change in October 2018. Measures for a sustainable forest management, the preparation of a Flash Floods project aiming to establish a model to better predict floods, and the establishment of a plan for areas at risk of heavy rain are among the 41 new climate adaptation measures to be taken in 13 sectors most severely hit by climate change consequences (including regional planning, tourism, energy, drinking water, agriculture, viticulture, biodiversity, buildings and infrastructure, navigation, health). No National Adaptation Plan has been adopted, nor has a Monitoring and Reporting Framework been developed.

The total revenues from the auctioning of emission allowances under the EU ETS over the years 2013-2017

were EUR 29 million. Luxembourg does not earmark auctioning revenues for specific uses.

**Figure 8: Targets and emissions for Luxembourg under the Effort Sharing Decision and Effort Sharing Regulation<sup>30</sup>.**



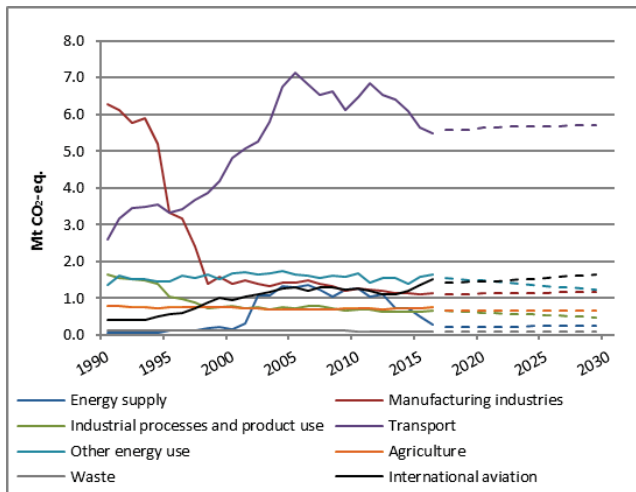
The Climate Pact<sup>31</sup> was set up by the Ministry of Sustainable Development and Infrastructure with the assistance of 'myenergy' to offer a possibility to the municipalities wishing to take an active role in the fight against climate change. In the framework of a contract, each participating municipality undertakes to implement a quality management system for its energy and climate policy and an energy accounting system for its municipal infrastructure and facilities. The State, for its part, guarantees financial support and technical assistance to the municipality. Since June 2017, all Luxembourg municipalities have adopted the Climate Pact. The investments made since the beginning of the pact currently represent 55.2 million euros: 31.5 million euros in subsidies obtained under the pact and 23.7 million euros in aid committed from the part of the Fund for the protection of the environment. Many projects have been initiated across the country by the Climate Pact, in the field of territorial development, elaboration of energy and climate concepts at the municipal level; planning and construction of energy-efficient and sustainable buildings or renewable energy heating networks; mobility concepts, projects promoting soft mobility and public transport.

<sup>29</sup> Annual European Union greenhouse gas inventory 1990–2016 ([EEA greenhouse gas data viewer](#)). Proxy GHG emission estimates for 2017 Approximated EU greenhouse gas inventory 2017 (European Environment Agency). Member States national projections, reviewed by the European Environment Agency.

<sup>30</sup> Proxy GHG emission estimates for 2017 Approximated EU greenhouse gas inventory 2017 (European Environment Agency). Member States national projections, reviewed by the European Environment Agency.

<sup>31</sup> The Luxembourg Government, [The Climate pact](#).

**Figure 9: Greenhouse gas emissions by sector (Mt. CO<sub>2</sub>-eq.). Historical data 1990-2016. Projections 2017-2030<sup>32</sup>.**



### 2019 priority action

In this report, no priority actions have been included on climate action, as the Commission will first need to assess the draft national energy and climate plans which the Member States needed to send by end of 2018. These plans should increase the consistency between energy and climate policies and could therefore become a good example of how to link sector-specific policies on other interlinked themes such as agriculture-nature-water and transport-air-health.

<sup>32</sup> Annual European Union greenhouse gas inventory 1990–2016 ([EEA greenhouse gas data viewer](#)). Proxy GHG emission estimates for 2017 Approximated EU greenhouse gas inventory 2017 (European Environment Agency). Member States national projections, reviewed by the European Environment Agency.

## 2. Protecting, conserving and enhancing natural capital

### Nature and biodiversity

The EU biodiversity strategy aims to halt the loss of biodiversity in the EU by 2020. It requires full implementation of the Birds and Habitats Directives to achieve favourable conservation status of protected species and habitats. It also requires that the agricultural and forest sectors help to maintain and improve biodiversity.

### Biodiversity strategy

In January 2017, the Luxembourg government adopted the new national nature protection plan (PNPN2)<sup>33</sup>. This ambitious plan involves:

- implementing species and habitat action plans,
- restoring ecosystems and their services,
- defragmenting landscapes,
- improving the follow-up of indicators,
- speeding up the creation of protected areas and their management,
- purchasing nature areas,
- strengthening communication with all stakeholders on nature conservation.

The budget earmarked for implementing the plan is EUR 100 million. In June 2018, the Parliament adopted a new nature protection law (*Loi concernant la protection de la nature et des ressources naturelles*) to reform and strengthen existing legislation.



### Setting up a coherent network of Natura 2000 sites

27.03 % of the area of Luxembourg is covered by Natura 2000 (EU average 18.1 %). The country has 18 Special Protection Areas designated under the Birds Directive covering 16.1 % of its surface area (EU average 12.3 %)

<sup>33</sup> [Plan National concernant la Protection de la Nature \(2017-2021\)](#).

and 48 Sites of Community Importance (SCI) designated under the Habitats Directive covering 16.02 % of its surface area (EU average 13.8 %). Since 2014, the total area of protected land in Luxembourg, including national nature reserves, has doubled.

### Designating Natura 2000 sites and setting conservation objectives and measures

The latest assessment of the SCI part of the Natura 2000 network shows that the network is complete<sup>34</sup>. All SCIs have been designated as Special Areas of Conservation under Article 4(4) of the Habitats Directive. The adoption of conservation measures and the establishment of management plans for all sites have been stepped up considerably since 2015. The result is that by June 2018 all but one Natura 2000 sites were covered by a management plan. By the same date, one plan was still being drawn up and nine plans were being brought into line with the latest standards. The aim was to have all sites subject to a detailed management plan by the end of 2018. A national communication campaign was launched in 2015 to improve public awareness and acceptance of Natura 2000. Funding for conservation measures was set out in an updated prioritised action framework (PAF).

According to the PNPN2, it is widely recognised that biodiversity has been declining for over 40 years. This is true for species, habitats and ecosystems. The main factors affecting biodiversity in Luxembourg are (i) the intensification of agricultural practices; (ii) urban and suburban development; and (iii) the increased density of transportation infrastructure. While the overall status of biodiversity is still difficult to assess, national red lists<sup>35</sup>, landscape statistics and monitoring of selected species often show negative trends.

A methodological guide for implementing the EU mapping and assessment of ecosystems and their services (MAES) initiative in Luxembourg was completed in March 2014. Based on this guide, 13 ecosystem services<sup>36</sup> were prioritised and mapped by the end of 2014. Pilot projects aiming at raising awareness of the value of ecosystem services and taking them into account

<sup>34</sup> European Commission, [Nature and Biodiversity Newsletter](#), January 2015, p. 8.

<sup>35</sup> The IUCN Red List is the world's most comprehensive inventory of the global conservation status of biological species. It is set upon precise criteria to evaluate the extinction risk of thousands of species.

<sup>36</sup> Ecosystem services are benefits provided by nature such as food, clean water and pollination on which human society depends.

## Environmental Implementation Review 2019 — Luxembourg

in planning and decision making at municipal and national scales were performed in 2016 and 2017.

### Progress in maintaining or restoring favourable conservation status of species and habitats

The 2017 EIR referred to the latest report on the conservation status of habitats and species; new data will be available for the next EIR.

Overall, this report acknowledged that the status of some species (e.g. *Castor fiber*, *Rhodeus sericeus amarus*, *Rhinolopus ferrumequinum*) and habitats has recently improved in Luxembourg. However, other species are still deteriorating (e.g. *Alytes obstetricans*, *Triturus cristatus*, *Myotis myotis*).

### 2019 priority actions

- Ensure that Natura 2000 management plans are being effectively implemented with administrative capacity and financing.
- Strengthen the integration of biodiversity concerns into other policies (in particular in agriculture, but also in fisheries, urban and infrastructure planning and sustainable tourism) and promote communication between actors. Where relevant, avoid further habitat fragmentation and take measures to restore connectivity.

### Maintaining and restoring ecosystems and their services

The EU biodiversity strategy aims to maintain and restore ecosystems and their services by including green infrastructure in spatial planning and restoring at least 15 % of degraded ecosystems by 2020. The EU green infrastructure strategy promotes the incorporation of green infrastructure into related plans and programmes.

Part of the PNPN2 involves implementing green infrastructure and restoring ecosystems and their services. Priority measures target five sectors: agriculture, forestry, water management, urban planning and land use planning. The first part of the PNPN2 is a national biodiversity strategy which is in line with the EU biodiversity strategy. As such, it aims to implement green infrastructure and restore ecosystems and their services, particularly:

- wetlands
- valuable structured semi-open landscapes
- extensive grasslands
- heathland
- dry grasslands.

The idea is to significantly reduce land use and fragmentation. This will be achieved by (i) integrating biodiversity concepts into urban and regional planning;

and (ii) promoting the concept of green infrastructure and its potential to deliver multiple services to urban areas and their inhabitants. Green infrastructure is described at different scales with references to the various building blocks. The multiple benefits and cost-effectiveness of green infrastructure are also emphasised<sup>37</sup>.

Luxembourg is the most habitat-fragmented country in Europe. As such, the PNPN2 states that a green infrastructure network should be created to connect Natura 2000 and other nature areas better and ensure ecosystem services are provided. Major bottlenecks to developing the ecological network should be resolved. These include creating wildlife corridors across major roads and ensuring the migration of aquatic species by restoring watercourses and reducing the impact of human activity.

The EU has provided guidance on the further deployment of green and blue infrastructure in Luxembourg<sup>38</sup> and a country page on the Biodiversity Information System for Europe (BISE)<sup>39</sup>. This information will also contribute to the final evaluation of the EU Biodiversity Strategy to 2020.

Green infrastructure is seen as an important climate adaptation measure. This is primarily because it helps to conserve biodiversity and essential ecological and landscape elements, thereby restoring the resilience of ecosystems and conserving climatic refuges. The PNPN2 further mentions that green infrastructure should be promoted instead of grey infrastructure to boost flood protection, in particular by restoring wetlands.

The PNPN2 provides for an interdepartmental group on biodiversity, public works and spatial planning to oversee the large-scale implementation of green infrastructure. The PNPN2 also indicates potential sources of financing for green infrastructure measures, ranging from EU funds to national budgets. The plan sets out multifunctional zones (e.g. areas with varied landscapes, green zones within urban areas) and priority zones that are part of the ecological network. More information is needed on including green infrastructure in sector-specific policies such as climate change adaptation.

<sup>37</sup> The Biodiversity Information System for Europe, [Luxembourg](#).

<sup>38</sup> European Commission, The [recommendations of the green infrastructure strategy review report](#) and the [EU Guidance on a strategic framework for further supporting the deployment of EU-level green and blue infrastructure](#).

<sup>39</sup> [Biodiversity Information System for Europe](#).

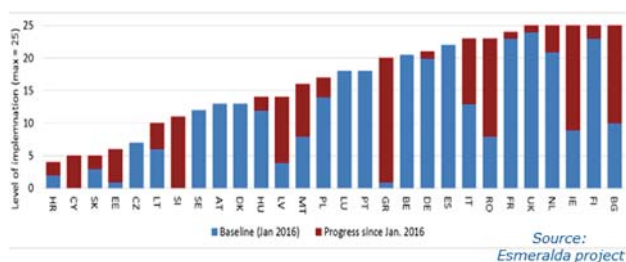
## Estimating natural capital

The EU biodiversity strategy calls on Member States to map and assess the state of ecosystems and their services<sup>40</sup> in their national territories by 2014, assess the economic value of such services and integrate these values into accounting and reporting systems at EU and national level by 2020.

Luxembourg has undertaken a project to map ecosystem services. However, the uptake of MAES in national policies remains undocumented. Based on a guide published in 2014, 13 ecosystem services were prioritised for mapping. The assessment results were published at the end of 2015<sup>41</sup>.

At the MAES working group meeting held in Brussels in September 2018, it was reported that Luxembourg had not provided updated information. No progress on implementing MAES has therefore been recorded since January 2016 (Figure 10). This assessment was made by the ESMERALDA project<sup>42</sup>. It is based on 27 implementation questions and updated every 6 months.

Figure 10: Implementation of MAES (September 2018)



Business and biodiversity platforms, networks and communities of practice are key tools for promoting and facilitating natural capital assessments (NCA) among business and financial service providers. An example is the Natural Capital Coalition's natural capital protocol<sup>43</sup>. NCA helps private business to better understand and value not only their impact but also their dependency on nature. This in turn contributes to the EU biodiversity strategy. Platforms have been set up at EU level and in some Member States. However, Luxembourg has not yet set up such a platform.

<sup>40</sup> Ecosystem services are benefits provided by nature such as food, clean water and pollination on which human society depends.

