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Greening the economy: EU membership as a driver for change in south-east Europe*

Abstract

With ever-growing sensibilities concerning environmental protection, the shift towards a greening the economy is becoming a top priority. In order to realise sustainable development, however, sufficient resources are required, as well as an innovative approach based on social needs, environmental considerations and other aspects of social responsibility. The authors focus in this article on how a selection of south-east European countries have started to implement a broad spectrum of policies in support of a more sustainable economy, reviewing the choices in this area made by Bosnia and Herzegovina, Croatia, Greece, Romania and Slovenia. The article also discusses the major drivers and barriers to greening the economy, in particular how far EU membership is a major driver. The authors conclude that the main barriers impeding change are usually internal, as a result of policies remaining dependent on national governments and domestic social attitudes. However, access to European funds as a result of EU membership may well, where the local will is in accordance, encourage moves in support of a green transition.

Keywords: *environment, south-east Europe, green finance, private and public investment, green transition, public procurement, EU membership*

Introduction

With the ever-growing sensibility concerning the need to protect the environment, encompassing scientists and ordinary people alike, the shift towards a greener economy is becoming a top priority worldwide. For a successful implementation of a sustainable approach to development, however, an adequate amount of financial resources is required. An innovative approach to financing green investment is starting to put distance from the neo-classical approach, based on a consideration of the maximisation of profits and the minimisation of risk, as the major factor in financial engineering. Such an innovative approach takes, instead, social needs, environmental considerations and other aspects of social responsibility into account as equally relevant aspects of decision-making. Such a new strategy definitively requires a 'smarter' use of finance, which can be seen as rising above the conventional parameters imposed by previous schools of economic thought.

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In this article, we focus attention on how south-east European countries have started to implement a broad spectrum of policies in support of a more sustainable economy. In particular, following this introduction, we review the choices being made by five Balkan countries – namely: Bosnia and Herzegovina; Croatia; Greece; Romania; and Slovenia – and report these countries' decisions and policy outcomes as well as the amounts of financial resources being invested in their approaches to sustainable economic development. In a third section, we go on to discuss the main prompts for and the barriers to greening the economy, seeking to establish above all how far being in the EU is itself a major driver as a result of the access to a vast amount of funds and the degree of legislative cohesion which are inherent in EU membership. We also set out some policy considerations alongside a conclusion.

Environmental performance of south-east European countries

Bosnia and Herzegovina

State issues

It is important to stress at the outset that Bosnia and Herzegovina is not a member of the EU although it has been actively changing its political and economic environment by forming closer ties with the EU, and also by engaging with other international organisations. In 2003, the European Council, in its Thessaloniki summit, proposed Bosnia as a potential candidate for EU membership. Accession negotiations started in November 2005 and, since then, a number of agreements between the EU and Bosnia and Herzegovina have taken place: visa facilitation and readmission agreements in 2008; the Interim Agreement on Trade and Trade-Related Issues in 2008; and a visa-free regime as regards the Schengen Area introduced for all Bosnian citizens with a biometric passport in 2010. In 2016, Bosnia and Herzegovina submitted its EU membership application.

Within the Bosnia and Herzegovina state-level administration are two almost independent entities: the Federation of Bosnia and Herzegovina; and Republika Srpska. Each of these entities has its own political structure and administration, with its own government, flag and coat of arms, president, parliamentary assembly, police, postal system and customs department. The population of the state is around 3.51 million inhabitants; therefore, it is a small country with a small market.

Green entrepreneurs

Interviews have been conducted in the context of one study into green entrepreneurship (Silajdžić *et al*. 2015). According to this, there is a general lack of awareness on the issue and a willingness to engage with it within society: most civil society organisations are not interested in investing in the green economy and neither are they familiar with such a concept; moreover, they do not intend to focus their activities on encouraging entrepreneurs to work in an environmentally sustainable way. When asked about the specific sectors that could be attractive for green entrepreneurship, five NGOs responded with sustainable construction (the use of natural materials in construction, use of sustainable methods in forestry, etc.); sixteen identified organic farming (organic production of grains/vegetables/fruits; cultivating medicinal

plants; and beekeeping), while eleven mentioned associated activities (organic food restaurants; eco-villages; etc.); and twelve pointed to the tourism sector, provided it was founded on a healthy lifestyle.

Furthermore, interviews with the owners of 22 small and medium enterprises have revealed some interesting findings on the environment for entrepreneurship in the country. Fourteen interviewees responded that difficulties in finding a job on the open market was the primary reason for them to start their own business, while only two considered it to be a new opportunity. This implies that it is existing social structures, along with the difficulties in finding a job, which primarily motivate individuals towards self-employment. When asked about interest in developing green businesses as an additional work component, only six interviewees responded positively while the other sixteen responded that they had no interest in this type of business.

Waste management

Concerning waste management, the Federation of Bosnia and Herzegovina introduced a system of operators in 2011. The first Rulebook on the management of packaging and packaging waste was published in 2011, becoming effective the following year. This was followed by the adoption of a Rulebook on the management of waste from electric and electronic products, which became effective from 2013.

The aim of the operator system is to contribute to the reduction of waste generation and to ensure that a higher amount of waste is recycled or reused. Manufacturers and the initial distributors of imported goods are subject to the rules and must manage and dispose properly of the waste that they or their products produce.

However, the predominant method for waste disposal in Bosnia and Herzegovina remains landfill. According to the Agency for Statistics of Bosnia and Herzegovina, between 2011 and 2015, the rate of waste permanently disposed of in landfill sites varied between 67 per cent and 79 per cent.

Renewables

There is no state-level legal framework on renewable energy. The 2002 Law on Transmission of Electric Power, Regulator and System Operator does not cover the development of the network to integrate more renewable energy into the transmission grid. There is also no guaranteed or priority access to the transmission network for renewable energy producers. In 2013, Bosnia and Herzegovina adopted a state-level Law on the Use of Renewable Energy Sources and Efficient Cogeneration (*Official Gazette FBiH* No. 70/13; *Official Gazette RS* No. 39/13, 108/13 and 79/15). Electricity generated from renewable sources are promoted through feed-in tariffs or feed-in premiums.

In 2016, Bosnia and Herzegovina submitted to the Energy Community Secretariat its National Renewable Energy Action Plan (NREAP), adopted by the Council of Ministers of Bosnia and Herzegovina in March 2016. The Plan is based on the country's target of 40 per cent renewable energy in gross final energy consumption by 2020, compared with 34 per cent in 2009. The Plan prescribes sectoral goals for the share of renewables in energy consumption: 52.4 per cent in the heating and cooling

sector; 56.9 per cent in the electricity sector; and ten per cent in the transport sector. According to the energy balance published by Eurostat, however, the country had, by 2014, already achieved a 42.3 per cent share of energy from renewable sources – thus achieving the target set later for 2020 – as a result of a revision of biomass data. This makes the national target meaningless for the comprehensive planning of the further promotion of renewable energy supply sources (RES).

In the Federation of Bosnia and Herzegovina, all incentivised renewable energy is bought by the renewable energy operator as a single buyer. The same body also issues guarantees of origin and sets up a registry of producers of renewable energy. The feed-in tariff is paid for energy generated from small hydro, wind and solar plants and financed through an uplift charge applied to end-users. The authorisation procedures are very lengthy, partly due to the complex administrative structure of the entity; there is no one stop shop for potential RES investors.

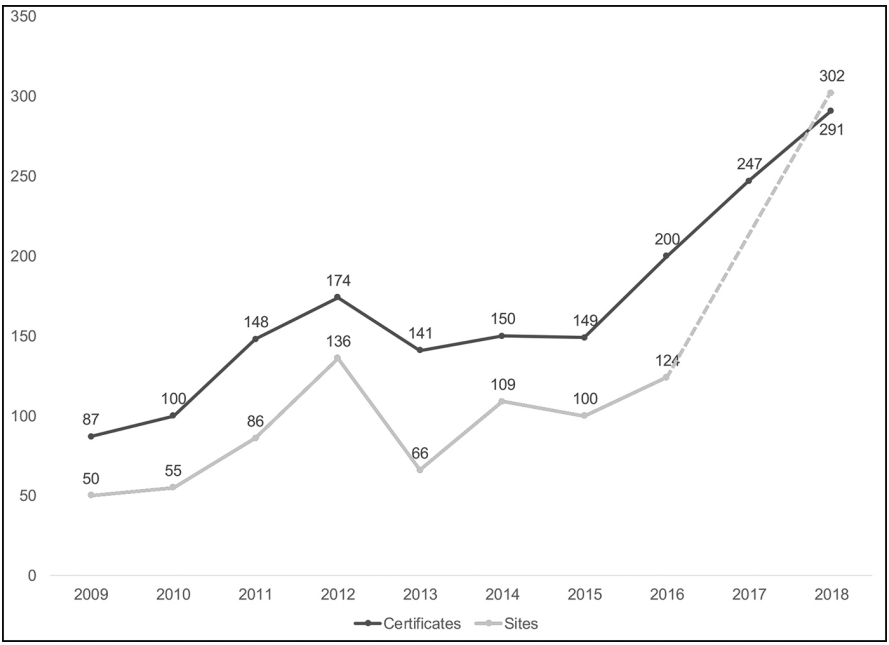
In Republika Srpska, support is granted for fifteen years. It can take the form of feed-in tariffs or premiums offered on top of an administratively-set electricity price and financed through an uplift charge required of all final customers. Administrative procedures for the authorisation of RES producers are regulated in numerous legal acts but there is also no one stop shop for potential investors here, either.