<sup>41</sup> The Luxembourg Government, [Mapping and assessing ecosystems and their services in Luxembourg, Final Synthesis Report, December 2015](#)

<sup>42</sup> EU project [Esmeralda](#).

<sup>43</sup> Natural Capital Coalition, [Natural Capital Protocol](#).

## Invasive alien species

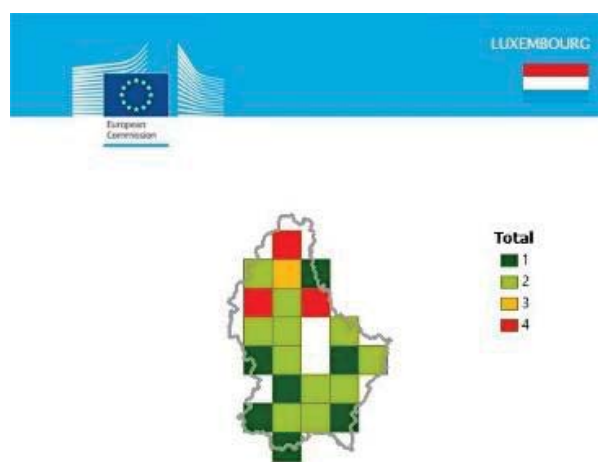
Under the EU biodiversity strategy, the following are to be achieved by 2020:

- (i) invasive alien species identified;
- (ii) priority species controlled or eradicated; and
- (iii) pathways managed to prevent new invasive species from disrupting European biodiversity.

This is supported by the Invasive Alien Species (IAS) Regulation, which entered into force on 1 January 2015.

The report on the baseline distribution (Figure 11), for which Luxembourg reviewed its country or grid-level data, shows that of the 37 species on the first EU list, 7 have been observed in the environment in Luxembourg. The most widespread among them are the raccoon (*Procyon lotor*) and the signal crayfish (*Pacifastacus leniusculus*).

Figure 11: Number of IAS of EU concern, based on available georeferenced information for Luxembourg<sup>44</sup>



Between the entry into force of the EU list and May 2018, Luxembourg submitted two early detection notifications, as required under the IAS Regulation. These both relate to coypu (*Myocastor coypus*). While the species was eradicated upon the first detection, measures still need to be introduced for the second.

Luxembourg has notified the Commission of its authorities responsible for implementing the IAS Regulation as required by Article 24(2) of the Regulation. The national act containing the relevant provisions on penalties applicable to infringements, as required by Article 30(4) of the IAS Regulation, was published on 2 July 2018.

<sup>44</sup> Tsiamis K; Gervasini E; Deriu I; D'amico F; Nunes A; Addamo A; De Jesus Cardoso A. [Baseline Distribution of Invasive Alien Species of Union concern. Ispra \(Italy\): Publications Office of the European Union; 2017, EUR 28596 EN, doi:10.2760/772692.](#)

## Soil protection

The EU soil thematic strategy underlines the need to ensure a sustainable use of soils. This entails preventing further soil degradation and preserving its functions, as well as restoring degraded soils. The 2011 Roadmap to a Resource Efficient Europe states that by 2020, EU policies must take into account their direct and indirect impact on land use.

Soil is an extremely fragile finite resource, and it is increasingly degrading in the EU. The percentage of artificial land<sup>45</sup> in Luxembourg (Figure 12) can be seen as a measure of (i) the relative pressure on nature and biodiversity; and (ii) the environmental pressure on people living in urbanised areas. A similar measure is population density. When the proportion of both is high, the challenges of protecting natural capital and ensuring people's well-being are likely to be considerable. Properly implementing the relevant EU policy and law becomes even more of a priority.

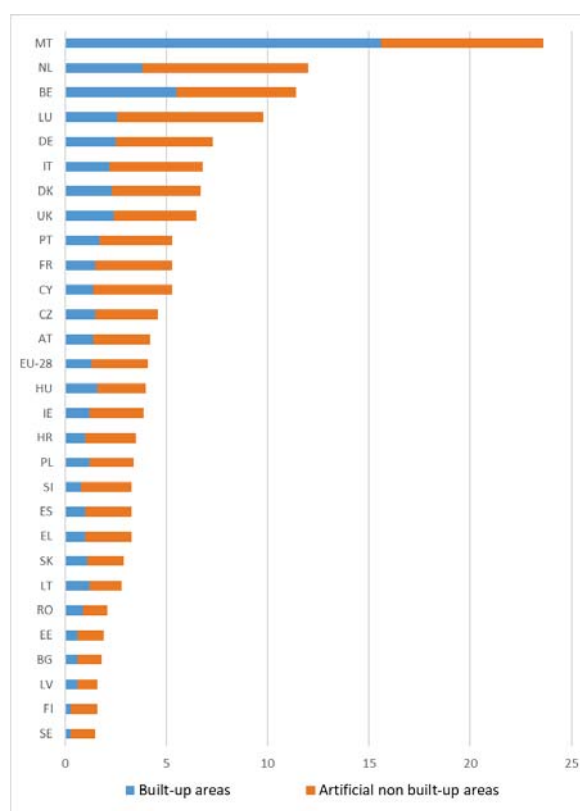
Luxembourg ranks above the EU average on artificial land coverage, with 9.8 % of artificial land (EU-28 average: 4.1 %). The population density is 225.1/km<sup>2</sup>, which is significantly above the EU average of 118/km<sup>2</sup>. Soil artificialisation and sealing present a threat to Luxembourgish soil functions. The present objective to limit soil artificialisation to 1ha/day is going to be reviewed in the frame of the new spatial planning masterplan that is currently being elaborated.

Contamination can severely reduce soil quality and threaten human health or the environment. A recent report of the JRC<sup>47</sup> estimated that potentially polluting activities have taken or are still taking place on approximately 2.8 million sites in the EU. At EU level, 650 000 of these sites have been registered in national or regional inventories. 65 500 contaminated sites already have been remediated. Luxembourg has registered 12 000 sites where potentially polluting activities have taken or are taking place, and already has remediated or applied aftercare measures on 1 060 sites.

Soil erosion by water is a natural process. It can also be aggravated by climate change and human activity, such as inappropriate agricultural practices, deforestation,

forest fires and construction work. High levels of soil erosion can reduce productivity in agriculture and can have negative and transboundary impacts on biodiversity and ecosystem services. They can also negatively affect rivers and lakes, for example by increasing sediment or transporting contaminants. According to the RUSLE2015 model<sup>48</sup>, Luxembourg has an average soil loss rate by water of 2.07 tonnes per hectare per year ( $t\ ha^{-a}\ yr^{-y}$ ) against the European average of 2.46  $t\ ha^{-a}\ yr^{-y}$ . This indicates that soil erosion is medium on average. It is important to note that these figures are the output of a model run at EU level and therefore should not be considered as values measured *in situ*. The actual soil loss rate can vary significantly within the Member State depending on local conditions.

Figure 12: Proportion of artificial land cover, 2015<sup>49</sup>



Soil organic matter plays an important role in the carbon cycle and in climate change. Soils are the second largest carbon sink in the world after the oceans. A loss of soil organic matter can increase the risk of erosion and lead to a decline in soil structure and quality.

In order to protect soils and to enable conservation and rehabilitation of soil functions, the Government has

<sup>45</sup> Artificial land cover is defined as the total of roofed built-up areas (including buildings and greenhouses), artificial non built-up areas (including sealed area features, such as yards, farmyards, cemeteries, car parking areas etc. and linear features, such as streets, roads, railways, runways, bridges) and other artificial areas (including bridges and viaducts, mobile homes, solar panels, power plants, electrical substations, pipelines, water sewage plants, and open dump sites).

<sup>46</sup> Eurostat, [Population density by NUTS 3 region](#).

<sup>47</sup> Ana Paya Perez, Natalia Rodriguez Eugenio (2018), Status of local soil contamination in Europe: Revision of the indicator "Progress in the management Contaminated Sites in Europe".

<sup>48</sup> Panagos, P., Borrelli, P., Poesen, J., Ballabio, C., Lugato, E., Meusburger, K., Montanarella, L., Alewell, C., The new assessment of soil loss by water erosion in Europe, (2015) Environmental Science and Policy, 54, pp. 438-447.

<sup>49</sup> Eurostat, [Land covered by artificial surfaces by NUTS 2 regions](#).

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proposed a bill to the Parliament setting a framework for soil protection and management of polluted sites in Luxembourg. As soon as adopted, the future soil bill will introduce the possibility to manage historically polluted sites by a risk based land management approach. This will promote the recycling of brownfields and alleviate some of the pressure that the soils are exposed to due to growing urbanisation and need for land for SMEs and industry. Furthermore, the future soil bill will set the framework for assessment and monitoring of soil quality in Luxembourg, and will set up a public participatory process in a national soil protection plan.



### 3. Ensuring citizens' health and quality of life

#### Air quality

EU clean air policy and legislation require the significant improvement of air quality in the EU, moving the EU closer to the quality recommended by the World Health Organisation. Air pollution and its impacts on human health, ecosystems and biodiversity should be further reduced with the long-term aim of not exceeding critical loads and levels. This requires strengthening efforts to reach full compliance with EU air quality legislation and defining strategic targets and actions beyond 2020.

The EU has developed a comprehensive body of air quality legislation<sup>50</sup>, which establishes health-based standards and objectives for a number of air pollutants.

The emission reductions between 1990 and 2014 mentioned in the previous EIR continued in 2014-2016. Emissions of sulphur oxides (SO<sub>x</sub>) fell by 35.06 %, emissions of nitrogen oxides (NO<sub>x</sub>) fell by 21.14 % and emissions of particulate matter (PM<sub>2.5</sub>) fell by 5.59 %. Meanwhile, emissions of volatile organic compounds increased by 8.57 % and emissions of ammonia (NH<sub>3</sub>) by 3.17 % (see Figure 13 on the total PM<sub>2.5</sub> and NO<sub>x</sub> emissions per sector).

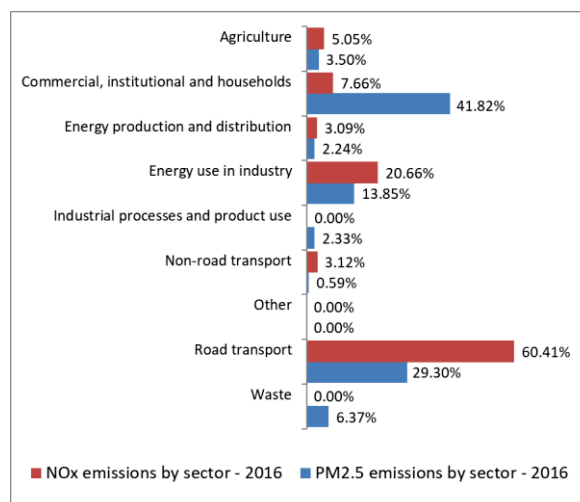
Despite the emission reductions recorded since 1990, efforts are needed to meet the reduction commitments in the new National Emissions Ceilings Directive<sup>51</sup> for 2020-2029 and beyond.

At the same time, air quality in Luxembourg continues to give a cause for concern. The European Environment Agency estimated that in 2015 more than 240 premature deaths were attributable to air pollution<sup>52</sup>.

In 2017<sup>53</sup>, nitrogen dioxide levels exceeding EU air quality standards were recorded in one air quality zone. Target levels of ozone concentrations were also exceeded.

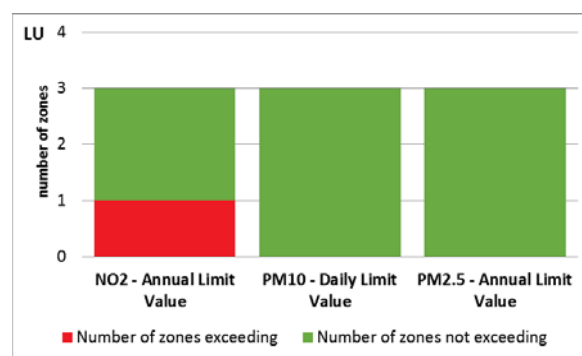
The persistent breaches of air quality requirements for NO<sub>2</sub> have severe negative effects on health and the environment. Responding to these breaches, the European Commission has initiated infringement procedures against all Member States concerned, including Luxembourg. The aim is to have adequate measures put in place to bring all zones into compliance.

Figure 13: PM<sub>2.5</sub> and NO<sub>x</sub> emissions by sector in Luxembourg<sup>54</sup>



According to a special report by the European Court of Auditors<sup>55</sup>, EU action to protect human health from air pollution has not had the expected impact. There is notably a risk that air pollution is being underestimated in some instances because it is not always monitored in the right places. Indeed, Member States are required to report both real-time and validated air quality data to the Commission<sup>56</sup>.

Figure 14: Air quality zones exceeding EU air quality standards in 2017<sup>57</sup>



<sup>50</sup> European Commission, 2016. [Air Quality Standards](#)

<sup>51</sup> [Directive 2016/2284/EU](#).

<sup>52</sup> [EEA, Air Quality in Europe — 2018 Report, p. 64](#). Please see details in this report as regards the underpinning methodology).

<sup>53</sup> EEA, [Central Data Repository](#).

<sup>54</sup> 2016 NECD data submitted by Member State to the EEA.

<sup>55</sup> European Court of Auditors, Special report no 23/2018: Air pollution: [Our health still insufficiently protected](#).

<sup>56</sup> Article 5 of [Commission Implementing Decision 2011/850/EU](#) of 12 December 2011 laying down rules for [Directives 2004/107/EC](#) and [2008/50/EC](#) of the European Parliament and of the Council as regards the reciprocal exchange of information and reporting on ambient air quality (OJ L 335, 17.12.2011, p. 86) requires Member States to provide Up-To-Date data.

<sup>57</sup> [EEA, EIONET Central Data Repository](#). Data reflects the reporting situation as of 26 November 2018.

### A clean air dialogue with Luxembourg

The main conclusions of the clean air dialogue, held with the European Commission in Luxembourg in June 2017 were that: (i) the expected growth in ammonia emissions from the agricultural sector will need close attention; (ii) there is a need for short term measures to reduce emissions from existing vehicles and a focus on the implementation of long-term plans for sustainable urban mobility; (iii) attention should be given to the risk of increased particulate matter emissions from promoting biomass to reduce greenhouse gas emissions, as well as the benefits of energy renovation and building modernisation; and (iv) efforts should continue to be made to ensure effective implementation and enforcement to deliver changes on the ground and maximise the potential of existing legislation.



### 2019 priority actions

- In the context of developing an adequate National Air Pollution Control Programme (NAPCP), take actions towards reducing the main emission sources; and meet all air quality standards.
- Reduce NMVOCs emissions (where applicable, to comply with currently applicable national emission ceilings)
- Accelerate reductions in nitrogen oxide (NO<sub>x</sub>) emissions and nitrogen dioxide (NO<sub>2</sub>) concentrations by further reducing transport emissions, in particular in urban areas. It may also require proportionate and targeted restrictions on vehicle access to urban areas and/or fiscal incentives.
- Upgrade and improve the air quality monitoring network, and ensure timely reporting of air quality data.

### Industrial emissions

The main objectives of EU policy on industrial emissions are to:

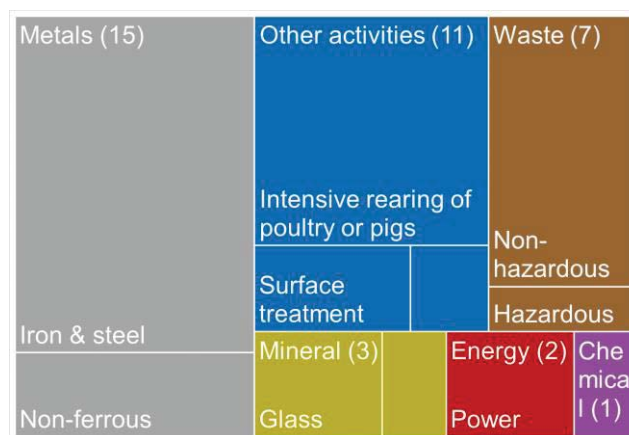
- (i) protect air, water and soil;
- (ii) prevent and manage waste;
- (iii) improve energy and resource efficiency; and
- (iv) clean up contaminated sites.

To achieve this, the EU takes an integrated approach to the prevention and control of routine and accidental industrial emissions. The cornerstone of the policy is the Industrial Emissions Directive<sup>58</sup> (IED).

The below overview of industrial activities regulated by the IED is based on the ‘industrial emissions policy country profiles’ project<sup>59</sup>.

In Luxembourg, around 90 industrial installations must have a permit in accordance with the IED. In 2015, the industrial sectors in Luxembourg with the most IED installations were iron and steel (31 %). This was followed by ‘other activities’ (mostly intensive rearing of poultry or pigs, at 28%) and non-hazardous waste management (15 %).

**Figure 15: Number of IED industrial installations per sector (2015)**<sup>60</sup>



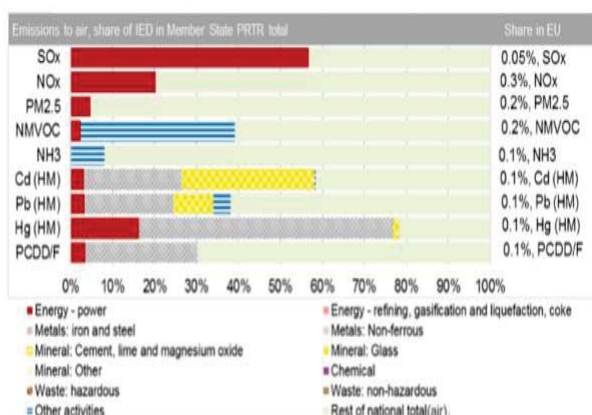
The industrial sectors contributing the largest proportion of air emissions are shown in Figure 16.

<sup>58</sup> [Directive 2010/75/EU](#) covers industrial activities carried out above certain thresholds. It covers energy industry, metal production, mineral and chemical industry and waste management, as well as a wide range of industrial and agricultural sectors (e.g. intensive rearing of pig and poultry, pulp and paper production, painting and cleaning).

<sup>59</sup> European Commission, [Industrial emissions policy country profile – Luxembourg](#).

<sup>60</sup> European Commission, [Industrial emissions policy country profile – Luxembourg](#).

**Figure 16: Emissions to air from IED sectors and all other national total air emissions (2015)**



The EU approach to enforcement under the IED gives the public strong rights to access relevant information and participate in the permitting process. This empowers members of the public and NGOs to ensure that permits are appropriately granted and their conditions are fulfilled.

Developing best available techniques (BAT) reference documents (BREFs) and BAT conclusions, through information exchange involving Member States, industrial associations, NGOs and the Commission, ensures good collaboration with stakeholders and improves the implementation of the IED.

The Commission relies on the efforts of national competent authorities to implement the legally binding BAT conclusions and associated BAT emission levels in environmental permits. This results in considerable ongoing pollution reduction.

For example, by applying the recently adopted BAT associated emission levels for large combustion plants, emissions of sulphur dioxide will be cut on average by between 25 % and 81 %, nitrogen oxide by between 8 % and 56 %, dust by between 31 % and 78 % and mercury by between 19 % and 71 % at EU level. The extent of the reduction depends on the situation in individual plants.

The challenges identified for Luxembourg are to address air pollutant emissions from iron and steel plants.

### 2019 priority actions

- Review permits to comply with newly adopted BAT conclusions;
- Strengthen checks and enforcement to ensure compliance with BAT conclusions;
- Address air pollutant emissions from iron and steel plants.

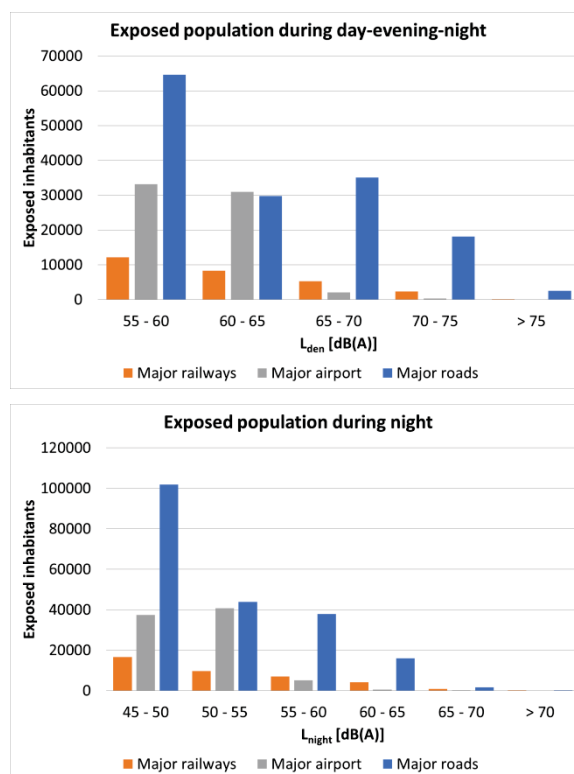
## Noise

The Environmental Noise Directive<sup>61</sup> provides for a common approach to avoiding, preventing and reducing the harmful effects of exposure to environmental noise.

Excessive noise from aircraft, railways and roads is one of the main causes of environmental health-related issues in the EU<sup>62</sup>.

Based on a limited set of data<sup>63</sup>, environmental noise in Luxembourg is estimated to cause at least around 20 premature deaths and 100 hospital admissions per year. Some 40 000 people also report having trouble sleeping. The noise mapping for the previous reporting round, reference year 2011, is complete. The action plans should include the measures to keep noise low or reduce it.

**Figure 17: Estimated exposed population in Luxembourg, by noise source (2016).**



National plans, based on the strategic noise maps 2011 (2<sup>nd</sup> round), triggering actions against aircraft, road, and railway traffic noise are also complete in Luxembourg<sup>64</sup>.

<sup>61</sup> Directive 2002/49/EC.

<sup>62</sup> WHO/JRC, 2011, Burden of disease from environmental noise, Fritschi, L., Brown, A.L., Kim, R., Schwela, D., Kephelopoulou, S. (eds), World Health Organisation, Regional Office for Europe, Copenhagen, Denmark.

<sup>63</sup> N.B. the figures cited here are from a 2017 unpublished fact sheet for Luxembourg from the European Environment Agency.

<sup>64</sup> Administration de l'environnement, Plans d'action de lutte contre le bruit.

These instruments were adopted after the consultation of a relevant public and they include the measures to prevent new noise problems or improve existing problems on a priority basis. Strategic noise maps, representative for the reference year 2016 (3<sup>rd</sup> round), have been finalised, reported to the Commission and can be consulted by the general public at the national geoportal website [geoportail.lu](http://geoportail.lu) as well as downloaded from the open data portal [data.public.lu](http://data.public.lu). As updated noise maps are available, the action plans are currently revised for the 3<sup>rd</sup> round.

For the reference year 2016, the exposed population in Luxembourg is attributable to the different noise sources as illustrated in Fig.1x. Main challenges in Luxembourg relate to growing road traffic and the proximity of the major airport to the “*agglomération de la Ville de Luxembourg et environs*”<sup>65</sup>. Railway traffic has been marked by a low point in freight traffic in 2016, which is reflected in the resulting noise map.

### Water quality and management

EU legislation and policy requires that the impact of pressures on transitional, coastal and fresh waters (including surface and ground waters) be significantly reduced. Achieving, maintaining or enhancing a good status of water bodies as defined by the Water Framework Directive will ensure that EU citizens benefit from good quality and safe drinking and bathing water. It will further ensure that the nutrient cycle (nitrogen and phosphorus) is managed in a more sustainable and resource-efficient way.

The existing EU water legislation<sup>66</sup> puts in place a protective framework to ensure high standards for all water bodies in the EU and addresses specific pollution sources (for example, from agriculture, urban areas and industrial activities). It also requires that the projected impacts of climate change are integrated into the corresponding planning instruments e.g. flood risk management plans and river basin management plans, including programme of measures which include the actions that Member States plan to take in order to achieve the environmental objectives.

<sup>65</sup> The urban area around Luxembourg City, including the territories of the municipalities of Bertrange, Hespérange, Luxembourg, Strassen, Steinsel and Walferdange, is the only designated agglomeration of more than 100'000 inhabitants.

<sup>66</sup> This includes the [Bathing Waters Directive \(2006/7/EC\)](#), the [Urban Waste Water Treatment Directive \(91/271/EEC\)](#) (on discharges of municipal and some industrial wastewaters), the [Drinking Water Directive \(98/83/EC\)](#) (on potable water quality), the [Water Framework Directive \(2000/60/EC\)](#) (on water resources management), the [Nitrates Directive \(91/676/EEC\)](#) and the [Floods Directive \(2007/60/EC\)](#).

### Water Framework Directive

Luxembourg has adopted and reported the second generation of River Basin Management Plans under the Water Framework Directive and the European Commission has assessed the status and the development since the adoption of the first River Basin Management Plans, including suggested actions in the EIR report 2017.

The **most significant pressures on rivers** in Luxembourg are atmospheric deposition (100% of surface water bodies), physical alteration of channel/bed/riparian area/shore (99%) and anthropogenic pressure (99%). For groundwater bodies, the most significant pressure was diffuse pollution from agricultural (83%), followed by contaminated sites/abandoned industrial sites (50%).

The **most significant impact** on surface water bodies was organic and chemical pollution (100%) and altered habitats due to morphological changes (100%) followed by nutrient pollution (90%). For groundwater, the most significant impacts were also organic and nutrient pollution (100%), followed by chemical pollution (83%).

There appears to be a large increase in the number of operational sites in the Rhine River Basin District and the overall assessment is based on more complete data sets, i.e. more complete sets of quality elements and results for a larger number of water bodies.

The proportion of river water bodies in good ecological status/potential decreased from 7% in the first River Basin Management Plans to 3% in the second as illustrated in figure 18. This shows that Luxembourg has a long way to go in order to achieve the good status/potential objectives set down in the Water Framework Directive.