Environmental standards

Legally binding environmental standards in the Federation of Bosnia and Herzegovina and in Republika Srpska follow EU standards, but there are also several voluntary, albeit non-legally binding, environmental standards such as ISO 14001 and EMAS. The eco-labelling of products, corporate social responsibility and voluntary environmental reporting by companies are useful tools in the implementation and promotion of environmental standards.

The implementation of voluntary environmental standards is best highlighted by the number of ISO 14001 certificates issued in the period 2009-2015 (Figure 1 below). There is, however, no promotion by the authorities of voluntary environmental management systems which would act to increase the number of site operators.

Figure 1 – ISO 14001 certificates and sites, 2009-2018



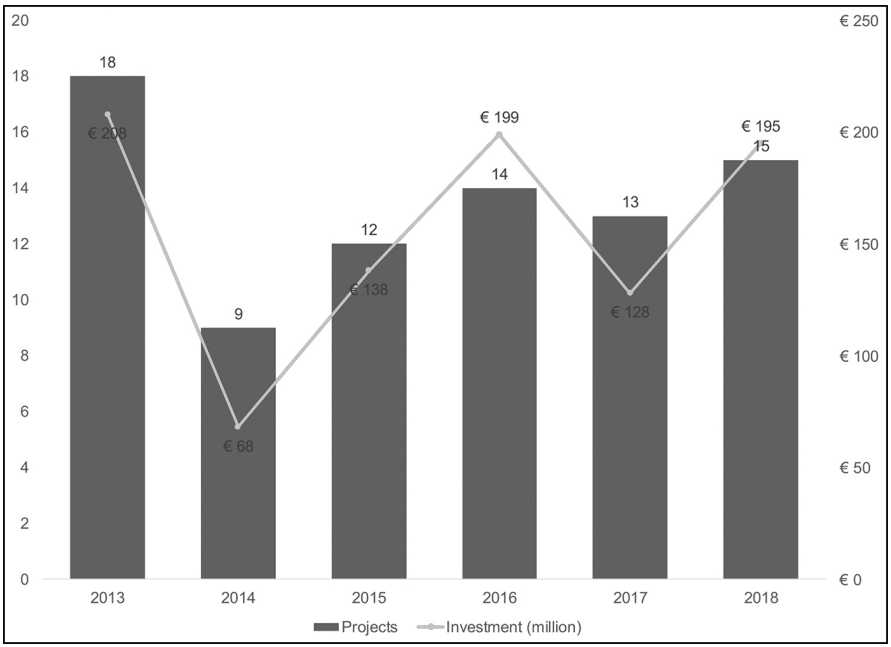
Source: *ISO Survey of certifications to management system standards, 2018* (available at: https://isotc.iso.org/livelink/livelink?func=ll&objId=18808772&objAction=browse&viewType=1).
NB data not published for number of sites in 2017.

Projects supported by the European Bank for Reconstruction and Development

Since it began operations in the country in 1996, the EBRD has invested €2.5bn over 165 projects, of which 86 per cent are related to sustainable infrastructure; and, since January 2019, some €270m across thirteen projects.

The city of Banja Luka received in 2016 a loan of €4m from the EBRD to finance improvements to the municipal water network, while the city of Zenica received a €46m loan package, comprising a €28m loan (€23m from the EBRD and €5m in concession financing from the International Cooperation and Development Fund of Taiwan) and a further loan of up to €18m provided by Banca Intesa Sanpaolo. This latter project aims to improve significantly the new local heat and power plant, that will no longer rely on heavily polluting coal, and will be implemented by a joint venture formed by ArcelorMittal Zenica, the City of Zenica, KPA Unicon (Finland) and Finnfund (Finland). On top of the significant environmental improvements, it will also realise the more cost-efficient production of energy.