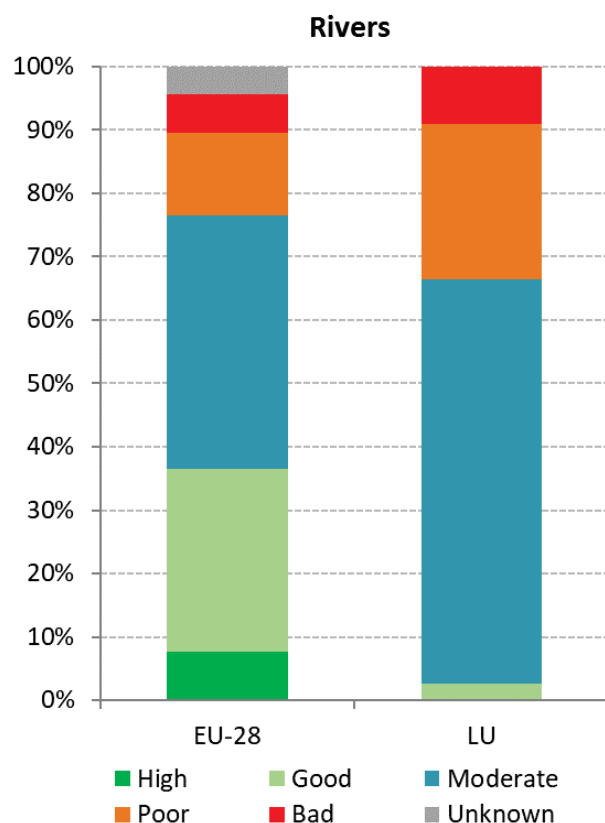
All surface water bodies are failing to achieve **good chemical status**, where 70% were in good chemical status and 30% failed to achieve good status in the first River Basin Management Plans. The reason for the change has been attributed to the expansion of the monitoring programme leading to more widespread failure of the Environmental Quality Standard for polycyclic aromatic hydrocarbons (from diffuse sources, mainly atmospheric deposition) and the extrapolation of this result to all surface water bodies.

All groundwater bodies are in **good quantitative status**. The number of monitoring sites decreased and there is still one out of the six groundwater bodies without quantitative monitoring.

Where environmental objectives are not yet achieved exemptions can be applied in case the respective conditions are met and the required justifications are explained in the River Basin Management Plans. The exemption regarding new projects, which potentially can

affect the status of water bodies, is not mentioned in the second River Basin Management Plans. However, it is not clear whether there are any new physical modifications planned which requires justification.

**Figure 18: Ecological status or potential of surface water bodies in Luxembourg<sup>67</sup>**



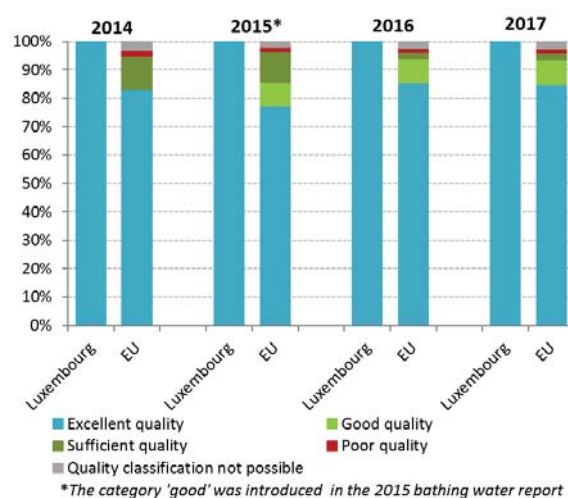
Significant pressures are identified in the River Basin Management Plans and addressed by measures (Key type of measures) and progress seems to have been made in identifying significant pressures and linking some of these to measures. Some measures are completed since the first Programme of Measures but obstacles such as governance and finance have occurred in relation to the implementation of the first Programme of Measures.

**Bathing Water Directive**

Figure 19 shows that, in 2017, 100% of the 12 bathing waters in Luxembourg continued to be of excellent quality. Luxembourg has shown continued excellent quality over the years<sup>68</sup>. Detailed information on Luxembourg bathing waters is available

from a national portal<sup>69</sup> and via the European Environment Agency’s interactive map viewer<sup>70</sup>.

**Figure 19: Bathing water quality 2014 – 2017<sup>71</sup>**



**Urban Waste Water Treatment Directive**

Luxembourg has in the past encountered difficulties complying with the **Urban Waste Water Treatment Directive**. For this reason, the Court of Justice of the European Union imposed fines on Luxembourg in 2014. The estimated investment needed to ensure adequate collection and treatment of the remaining urban agglomerations was EUR 136 million in 2017<sup>72</sup>. However, compliance with the Urban Waste Water Treatment Directive was achieved in 2018. Specifically, 100 % of waste water is now collected. Of this, close to 100 % is subject to secondary treatment and 45.3 % is subject to more stringent treatment.

**Nitrates Directive**

To implement the **Nitrates Directive**, Luxembourg decided to apply mandatory measures across its whole territory. Water quality data show a stable situation. There are still issues with nitrate concentration in groundwater and the trophic status of surface waters. 87.5 % of monitoring stations were reported as being eutrophic and hypertrophic in 2012-2015.

**Floods Directive**

The Floods Directive established a framework for the assessment and management of flood risks, aiming at the

<sup>67</sup> EEA, [WISE dashboard](#).

<sup>68</sup> European Environment Agency, 2017. [European bathing water quality in 2016](#), p. 17.

<sup>69</sup> The Luxembourg Government, [bathing waters national portal](#)

<sup>70</sup> EEA, [State of bathing waters](#).

<sup>71</sup> European Environment Agency, 2018. [European bathing water quality in 2017](#), p. 21.

<sup>72</sup> European Commission, Ninth Report on the Implementation Status and the Programmes for Implementation of the Urban Waste Water Treatment Directive ([COM\(2017\) 749](#)) and Commission Staff Working Document accompanying the report ([SWD\(2017\)445](#)).

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reduction of the adverse consequences associated with significant floods.

Luxembourg has adopted and reported its first Flood Risk Management Plans under the Directive and the European Commission conducted an assessment.

The Commission's assessment found that good efforts were made with positive results in setting objectives and devising measures focusing on prevention, protection and preparedness. The assessment also showed that, as was the case for other Member States, Luxembourg's Flood Risk Management Plans do not yet include a clear link between the measures and the objectives and an as complete as possible estimation of the cost of measures with identification of specific sources of funding. In addition, there is scope for clarifying the method for the prioritisation of measures, including the assessment of costs and benefits.

### 2019 priority actions

- Ensure that projects, which potentially can affect the status of water bodies, are thoroughly assessed and justified in line with the requirements in the Water Framework Directive (Article 4(7)).
- Continue ensuring correct levels of collection and treatment of urban waste water by investing in maintenance and construction in good time.
- Take steps to clarify the method for the prioritisation of measures, including the assessment of costs and benefits in relation to the Flood Risk Management Plan.

### Chemicals

The EU seeks to ensure that by 2020 chemicals are produced and used in ways that minimise any significant adverse effects on human health and the environment. An EU strategy for a non-toxic environment that is conducive to innovation and to developing sustainable substitutes, including non-chemical options, is being prepared.

The EU's chemicals legislation<sup>73</sup> provides baseline protection for human health and the environment. It also ensures stability and predictability for businesses operating in the single market.

In 2016, the European Chemicals Agency (ECHA) published a report on REACH and the CLP Regulation<sup>74</sup> that showed that enforcement activities are still evolving.

<sup>73</sup> Principally for chemicals: REACH (OJ L 396, 30.12.2006, p. 1.); for Classification, Labelling and Packaging, the CLP Regulation (: OJ L 252, 31.12.2006, p. 1.), together with legislation on biocidal products and plant protection products.

<sup>74</sup> European Chemicals Agency, [Report on the Operation of REACH and CLP 2016](#).

Member States cooperate closely as part of the Forum for Exchange of Information on Enforcement<sup>75</sup>. This dialogue has shown that there is scope to increase the effectiveness of enforcement activities, particularly for registration obligations and safety data sheets where the level of non-compliance is still relatively high.

While progress has been made, there is room to further improve and harmonise national enforcement activities across the EU, including checks on imported goods. Enforcement remains weak in some Member States, particularly for checks on imports and supply chain obligations. The enforcement architecture is complex in most EU countries and enforcement projects reveal differences in compliance between Member States.

A 2015 Commission study already emphasised the importance of harmonised market surveillance and enforcement when implementing REACH at Member State level, deeming it to be a critical success factor in the operation of a harmonised single market<sup>76</sup>.

In March 2018, the Commission published an evaluation of REACH<sup>77</sup>. The evaluation concludes that REACH delivers on its objectives, but that progress made is slower than anticipated. In addition, the registration dossiers often are incomplete. The evaluation underlines the need to enhance enforcement by all actors, including registrants, downstream users and in particular for importers, to ensure a level playing field, meet the objectives of REACH and ensure consistency with the actions envisaged to improve environmental compliance and governance. Consistent reporting of Member State enforcement activities was considered important in that respect.

In Luxembourg, the competent authority for REACH, CLP and biocides is the Ministry of Sustainable Development and Infrastructure. The national legislation for the REACH, CLP and Biocides Regulations provides for inter-administrative cooperation between the Environment Protection Agency, the Labour Inspection, the Health Directorate, the Water Management Administration and the Customs and Excise Administration. For the Biocides Regulation, the Veterinary Services Administration and the control unit of the Ministry of Agriculture, Viticulture and Consumer Protection are also responsible. This national legislation provides these bodies with the powers they need to perform their functions. It also sets out the offences and penalties (both administrative and

<sup>75</sup> ECHA, on the basis of the projects [REF-1](#), [REF-2](#) and [REF-3](#).

<sup>76</sup> European Commission. (2015). *Monitoring the Impacts of REACH on Innovation, Competitiveness and SMEs*. Brussels: European Commission.

<sup>77</sup> [COM\(2018\) 116](#).

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criminal) for breaching REACH, CLP and Biocides Regulation requirements<sup>78</sup>.

The Environment Protection Agency serves as a focal point for contacting other European authorities and carries out regular inspections on companies and products on the Luxembourg market. In this regard, Luxembourg has adopted national market surveillance programmes and has participated in several Forum enforcement projects over the last few years.

### Making cities more sustainable

EU policy on the urban environment encourages cities to put policies in place for sustainable urban planning and design. These should include innovative approaches to urban public transport and mobility, sustainable buildings, energy efficiency and urban biodiversity conservation.

Europe can be seen as a union of cities and towns. Around 75 % of the EU population live in urban areas<sup>79</sup> and this figure is projected to rise to just over 80% by 2050<sup>80</sup>. Urban areas pose particular challenges for the environment and human health, but they also provide opportunities for using resources more efficiently. The EU encourages municipalities to become greener through initiatives such as the Green Capital Award<sup>81</sup>, the Green Leaf Award<sup>82</sup> and the Green City Tool<sup>83</sup>.

The population of Luxembourg grew sharply, from 384 000 in 1991 to 600 000 in 2018. More than half of the Grand Duchy's population is concentrated in the urban and peri-urban areas in the centre (Luxembourg City) and in the south (Esch-sur-Alzette, Differdange and Dudelange)<sup>84</sup>.

Housing is one of the biggest challenges in Luxembourg today. Much of the new housing is located in peri-urban and rural areas. This leads to urban sprawl, regional land use imbalances and traffic problems.

Attempts have been made recently to improve and promote public transport and soft mobility. In January 2019, the Government presented details on the introduction, from the first half of 2020, of free public transport in all modes of national public transport financed by the State in the Luxembourg territory.<sup>85</sup> Nevertheless, the constant growth in the number of

cross-border workers (over 150 000 daily) and growing commuting distances continue to cause major traffic.

### Financing greener cities

Luxembourg has allocated EUR 1.17 million or 6 % of its allocation under the European Regional Development Fund (excluding technical assistance) to sustainable urban development<sup>86</sup>.

### Participation in EU urban initiatives and networks

Luxembourg participates in the European Urban Development Network<sup>87</sup>. This network brings together more than 500 cities across the EU responsible for implementing integrated measures based on sustainable urban development strategies financed by the European Regional Development Fund in the 2014-2020 period.

Two cities in Luxembourg are involved in the EU Covenant of Mayors<sup>88</sup>. Beckerich, which joined in 2008, has also put in place an action plan, while the Our Nature Park signed the convention in 2016.

Several Horizon 2020 network projects have also helped make cities in Luxembourg more sustainable. SocialCar is a research and innovation project to incorporate carpooling into existing mobility systems. Luxembourg is one of the 10 European cities involved in testing the SocialCar system<sup>89</sup>.

In 2017, 22.5 % of the Luxembourg population living in cities considered that their residential area was affected by pollution, grime or other environmental problems. This figure was up from 18.5 % in 2015 and 14.7 % in 2016. These figures are slightly higher than the EU-28 average (20 % in 2017)<sup>90</sup>.

### Nature and cities

The entire Natura 2000 network in Luxembourg is located within urban areas. This is because the whole country is classified as a functional urban area<sup>91</sup>. In contrast, the EU average is 15 % (see Figure 20).

The Landscapes Masterplan (plan directeur sectoriel "paysages") seeks to find the balance between socio-economic developments and conservation of landscape qualities. Its main objectives are the conservation of the coherence of Luxembourg's landscapes within the context of the European Landscape. The implementation mechanisms comprise prescriptions for three different

<sup>78</sup> ECHA, [National Inspectorates - Luxembourg](#)

<sup>79</sup> Eurostat (2016), [Urban Europe](#).

<sup>80</sup> European Commission, Eurostat, [Urban Europe](#), 2016, p.9.

<sup>81</sup> European Commission, [European Green Capital](#).

<sup>82</sup> European Commission, [European Green Leaf Award](#).

<sup>83</sup> European Commission, [Green City Tool](#).

<sup>84</sup> The Government of Luxembourg [Service Central de la Statistique et des Etudes Economiques](#) (Statec), 2014.

<sup>85</sup> The Government of Luxembourg [Press Release](#) 21.01.2019.

<sup>86</sup> European Commission, [Partnership agreement with Luxembourg - 2014-20](#).

<sup>87</sup> European Commission, [The Urban Development Network](#).

<sup>88</sup> Covenant of Mayors for Climate and Energy, [Country signatories](#).

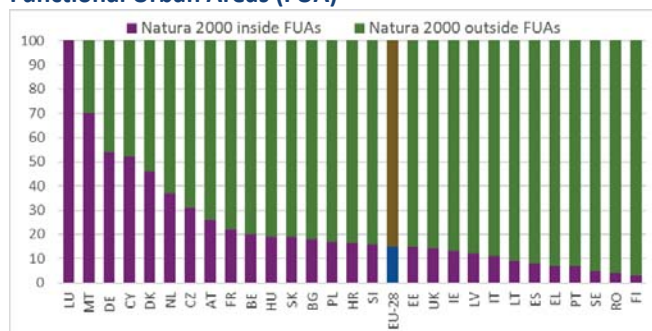
<sup>89</sup> [Socialcar project, Luxembourg](#).

<sup>90</sup> European Commission, Eurostat, [Pollution, grime or other environmental problems by degree of urbanisation](#).

<sup>91</sup> Eurostat, [Definition of Functional Urban Areas](#).

types of “zones”. They specifically focus on avoiding further urban sprawl and landscape fragmentation. The legal procedure to adopt the plan is ongoing.

**Figure 20: Proportion of the Natura 2000 network in Functional Urban Areas (FUA) <sup>92</sup>**



To complement the Landscapes Masterplan, the public consultation procedure was launched in May 2018 for three more national sectoral masterplans, dealing with “Transports”, “Economic Activity Zones” and “Housing”. The overall aim of this consolidated development planning effort is to lessen traffic congestion, to improve the public transport share as compared to car transport share, shorten the distances between living-working-recreating, and to mitigate the housing and economic areas shortages, in a way compatible with the overall objectives of safeguarding good living conditions for all and of reducing land and resource consumption. All four masterplans duly integrate the recommendations of their respective strategic environmental assessment.

Several projects on nature and cities have been carried out or are ongoing in the country. The ‘Alzette’ project<sup>93</sup> involved restoration work on a river corridor along the course of the Alzette River between the towns of Esch-sur-Alzette and Hesperange. The ‘LIFE grassland Luxembourg’<sup>94</sup> project focuses on protecting endangered grassland habitats and animal species that depend on these habitats. The project targets 15 Natura 2000 sites in the western part of the ‘Gutland’ area of Luxembourg. The ‘LIFE Orchis’<sup>95</sup> project’s main objective is to secure and restore all calcareous grasslands that have been known to exist in southeast Luxembourg.

### Urban sprawl

Luxembourg had a relatively high weighted urban

proliferation of 4.01 UPU/m<sup>2</sup><sup>96</sup> in 2009 against a European average (EU28+4) of 1.64 UPU/m<sup>2</sup>. This marked an increase of 3.88 % between 2006 and 2009<sup>97</sup>.

### Traffic congestion and urban mobility

The car remains by far the favourite means of transport. The proportion of passenger cars in 2015 in the modal split was 82.9 % (EU average: 81.3 %)<sup>98</sup>. On the number of passenger cars per thousand inhabitants in 2015, Luxembourg was the highest in the EU with 661 (EU average: 497)<sup>99</sup>.



In terms of hours spent annually in road congestion, Luxembourg ranks fifth in the EU, with the number increasing from 31.15 in 2014 to 35.18 in 2016<sup>100</sup>. Compared to other EU cities, Luxembourg City is the 32nd most congested city out of the 215 cities on the list, with a congestion level of 33 %.

When asked how often residents are most likely to use a car daily, Luxembourg was third with 65 %. In terms of daily use of public transport, Luxembourg was fifth with 20 %. A very small proportion of respondents (4 %) in Luxembourg use a bike daily. Just over half of people (56 %) who live in cities walk every day compared to the European average of 68 %<sup>101</sup>.

Of the main challenges observed in this report, air quality — to an extent related to traffic congestion — must be made a priority at the local level. In order to address these issues, the Ministry of Sustainable Development and Infrastructure has launched several integrated urban planning processes. These take the form of agreements (*conventions*) between the ministry, the cities and their adjacent municipalities. Conventions promote inter-

<sup>92</sup> European Commission, [the 7<sup>th</sup> Report on Economic, Social and Territorial Cohesion](#), 2017, p. 121.

<sup>93</sup> ‘Ecological valorisation of the Alzette’s upper valley’ (02/1999-05/2006).

<sup>94</sup> ‘LIFE grassland Luxembourg — Conservation and management of species-rich grasslands by local authorities (06/2014-06/2019).

<sup>95</sup> ‘LIFE Orchis’ — Restoration of calcareous grassland in eastern Luxembourg (09/2014 – 08/2019).

<sup>96</sup> Urban Permeation Units measure the size of the built-up area as well as its degree of dispersion throughout the region.

<sup>97</sup> EEA, [Urban Sprawl in Europe, Annex I](#), 2014, pp.4-5.

<sup>98</sup> European Commission, [Transport in the European Union Current Trends and Issues](#), 2018, p. 85.

<sup>99</sup> [Eurostat, Energy, transport and environment indicators 2017, p. 95.](#)

<sup>100</sup> [European Commission, Hours spent in road congestion annually.](#)

<sup>101</sup> European Commission, Special Eurobarometer 406, [Attitudes of Europeans towards urban mobility](#), pp.7-10.



municipal and multilevel cooperation to foster sustainable regional development, promote integrated planning and address specific development issues. In this context, conventions facilitate the vertical cooperation between the State and municipalities with the aim of implementing the objectives established in territorial strategies, such as the Master Programme for Spatial Planning (PDAT) and the new Strategy for Sustainable Mobility (MoDu 2.0)<sup>102</sup>. Furthermore a national air quality programme was adopted.

More sustainable mobility has been encouraged through a number of recent measures. These include the 2017 tax reform (see Chapter 5 on green taxation) and significant investment in public transport. In May 2018, the Government adopted the new sustainable mobility strategy (*MoDu 2.0*)<sup>103</sup>. This strategy builds on the progress since the previous strategy of 2012, extending the range of mobility measures. It also addresses more explicitly the four mobility players, namely the public, local councils, employers and the State. MoDu 2.0's strategic objective for 2025 is to reduce peak-hour congestion while transporting 20 % more people than in 2017.

Projects are ongoing to promote research collaboration to develop smart and sustainable multimodal mobility-on-demand transit solutions for sustainable urban mobility<sup>104</sup>. A new car-pooling platform, CoPilote, was introduced to alleviate the traffic situation, particularly commuter traffic. The CoPilote website and free mobile application cover the whole of the Greater Region<sup>105</sup> and help to match people with similar journey routes wishing to use car-pooling. The goal behind CoPilote is: (i) to achieve a car occupancy rate of 1.5 persons on journeys from home to place of work by 2025; (ii) to reduce the number of vehicles on Luxembourg's roads by 50 000 per day; and (iii) to cut CO<sub>2</sub> emissions by 130 000 tonnes per year<sup>106</sup>.

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<sup>102</sup> The Government of Luxembourg, [MoDu 2.0 Luxembourg](#).

<sup>103</sup> The Government of Luxembourg, [MoDu 2.0 Luxembourg](#).

<sup>104</sup> European Commission, [Transport Research and Innovation Monitoring and Information System](#).

<sup>105</sup> The area of Saarland, Lorraine, Luxembourg, Rhineland-Palatinate, Wallonia and the rest of the French Community of Belgium, and the German-speaking Community of Belgium.

<sup>106</sup> [CoPilote — Roulez ensemble, roulez mieux](#).

## Part II: Enabling framework: implementation tools

### 4. Green taxation, green public procurement, environmental funding and investments

#### Green taxation and environmentally harmful subsidies

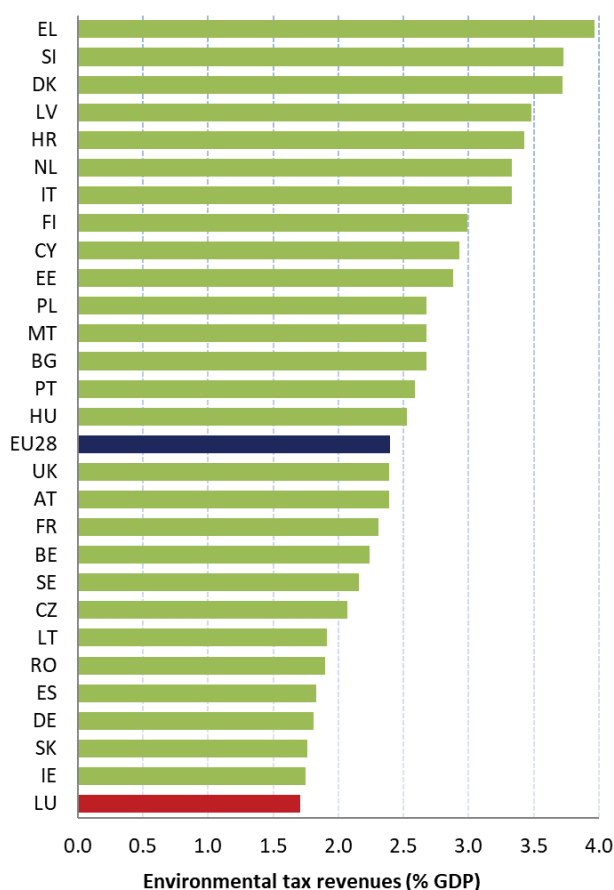
Financial incentives, taxation and other economic instruments are effective and efficient ways to meet environmental policy objectives. The circular economy action plan encourages their use. Environmentally harmful subsidies are monitored in the context of the European Semester and the energy union governance process.

Luxembourg's revenue from environment-related taxes remains lower than the EU average. Environmental taxes accounted for 1.71 % of the Gross Domestic Product (GDP) in 2017 (EU-28 average: 2.4 %) as shown in Figure 21. Energy taxes accounted for 1.57 % of GDP against an EU average of 1.84 %<sup>107</sup>. In the same year, environmental tax revenue was 4.25 % of total revenue from taxes and social security contributions. This was lower than the EU-28 average of 5.97 %. Therefore, there is a scope to increase environmental taxation.

The Commission has repeatedly pointed out in the European Semester that Luxembourg's environmental tax revenue as a proportion of GDP has steadily decreased over the last 10 years. In the 2018 country report, it highlighted that transport fuel tax rates are among the lowest in the EU. These provide an incentive for increased fuel consumption, including cross-border sales. This results in a highly negative ecological and health impact and contributes to traffic congestion<sup>108</sup>. Nevertheless, the tax reform applicable as of 1 January 2017 includes new measures to encourage 'sustainable mobility', supporting the purchase of battery electric vehicles, fuel cell electric vehicles, plug-in hybrid electric vehicles ( $\leq 50$  g CO<sub>2</sub>/km), pedelecs and bicycles<sup>109</sup>.

Meanwhile, fossil fuel subsidies have decreased in the past decade and, according to the OECD, no longer exist. Some tax exemptions remain in place for fossil fuels used in agriculture, horticulture or for heating<sup>110</sup>. These exceptions amounted to EUR 2 million in 2016.

Figure 21: Environmental tax revenues as % of GDP (2017)<sup>111</sup>



Tax treatment for company cars is not a cause for concern in Luxembourg<sup>112</sup>. No new fiscal measures were introduced for this type of car in 2018<sup>113</sup>. The use of less polluting vehicles is also encouraged by the tax reform applicable as of 2017 and by a re-evaluation system that lowers the costs of less polluting cars for employers. This incentivises employers to opt for those vehicles as a benefit in kind<sup>114</sup>. The national budget for 2018 also provided for a tax credit for investment by companies in battery electric vehicles and fuel cell electric vehicles. In January 2019, the 'Conseil de gouvernement' has adopted

<sup>107</sup> Eurostat, [Environmental tax revenues, 2018](#).

<sup>108</sup> European Commission, [European Semester Country Report 2018](#), p. 20.

<sup>109</sup> [Ministry of Sustainable Development and Infrastructure](#)

<sup>110</sup> OECD, [Inventory of Support Measures for Fossil Fuels](#), 2018.

<sup>111</sup> Eurostat, [Environmental tax revenues, 2018](#).

<sup>112</sup> European Commission, [Taxation of commercial cars in Belgium](#), 2017, p. 3. (NB: the document has been prepared for Belgium, but contains data also for the other Member States.)

<sup>113</sup> FleetEurope, [Major changes to company car taxation in Europe](#).

<sup>114</sup> European Commission, [European Semester Country Report 2018](#), p. 20.

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a draft decree establishing a scheme of financial aid for zero or low-emission vehicles.<sup>115</sup>

The proportion of new passenger cars using alternative fuels in Luxembourg was more than four times higher in 2014 and 2015 than in 2012. Most of these vehicles are electric vehicles. However, this figure decreased in 2016<sup>116</sup>.