Figure 2 – Annual number of projects and annual EBRD investment (€m)



Source: EBRD *Bosnia and Herzegovina data* (available at: https://www.ebrd.com/bosnia-and-herzegovina-data.html).

Barriers

According to the UNECE Environmental Performance Reviews published on the country, one major issue that Bosnia and Herzegovina is currently facing in the implementation of economic instruments for environmental protection, and in the adoption of measures to support developments in the green economy, is a shortage of available financial resources and intractable affordability issues.

Furthermore, weak economic conditions, and the significant presence of an inefficient, and often unprofitable, public sector, in particular in the management of natural resources and the provision of public utilities, limits the availability of financial resources for environmental protection, creating a vicious circle. Inefficiencies and the under-profitability of the public sector reflect the need to support employment and national product competitiveness (e.g. the wood and wood processing industries maintain timber prices at low levels). In turn, inefficiency and under-profitability limit the resources available to allocate to environmental protection and discourage private capital flows, causing a progressive deterioration of natural capital and, given that the most important activities in Bosnia and Herzegovina are based on the exploitation of natural resources (timber, energy, quarries and mines), a worsening of economic growth potential. In addition, the need to support household incomes and

to keep production costs low operates in conflict with the implementation of measures that are fully compliant with efficiency and effectiveness principles, and results in fees and tariffs being too low, natural resources being under-priced and the tolerance of activities which damage the environment (e.g. illegal logging).

In order to arrest this vicious cycle, it is necessary to attract private investment, increase the flow of international cooperation and environmental funding, and spur green economic growth for strategically beneficial results.

Croatia

Public attitudes

According to Special Eurobarometer 468 (European Commission 2017e), it is noticeable that there has been an increase in the number of Croatians, compared to the results of the same survey conducted in 2014, who believe that protecting the environment is fairly important: 47 per cent compared to the earlier figure of 35 per cent. Croatians also believe that air pollution (47 per cent) and the growing amount of waste (41 per cent) are the most important environmental issues. Compared to the 2014 survey, it is also possible to recognise a growing trend of support for stricter legislation in order to resolve environmental problems. More than one-half of respondents (51 per cent) believe that decisions on protecting the environment should be made by the national government, while a not insignificant percentage (40 per cent) agree that EU environmental legislation is necessary to protect the environment in Croatia.

Unfortunately, arising from the same survey we can understand that the environment is not the top priority in the minds of Croatians, with 52 per cent of respondents believing that unemployment is the most important problem for Croatia; to a rather lesser degree, the economic situation (28 per cent) and the cost of living (27 per cent) are also considered to be highly important problems to resolve.

Thanks to Croatia being in the EU, we might think that awareness of environmental issues, as well as the pace of the implementation of new eco-friendly legislation, are on their way towards an increase. Even if the pace is rather slow, compared with perhaps more virtuous countries, Croatia has indeed increased its efforts, thanks also to adjustments stemming from EU regulations and offers of related financial assistance.

Waste management

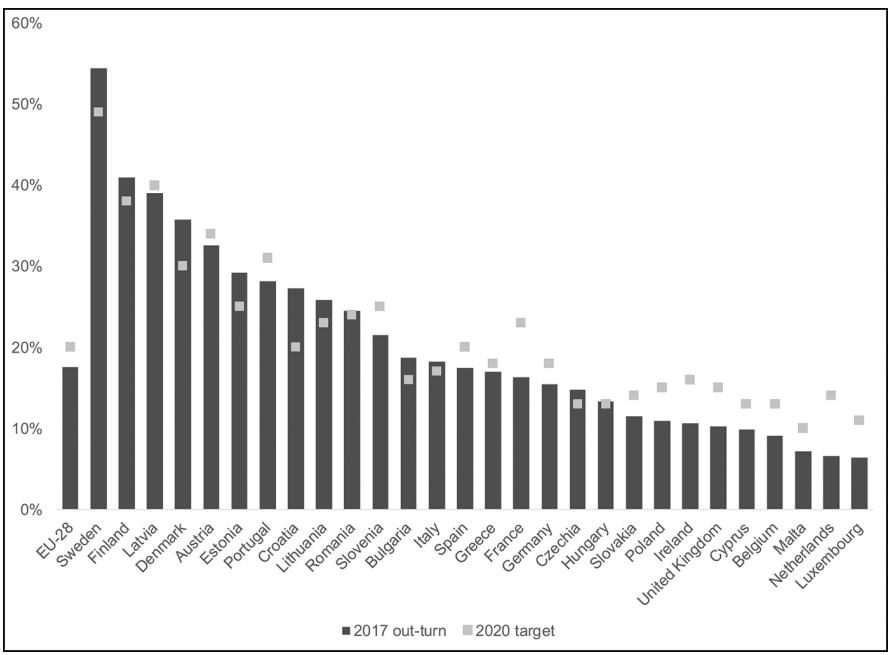
Particular attention has been given recently to the issue of waste management. According to the report of the Eco-Innovation Observatory (European Commission 2017a), the Croatian waste management system currently still relies on landfill with an inadequate rate of separation of waste collection and an insufficient recycling infrastructure. In 2016, the communal waste recovery rate in Croatia was 21 per cent, although this is expected to rise to at least 50 per cent by 2020, taking account of the EU's Waste Framework Directive. The Croatian government has introduced its Waste Management Plan for the period 2017-2022, which calls for an intensification of the separation of household waste and the construction of more sorting and recy-