### Green public procurement

The EU green public procurement policies encourage Member States to take further steps to apply green procurement criteria to at least 50 % of public tenders. The European Commission is helping to increase the use of public procurement as a strategic tool to support environmental protection.

The purchasing power of public procurement amounts to around EUR 1.8 trillion in the EU (approximately 14% of GDP). A substantial proportion of this money goes to sectors with a high environmental impact such as construction or transport. Therefore, green public procurement (GPP) can help to significantly lower the negative impact of public spending on the environment and can help support sustainable innovative businesses. The Commission has proposed EU GPP criteria<sup>117</sup>.

A national action plan (NAP) or a national strategy on GPP is currently not in place in Luxembourg. However, Luxembourg public procurement law formally encourages contracting authorities to make use of tender procedures to promote sustainable development. No target objectives, specific measures or mandatory criteria to promote GPP have been set. Some guidance on criteria that can be imposed is provided in the terms of reference and links on the EU's GPP website and toolkit. However, in 2017 the Government decided that in principle its own fleet vehicle (type M1) should be battery electric or plug-in hybrid vehicles, exceptions being justified.

A working group dealing specifically with the challenges and opportunities of public procurement in a circular economy has been set up. Some pilot projects have been launched or are being prepared. These will be valuable for developing guidelines for circular public procurement<sup>118</sup>.

### Environmental funding and investments

European Structural and Investment Fund (ESIF) rules oblige Member States to promote environment and climate in their funding strategies and programmes for economic, social and territorial cohesion, rural development and maritime policy.

Achieving sustainability involves mobilising public and private financing sources<sup>119</sup>. Use of the European Structural and Investment Funds (ESIFs)<sup>120</sup> is essential if countries are to achieve their environmental goals and integrate these into other policy areas. Other instruments such as Horizon 2020, the LIFE programme<sup>121</sup> and the European Fund for Strategic Investments (EFSI)<sup>122</sup> may also support the implementation and spread of good practices.

### European Structural and Investment Funds 2014-2020

Through three national programmes, Luxembourg has been allocated EUR 140 million from ESI Funds for 2014-2020. With a national contribution of EUR 316 million, a total budget of EUR 456 million will be invested in various areas. These include protecting the environment, creating greater economic diversification for jobs and growth and supporting social cohesion<sup>123</sup>.

All of Luxembourg's European Regional Development Fund (ERDF) amount is allocated to two of the thematic objectives: (i) research, technological development and innovation; and (ii) the shift towards a low-carbon economy. Of the funding allocated under the EAFRD, 63 % relates to the environment and climate. This will contribute to greenhouse gas emission reductions, help

<sup>115</sup> Subject to further conditions stipulated in the [draft decree](#), natural and legal persons purchasing the following new vehicles should become eligible for a financial aid in the form of a premium: 5,000 EUR for 100% electric cars and vans; 2,500 EUR for plug-in hybrid cars and vans, if the CO2 emissions do not exceed 50g/km; 25% of the price excluding VTA, up to a maximum amount of 500 EUR for quadricycles, motorcycles, light motorcycles (125 cm<sup>3</sup>) and autocycles (scooters and pedelecs 45); 25% of the price excluding VAT, up to a maximum amount of 300 EUR for bicycles and pedelecs.

<sup>116</sup> European Commission, [Transport in the European Union Current Trends and Issues](#), 2018, pp.86.

<sup>117</sup> In the Communication 'Public procurement for a better environment' ([COM \(2008\) 400](#)) the Commission recommended the creation of a process for setting common GPP criteria. The basic concept of GPP relies on having clear, verifiable, justifiable and ambitious environmental criteria for products and services, based on a life-cycle approach and scientific evidence base.

<sup>118</sup> European Commission, [Eco-Innovation Observatory, Country profile 2016-2017: Luxembourg](#), p. 23.

<sup>119</sup> See, for example, [Action plan on financing sustainable growth \(COM\(2018\) 97\)](#).

<sup>120</sup> i.e. the European Regional Development Fund (ERDF), the Cohesion Fund (CF), the European Social Fund (ESF), the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF). The ERDF, the CF and the ESF are referred to as the 'cohesion policy funds'.

<sup>121</sup> European Commission, [LIFE programme](#).

<sup>122</sup> European Investment Bank, [European Fund for Strategic Investments, 2016](#).

<sup>123</sup> European Commission, [European Structural and Investment Funds \(Country factsheet Luxembourg\)](#), 2017.

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stop the decline of biodiversity and improve water and soil management<sup>124</sup>.

### Cohesion policy

In 2014-2020, Luxembourg is managing two operational programmes under EU cohesion policy. One programme receives funding from the ERDF and one receives funding from the European Social Fund (ESF). For 2014-2020, Luxembourg has been allocated around EUR 59.7 million in cohesion policy funding (EUR 39.6 million for more developed regions and EUR 20.2 million for European territorial cooperation). Of this, the ESF funding amounts to a minimum of EUR 20 million<sup>125</sup>.

Luxembourg is participating in several European Territorial Cooperation Programmes, through which also activities targeting environmental topics are funded. The cross-border Programme 'Interreg Greater Region' has dedicated EUR 37.5 million (27% of the entire budgetary envelope) to support development considering the environment and quality of life. "EmiSûre" is a representative example for such type of cross-border projects addressing the introduction of micro-pollutants in the watercourse of the river Sûre, rallying partners from both Germany and Luxembourg behind a common ecological challenge.

The transnational Programme 'Interreg North-West Europe' has a budget of EUR 242 million from ERDF for priorities dealing with GHG-reduction as well as resource and material efficiency. For example, the project SeRaMCo, set up by a public-private partnership across Germany, Belgium, the Netherlands, France and Luxembourg, tackles the issue of high quality recycling of construction and demolition waste into cement and concrete production of new precast products like tubes.

Furthermore, the Programme 'Interreg Europe' supports cooperation across Europe and has allocated EUR 168 million for priorities on low-carbon economy and environment and resource efficiency. For example, the Naturpark Our cooperates in the project "Nightlight" with partners from the Netherlands, Hungary, Spain, Denmark, Slovenia and Italy in order to search solutions regarding light pollution.

### Rural development

EUR 101 million from the EAFRD is devoted to developing the agricultural sector and rural areas. This, together with EUR 267.4 million of national co-funding, increases the amount available for 2014-2020 to EUR 368 million.

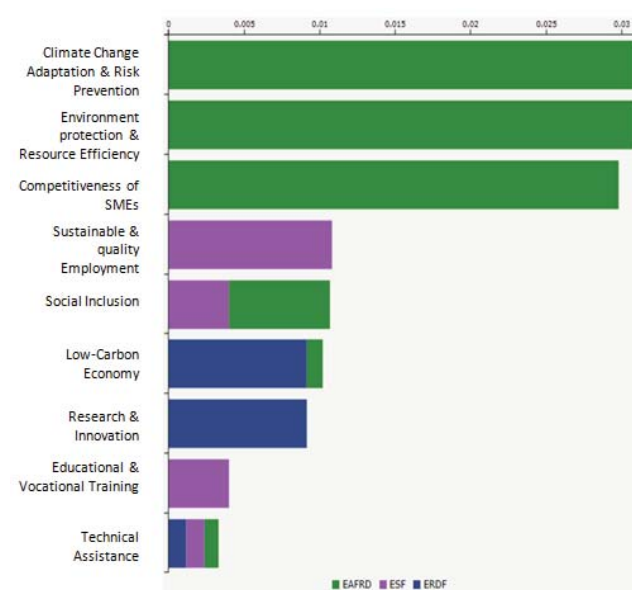
Almost 28 % of agricultural land in Luxembourg is expected to come under management contracts

supporting better water management. Similarly, nearly 11% will be under contracts to improve soil management. Finally, over 90 % of agricultural land will come under management contracts supporting biodiversity. 82 % of the country is classified as rural, with 38 % of the resident national population living in rural areas. 95 % of the utilised agricultural area faces natural constraints and the Natura 2000 areas cover 18 % of the national territory. To address the challenges, the Rural Development Plan (RDP) is centred on the following four rural development priorities:

- the viability and competitiveness of farms;
- restoring, preserving and enhancing ecosystems linked to agriculture and forestry;
- resource efficiency and climate;
- social inclusion and local development in rural areas<sup>126</sup>.

One of the EAFRD RDP projects ('Zettinger watermill') supported the renovation of a historic hydroelectric power plant run by a farm household on the banks of the Sûre River. This increased the watermill's annual energy yield from 10 to 20 %<sup>127</sup>.

**Figure 22: ESIF 2014-2020: EU allocation Luxembourg by theme, EUR billion**<sup>128</sup>



On integrating environmental concerns into the common agricultural policy (CAP), the two key areas are: (i) to use the EAFRD to pay for environmental land management and other environmental measures; and (ii) to ensure that the first pillar of the CAP is implemented effectively

<sup>124</sup> European Commission, [Summary of the Partnership agreement for Luxembourg](#), 2014, p. 2.

<sup>125</sup> European Commission, [Cohesion Policy and Luxembourg](#), 2014.

<sup>126</sup> European Commission: [Factsheet on 2014-2020 Rural Development Programme of the Grand Duchy of Luxembourg](#), 2015.

<sup>127</sup> European Commission: [CAP in your country, Luxembourg](#), 2017.

<sup>128</sup> European Commission, [European Structural and Investment Funds Data By Country](#).

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with regard to cross compliance and first pillar ‘greening’.<sup>129</sup> Luxembourg’s direct payment for 2014-2020 is EUR 236 million. Of this, 30 % is being allocated to greening practices that benefit the environment<sup>130</sup>.

### The Connecting Europe Facility (CEF)

By the end of 2017, Luxembourg had signed agreements for projects amounting to EUR 72 million under the CEF<sup>131</sup>.

During 2014-2017, five projects were selected, with Luxembourg beneficiaries receiving EUR 66.1 million in CEF transport funding. The vast majority of this, EUR 63.7 million, is supporting a project to eliminate a railway bottleneck between Luxembourg City and Bettembourg on the North Sea-Mediterranean Corridor. It also contributes to the joint ‘EuroCap-Rail’ project linking Brussels, Luxembourg and Strasbourg<sup>132</sup>.

### Horizon 2020

Luxembourg has benefited from Horizon 2020 funding since the programme started in 2014. As of January 2019, 67 participants have been granted a maximum amount of EUR 18.1 million for projects from the Societal Challenges work programmes dealing with environmental issues<sup>133 134</sup>.

In addition to the abovementioned work programmes, climate and biodiversity expenditure is present across the entire Horizon 2020. In Luxembourg, projects accepted for funding in all Horizon 2020 working programmes until December 2018 included EUR 18 million destined to climate action (17.3 % of the total Horizon 2020 contribution to the country) and EUR 1.5 million for biodiversity-related actions (1.4 % of the Horizon 2020 contribution to the country)<sup>135</sup>.

Luxembourg is participating in international projects to, among others, improve traffic flow using ‘connected

driving’ technologies, combined carpooling-public transport options and lightweight electric vehicles<sup>136</sup>.

### LIFE programme

Since its launch in 1992, the LIFE programme has co-financed a total of 22 projects in Luxembourg. Of these, 14 focus on environmental innovation and 8 on nature conservation. These LIFE projects cost a total of EUR 83 million, of which the EU provided EUR 31 million<sup>137</sup>.

Completed projects focused mainly on:

- construction and demolition waste,
- eco-friendly products,
- reducing emissions of greenhouse gases and air pollutants,
- sustainable construction,
- industrial waste,
- energy efficiency/savings in the automotive and building sectors,
- river basin management.

The ‘Bio Tyre’ is an example of a successful LIFE ‘Environment’ project in Luxembourg. It was one of the 23 projects awarded the title of ‘best LIFE Environment project 2009-2010’<sup>138</sup>.

Luxembourg currently has two ongoing LIFE projects. The first aims to develop a fully self-sufficient strand board and fibreboard production plant with no environmental impact. The second aims to develop and promote a new injection technology that will allow compressed natural gas to be directly injected into car engines, thus reducing harmful emissions<sup>139</sup>.

### European Investment Bank

In 2018, the EIB Group (the EIB and the European Investment Fund) invested EUR 86 million in Luxembourg, although there was no specific environmental spending, as shown in Figure 23.

In an EIB survey, 3 in 10 firms said that the priority for public investment over the next 3 years should be transport infrastructure<sup>140</sup>.

Currently, one project of environmental relevance is being evaluated, namely the renaturalisation of a 20 km stretch of the Alzette River between Luxembourg City

<sup>129</sup> [Regulation \(EU\) No 994/2014](#).

<sup>130</sup> European Commission: [CAP in your country, Luxembourg](#), 2017.

<sup>131</sup> European Commission, [European Semester Country Report for Luxembourg](#), 2018, p. 15.

<sup>132</sup> European Commission [CONNECTING EUROPE FACILITY \(CEF\) — Transport grants 2014-2017, Luxembourg](#).

<sup>133</sup> European Commission [own calculations based on CORDA \(Common Research Data Warehouse\)](#). A maximum grant amount is the maximum grant amount decided by the Commission. It normally corresponds to the requested grant, but it may be lower.

<sup>134</sup> i.e. (ii) Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy; (iii) Secure, clean and efficient energy; (iv) Smart, green and integrated transport; and (v) Climate action, environment, resource efficiency and raw materials.

<sup>135</sup> European Commission [own calculations based on CORDA \(Common Research Data Warehouse\)](#).

<sup>136</sup> European Commission, [Research & Innovation performance and Horizon 2020 country participation; Success stories for Luxembourg](#), 2018.

<sup>137</sup> [European Commission, LIFE in Luxembourg, 2017](#).

<sup>138</sup> Development and validation of ultra low rolling resistance tyre with environmentally friendly resources (‘Bio Tyre’), LIFE06 ENV/L/000118.

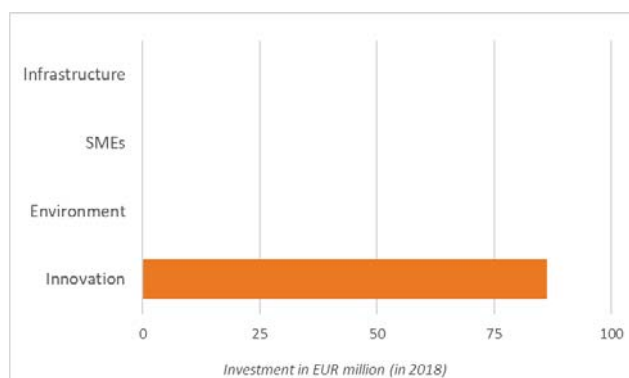
<sup>139</sup> European Commission, [LIFE programme — Country Factsheet; Luxembourg Overview](#).

<sup>140</sup> [EIB Investment Survey, Luxembourg](#), 2017, p. 7.

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and Mersch. The aim of this project is to reduce flood risk, boost biodiversity and improve water quality<sup>141</sup>.

**Figure 23: EIB loans to Luxembourg in 2018**<sup>142</sup>



### European Fund for Strategic Investments

Luxembourg is boosting take-up of the EFSI. By January 2019, operations approved under the EFSI amounted to a total of EUR 113 million. This is expected to trigger total private and public investment of EUR 595 million.

More specifically, three multi-country projects involving Luxembourg have so far been approved under the 'infrastructure and innovation' strand. This amounts to EUR 14 million in EIB financing under the EFSI and is expected to trigger around EUR 53 million in investments. Under the SME strand, five agreements with financial intermediaries have so far been approved. European Investment Fund financing provided via the EFSI amounts to EUR 75 million. This is expected to mobilise approximately EUR 231 million in total investment. Some 831 smaller companies or start-ups will benefit from this support. RDI ranks first in terms of amount of operations and funding, followed by SMEs<sup>143</sup>.

### National environmental financing

Luxembourg spent EUR 483.3 million on environmental protection in 2016, meaning a decrease of 5.9% from 2015. 26.3 % of these payments were allocated to waste management activities, against the EU average of 49.7 %. EUR 262 million were allocated to waste water management (54.2 % of the total) and EUR 26.1 million to pollution reduction (5.4 % of the total). 10.2 % of environmental expenditure was allocated to protecting biodiversity and the landscape (EUR 49.5 million). Between 2012 and 2016, total government funding for environmental protection was EUR 2.46 billion<sup>144</sup>.

Luxembourg has a strong track record of making sustainable investments and a leading European market share of investment funds with environmental strategies (38 %). It has developed a set of comprehensive investment fund tools. All Luxembourgish investment funds can be used for sustainable finance. The Green for Growth Fund<sup>145</sup> and the Global Climate Partnership Fund<sup>146</sup> are specialised in advance energy efficiency and renewable energy. In 2017, Luxembourg and the EIB have launched a Luxembourg-EIB Climate Finance Platform (LCFP)<sup>147</sup>. In October 2017, Luxembourg's Ministry of Finance and Ministry of Sustainable Development and Infrastructure launched the Forestry and Climate Change Fund<sup>148</sup> as a public-private partnership. Its role is to provide funding to help companies, communities and small farmers manage secondary and degraded forests in the tropics. Luxembourg's Government has committed EUR 30million until end 2019. Investments amounting to EUR 10 million (EUR 5million in Green for Growth Fund and EUR 5million in Land Degradation Neutrality Fund) have successfully been closed. Other projects are in pipeline.

As it has been mentioned through the report, one of the challenges for Luxembourg is to ensure that environmental financing remains at an adequate level. Existent financial gaps in areas such as nature protection and water quality are delaying the correct implementation of EU environmental law and policies. Therefore, ensuring financial resources to reduce the implementation gap should be considered as a priority for the country.

### 2019 priority action

- Ensure adequate funding, including through the mobilisation of investments and the use of EU funds, to tackle the main environmental challenges affecting the country.

<sup>141</sup> EIB, [Alzette River renaturalisation](#).

<sup>142</sup> European Investment Bank, [The European Investment Bank in Luxembourg: what we do](#), 2018.

<sup>143</sup> European Commission, [European Semester Country Report for Luxembourg](#), 2018, p. 15.

<sup>144</sup> Eurostat, [General Government Expenditure by function](#), 2018.

<sup>145</sup> [Green for Growth Fund](#).

<sup>146</sup> [Global Climate Partnership Fund](#).

<sup>147</sup> EIB, [innovative climate finance](#)

<sup>148</sup> The Luxembourg Government, [Forestry and Climate Change Fund](#).

## 5. Strengthening environmental governance

### Information, public participation and access to justice

Citizens can more effectively protect the environment if they can rely on the three ‘pillars’ of the Aarhus Convention:

- (i) access to information;
- (ii) public participation in decision making; and
- (iii) access to justice in environmental matters.

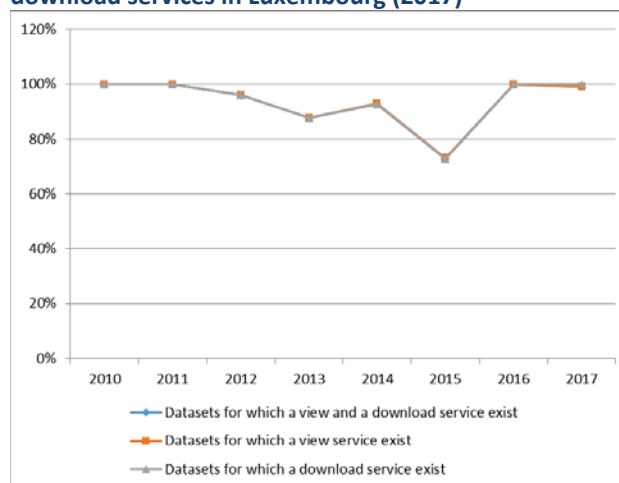
It is of crucial importance to public authorities, the public and business that environmental information is shared efficiently and effectively<sup>149</sup>. Public participation allows authorities to make decisions that take public concerns into account. Access to justice is a set of guarantees that allows citizens and NGOs to use national courts to protect the environment<sup>150</sup>. It includes the right to bring legal challenges (‘legal standing’)<sup>151</sup>.

#### Environmental information

Luxembourg has a national environmental portal<sup>152</sup> containing most of the relevant information such as legislation, data and other documents. While other websites exist for some domains, these do not contain much additional data. It was found that very little monitoring or historical data is available on the portal. Often, the available data are presented in interactive graphs without a download option or the data must be downloaded from the European Environmental Agency. The main portal is sometimes difficult to navigate and it is not always clear where particular information can be found. The Open data Platform<sup>153</sup> however contains a lot of datasets that can be freely reused. Several datasets contain historical and monitoring data as well as spatial information. The geoportal presents all relevant environmental layers and can be accessed from the main portal. It is also the access point for the EU’s INSPIRE portal, which contains data in many different formats and provides access to viewing services.

The INSPIRE Directive has been well implemented in Luxembourg. The country’s performance has been reviewed based on its 2016 implementation report<sup>154</sup> and its most recent monitoring data from 2017<sup>155</sup>.

**Figure 24: Access to spatial data through view and download services in Luxembourg (2017)**



#### Public participation

In Luxembourg, the most important law is the Law of July 2005 on access to information, public participation and access to justice on environmental matters. This is complemented by a number of additional sector-specific laws<sup>156</sup>. The public procurement portal<sup>157</sup> enables members of the public to view ongoing and past public consultations and submit opinions.

The consultation process in Luxembourg has been identified as good practice in the Commission’s better regulation toolbox<sup>158</sup>.

Eurobarometer figures from 2017 show a high proportion of people in Luxembourg who believe that individuals can play a role in protecting the environment (90 % of respondents). This has increased since 2014.

#### Access to justice

The 1999 law on the rules of procedure before the administrative jurisdictions<sup>159</sup> foresees a general remedy for everyone that has a personal, direct, current or certain interest. Since 2007, such interest is presumed for all environmental associations<sup>160</sup>. Although this is

<sup>149</sup> The Aarhus Convention, the Access to Environmental Information Directive, 2003/4/EC and the INSPIRE Directive, 2007/2 together create a legal foundation for the sharing of environmental information between public authorities and with the public. This EIR focuses on INSPIRE.

<sup>150</sup> The guarantees are explained in Commission Notice on access to justice in environmental matters, OJL 275, 18.8.2017 and a related Citizen’s Guide.

<sup>151</sup> This EIR looks at how well Member States explain access to justice rights to the public, and at legal standing and other major barriers to bringing cases on nature and air pollution.

<sup>152</sup> The Luxembourg Government, [National environmental portal](#).

<sup>153</sup> [The Luxembourgish data platform](#).

<sup>154</sup> INSPIRE LU [country sheet](#) 2017.

<sup>155</sup> INSPIRE [monitoring dashboard](#).

<sup>156</sup> [The Luxembourg Government](#).

<sup>157</sup> The Luxembourg Government, [The public procurement portal](#).

<sup>158</sup> The Luxembourg Government, [The public consultation process](#).

<sup>159</sup> The Luxembourg Government, [Official Journal](#).

<sup>160</sup> Tribunal administratif, 7 décembre 2007 (23703)

commonly known by all actors, the general public need to be better informed about effective remedies available to help individuals and environmental associations access to justice in environmental matters under Luxembourg and EU law. The official website<sup>161</sup> [guichet.lu](http://guichet.lu) provides practical information, contact details, a form for lodging complaints and an overview of environmental law, including links. Similar pages exist for the Water Management Agency and the Nature and Forestry Agency. However, these do not concern access to justice and cannot replace structured and user-friendly information available online from public authorities.

Every administrative decision has to contain mandatory information concerning remedies.<sup>162</sup> Even if in accordance with the law on public administration an individual act must specify the appeal procedure, this does not apply to general administrative acts. In particular for those acts it is important that information is easily available and user friendly. This is not the case currently.

In Luxembourg there are no fees involved in taking a case to court. However, individuals and NGOs have to cover the costs of lawyers, experts, witnesses and bailiffs. The new penal code sets out a 'loser pays' principle meaning that legal fees are charged to the losing party. Generally speaking, however, legal fees do not cover the costs of hiring a lawyer. Whether or not procedural indemnities also cover lawyers is left to the judge's discretion. A study<sup>163</sup> has found that lawyers' fees in Luxembourg are high and may be a deterrent to bringing cases forward.

### 2019 priority actions

- Improve access to spatial data and services by making stronger linkages between the country INSPIRE portals, identify and document all spatial datasets required for the implementation of environmental law, and make the data and documentation at least accessible 'as is' to other public authorities and the public through the digital services foreseen in the INSPIRE Directive.
- Ensure that there is legal standing for environmental NGOs to bring legal challenges on environmental issues, where relevant without facing prohibitive costs.
- Better inform the public about their access to justice rights.

<sup>161</sup> The Luxembourg Government, [Ministry of the Economy portal](#)

<sup>162</sup> The Luxembourg Government, [Art.14 of the grand-ducal order of 8th june 1979 concerning the procedure to be followed by the administrations of the state and municipalities.](#)

<sup>163</sup> Biot-Stuart, C., (2013), *Study on the Implementation of Article 9.3 and 9.4 of the Aarhus Convention — Country study for Luxembourg*, European Commission, DG Environment (Study contract 070307/2013/A2).

### Compliance assurance

Environmental compliance assurance covers all the work undertaken by public authorities to ensure that industries, farmers and others fulfil their obligations to protect water, air and nature, and manage waste<sup>164</sup>. It includes support measures provided by the authorities, such as:

- (i) compliance promotion<sup>165</sup>;
- (ii) inspections and other checks that they carry out, i.e. compliance monitoring<sup>166</sup>; and
- (iii) the steps that they take to stop breaches, impose sanctions and require damage to be remedied, i.e. enforcement<sup>167</sup>.

Citizen science and complaints enable authorities to focus their efforts better. Environmental liability<sup>168</sup> ensures that the polluter pays to remedy any damage.

### Compliance promotion and monitoring

The quality of online information for farmers on how to comply with obligations on nitrates and nature is an indicator of how actively authorities promote compliance in subject-areas with serious implementation gaps. Official websites in Luxembourg include some relevant information on farmers' obligations and on handling fertilisers<sup>169</sup>. However, this information is not comprehensive.

Major industrial installations pose serious pollution risks. Public authorities are required to inspect them and make individual inspection reports available to the public<sup>170</sup>. The website of the Environmental Agency of Luxembourg includes information on inspection planning and full inspections reports. These include the name of the operator inspected, the non-compliance identified and the recommendations given to the operator<sup>171</sup>.

### Citizen science and complaint handling

Engaging members of the public, including through citizen science, can boost their knowledge of the environment and help the authorities in their work. No information was found on the use of citizen science in Luxembourg. The availability of clear online information

<sup>164</sup> The concept is explained in detail in the Communication on 'EU actions to improve environmental compliance and governance' [COM\(2018\)10](#) and the related Commission Staff Working Document, [SWD\(2018\)10](#).

<sup>165</sup> This EIR focuses on the help given to farmers to comply with nature and nitrates legislation.

<sup>166</sup> This EIR focuses on inspections of major industrial installations.

<sup>167</sup> This EIR focuses on the availability of enforcement data and co-ordination between authorities to tackle environmental crime.

<sup>168</sup> The Environmental Liability Directive, 2004/35, creates the framework.

<sup>169</sup> The Luxembourg Government, [The Landwirtschafts-Portal](#)

<sup>170</sup> Article 23, [Industrial Emissions Directive, 2010/75/EU](#).

<sup>171</sup> Government of Luxembourg, [IED emissions](#).



on how to make a complaint is an indicator of how responsive authorities are to complaints from the public. The [guichet.lu](http://guichet.lu) portal provides easily accessible information on how to make a complaint and offers specific online forms for individual environmental subject areas<sup>172</sup>.

### Enforcement

When problems are identified as a result of monitoring, a range of responses may be appropriate. While inspection reports in Luxembourg are published online, information is missing on: (i) warnings issued; (ii) sanctions applied; and (iii) compliance achieved after follow-up measures and enforcement action. No publicly available information was found on responses to cross-compliance breaches involving nitrates and nature.

Tackling environmental crime, including crime involving waste and wildlife, is especially challenging. As such, it requires close cooperation and coordination between inspectors, customs authorities, police and prosecutors. No information could be found on the official Luxembourg websites on formal or informal cooperation arrangements between these players.

### Environmental liability

The Environmental Liability Directive (ELD) establishes a framework based on the ‘polluter pays’ principle to prevent and remedy environmental damage. The 2017 EIR focused on better information on environmental damage, financial security and guidance. The Commission is still collecting evidence on the progress made.

### 2019 priority actions

- Better inform the public about compliance promotion, monitoring and enforcement.
- Ensure more information on how professionals dealing with environmental crime work together.
- Improve financial security for liabilities and ELD-guidance and publish information on environmental damage.
- Publish information on outcomes of enforcement action and of the follow-up to detected cross-compliance breaches on nitrates and nature.

<sup>172</sup> The Luxembourg Environmental Agency, [Filing an administrative complaint with the Environment Agency](#).

## Effectiveness of environmental administrations

Those involved in implementing environmental legislation at EU, national, regional and local levels need to have the knowledge, tools and capacity to ensure that the legislation and the governance of the enforcement process bring about the intended benefits.

### Administrative capacity and quality

Luxembourg scored 79.12 in the 2018 environmental performance index and ranks 7 out of 180 countries<sup>173</sup>. Luxembourg’s scores for executive capacity and executive accountability on the Bertelsmann sustainable governance index were 6.8 and 8 respectively. Both of these figures were above the respective EU-28 averages of 6.1 and 6.3<sup>174</sup>.

### Coordination and integration

As mentioned in the 2017 EIR report, the transposition of the revised EIA Directive<sup>175</sup> provides an opportunity to streamline the regulatory framework on environmental assessments. Despite an initial delay, Luxembourg has now transposed the revised Directive.

The Commission encourages the streamlining of environmental assessments in order to reduce duplication. Moreover, streamlining helps to reduce unnecessary administrative burden and accelerates decision-making, without compromising the quality of the environmental assessment procedure<sup>176</sup>. Luxembourg has introduced the coordination of environmental assessments under the EIA, Habitats, Water Framework and Industrial Emissions Directives.

### Adaptability, reform dynamics and innovation (eGovernment)

Based on Europe’s Digital Progress Report 2018, Luxembourg scored 0.54/1 for ‘digital public services’. This is lower than the EU-28 average of 0.58/1<sup>177</sup>. With a score of 7.0, Luxembourg performs above the EU and

<sup>173</sup> Yale Center for Environmental Law & Policy, 2018 [Environmental Performance Index](#), Yale University, p. 4.

<sup>174</sup> Bertelsmann Stiftung (2017), [Sustainable Governance Indicators, executive capacity and executive accountability](#).

<sup>175</sup> [Directive 2014/52/EU](#).

<sup>176</sup> The Commission issued a guidance document in 2016 regarding the setting up of coordinated and/or joint procedures that are simultaneously subject to assessments under the EIA Directive, Habitats Directive, Water Framework Directive, and the Industrial Emissions Directive, OJ C 273, 27.7.2016, p. 1.

<sup>177</sup> European Commission, [Europe’s Digital Progress Report \(EDPR\)](#), 2017, Country Profile Luxembourg, p. 10.

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sample average for ‘domestic adaptability’ on the sustainable governance indicators<sup>178</sup>.

Little information is available on how the Environment Administration or other bodies respond to feedback<sup>179</sup>. There are some examples of specific initiatives to create dialogues between different stakeholders, including the EU institutions and civil society. One such example is the clean air dialogue set up between the Environment Administration and the European Commission. The purpose of this dialogue was to develop policies to address poor air quality linked to road traffic, agriculture and biomass combustion in residential areas<sup>180</sup>. In addition, representatives from Luxembourg’s Ministry for Sustainable Development have attended conferences and meetings to support capacity building in specific areas. One example is the use of statistics to support environmental policy in the following areas<sup>181</sup>:

- climate change — implementation of the Effort Sharing Decision (DG CLIMA);
- 2020 indicators and sustainable development indicators (Eurostat);
- EIONET meetings (European Environment Agency);
- working group on environmental information (OECD)

The Department of the Environment has a number of initiatives to support environmental governance in Luxembourg. These included:

- providing environment-related information through public broadcasting, i.e. documentaries to promote diverse issues including biodiversity protection and waste management<sup>182</sup>;
- creating a platform for education on the environment and sustainable development in 2012. In 2017, it had over 200 members;
- creating an interministerial committee for education on sustainable development (CIEDD);
- developing a new mobile application to help people submit legal complaints to the Environment Agency;
- implementing coordination projects in specific areas (e.g. with the ECHA on REACH, with online stores to control the sale of goods online, and

with customs and excise on the import of pesticides and biocides)<sup>183</sup>.

### Enabling financing and effective use of funds

Luxembourg’s authorities have a long experience in the management of EU funding and no major problems arise in this respect.

### 2019 priority action

- Luxembourg can further improve its overall environmental governance (such as transparency, citizen engagement, compliance and enforcement, as well as administrative capacity and coordination).

### International agreements

The EU Treaties require the EU environmental policy to promote measures at international level to deal with regional or worldwide environmental problems.

The EU is committed to strengthening environmental law and its implementation globally. It therefore continues to support the Global Pact for the Environment process, which was launched by the United Nations General Assembly in May 2018<sup>184</sup>. The EIR is one of the tools to ensure that the Member States set a good example by respecting European Union environmental policies and laws and international agreements.

Luxembourg has signed and ratified almost all Multilateral Environmental Agreements. It has signed and ratified the Nagoya Protocol on 27 February 2015.

### Forests: EU Timber Regulation (EUTR)<sup>185</sup>/ Forest Law Enforcement, Governance and Trade (FLEGT) Regulation<sup>186</sup>

Between March 2015 and February 2017, Luxembourg carried out 12 checks on operators placing domestic timber on the EU market for the first time and 17 checks on operators importing timber. These numbers are in line with the number of checks that Luxembourg had planned for this period<sup>187</sup>. It is estimated that 200 operators in Luxembourg placed domestic timber on the EU market for the first time in this period and that 245 imported timber.

In the EU, Luxembourg has the shortest potential maximum imprisonment sentence of 30 days. It has not

<sup>178</sup> Domestic adaptability is defined as the extent that the government responds to international and supranational developments by adapting domestic government structures.

<sup>179</sup> [The Luxembourg Environment Agency](#).

<sup>180</sup> The Luxembourg Government, [Rapport d’activité 2017, Ministère du Développement durable et des Infrastructures, Département de l’environnement](#), April 2018, p. 111.

<sup>181</sup> p.31 *ibid.*

<sup>182</sup> p.7 *ibid.*

<sup>183</sup> Pp. 68-69 *ibid.*

<sup>184</sup> [UN General Assembly Resolution 72/277](#) and [Organizational session of the ad hoc open-ended working group](#).

<sup>185</sup> [Regulation \(EU\) No 995/2010](#).

<sup>186</sup> [Regulation \(EC\) No 2173/2005](#).

<sup>187</sup> 13 checks on operators of domestic timber and 17 checks on operators importing timber were planned for the period 2015-2017.

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yet issued any penalty against operators infringing their obligations under the EUTR.

### Genetic resources: Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising (ABS)<sup>188</sup>

Luxembourg has appointed competent authorities for the purposes of the EU ABS Regulation. It has also introduced sanctions for infringements of the same Regulation. No due diligence declaration has been submitted so far and no penalties have been applied. Luxembourg submitted its first report to the Commission on the implementation of the EU ABS Regulation at the end of 2017.

### International wildlife trade: the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)<sup>189</sup>

The Basic Regulation<sup>190</sup> transposes the major obligations stemming from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) into EU law. To comply with these obligations, Luxembourg set up relevant national authorities and is processing requests for import and (re-)export and intra-EU trade documents on a regular basis.

In order to be more effective concerning illegal wildlife trade, Luxembourg has adopted a new law on CITES in July 2018, introducing higher penalties for wildlife trafficking.<sup>191</sup> After the adoption, Cargolux (the national Cargo airline) signed the "United for Wildlife International Taskforce on the Transportation of Illegal Wildlife Products declaration".

Reports on seizures of illegal shipments testify to the activity of customs authorities. Such reports include those forwarded to TRAFFIC every 6 months and those exchanged through the EU-TWIX platform.

### Sustainable development and the implementation of the UN SDGs

Sustainable development links environmental, social and economic policies in a coherent framework and therefore helps to implement environmental legislation and policies.

The law of 25 June 2004 introduced the national plan for sustainable development, which is coordinated by the Interdepartmental Commission for Sustainable

Development. The third national plan was adopted by the Government in 2018 and specifies Luxembourg's priority areas for sustainable development at national and international level. It also sets out ten specific priorities including 17 global SDGs and proposes measures for implementing them.

In 2016, Luxembourg's Ministry of the Economy published its 'Third Industrial Revolution' strategy. This outlines plans to support sustainable development in Luxembourg through innovation<sup>192</sup>. One of the provisions in the strategy is the Luxembourg Sustainable Development Finance Platform. This acts as an intermediary for financing sustainable development<sup>193</sup>.

The Higher Council for Sustainable Development is a discussion forum. It launched a campaign called '#MengAktioun' aimed at public institutions and civil society. These players are given the chance to present their projects that help implement the 2030 Agenda using an online platform.

The National Voluntary Review submitted to the UN in 2017 enabled Luxembourg to share its experiences in this area. It also allowed it to draw attention to its specific national characteristics and challenges<sup>194</sup>.

The International Finance Corporation decided to set up the Green Cornerstone Bond Fund, the world's largest green bond fund dedicated to emerging markets, in Luxembourg<sup>195</sup>. Luxembourg hosted the Sustainable Finance Forum on 30 May 2018. This addressed key regulatory and market challenges and the asset management industry's role in sustainable investment. It also looked at how capital markets can contribute to a sustainable low-carbon economy to meet the UN Sustainable Development Goals and the climate change ambitions of the Paris Agreement<sup>196</sup>.

In October 2018, Luxembourg has launched the Luxembourg sustainable finance roadmap<sup>197</sup>. The roadmap, drafted in partnership with UNEP, and based on a consultation of the financial industry and civil society, establishes an ambitious vision and makes recommendations to lay the groundwork to establish a comprehensive and far-reaching sustainable finance strategy, notably leveraging Luxembourg's inherent strengths as an international financial centre, to contribute to the Agenda 2030 and the objectives of the Paris Agreement.

<sup>188</sup> [Regulation \(EU\) No 511/2014](#).

<sup>189</sup> [The Convention on International Trade in Endangered Species of Wild Fauna and Flora \(CITES\)](#).

<sup>190</sup> [Council Regulation \(EC\) No 338/97](#).

<sup>191</sup> Loi du 9 juillet 2018 relative à certaines modalités d'application et aux sanctions du règlement (CE) n° 338/97 du Conseil du 9 décembre 1996 relatif à la protection des espèces de faune et de flore sauvages par le contrôle de leur commerce

<sup>192</sup> The Ministry of the Economy, '[Third Industrial Revolution' strategy](#)

<sup>193</sup> The Ministry of the Economy, '[Third Industrial Revolution' portal](#)

<sup>194</sup> [Sustainable Development Goals — Voluntary National Review 2017](#)

<sup>195</sup> [LuxembourgForFinance](#): Agency for the Development of the Financial Centre.

<sup>196</sup> Luxembourg For Finance, [Sustainable Finance Forum](#).

<sup>197</sup> [Luxembourg sustainable finance roadmap](#).