cling centres close to waste-generating locations; this plan, as presented, is considered a prerequisite to use funds from the Competitiveness and Cohesion operational programme, which provides some €475m with which to finance the waste management sector. In total, the indicative amount of public investment is €593.5m while the indicative amount of private investment is €12.5m.

Renewables

Croatia enjoys geographical advantages when it comes to the use of renewable energy and it is expected that it may well outperform other countries in terms of the share of energy generated by renewable sources. In fact, in 2017, according to Eurostat, Croatia was one of the eleven countries that had already reached or surpassed its 2020 target for the share of energy from renewable sources.

Figure 3 – Share of energy from renewable sources in EU member states (2017, as per cent of gross final energy consumption)



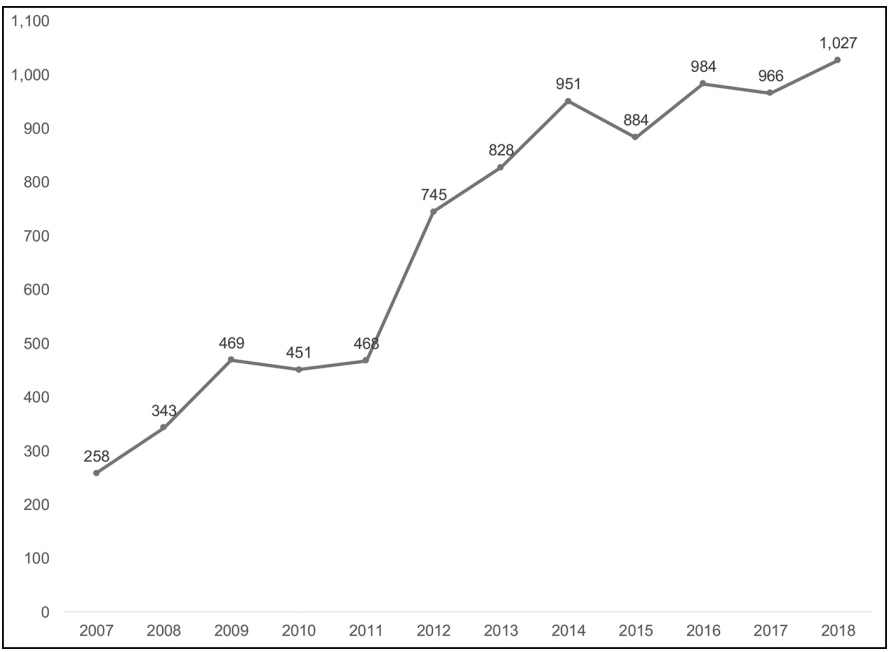
Source: Eurostat (https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_ind_ren&lang=en).

According to the Eco-Innovation Observatory report (European Commission 2017a), Croatia has finally received financial support from the EU for the construction of a liquefied natural gas terminal at Krk (involving over €100m of EU funding). This is important as a means of diversifying the sources of energy supply.

Environmental standards

The number of ISO certifications in Croatia up to 2018 is on the rise, as identified in Figure 4, breaking in the 2018 ISO survey through the 1,000 barrier for the first time:

Figure 4 – Number of ISO certifications (Croatia, 2007-2018)



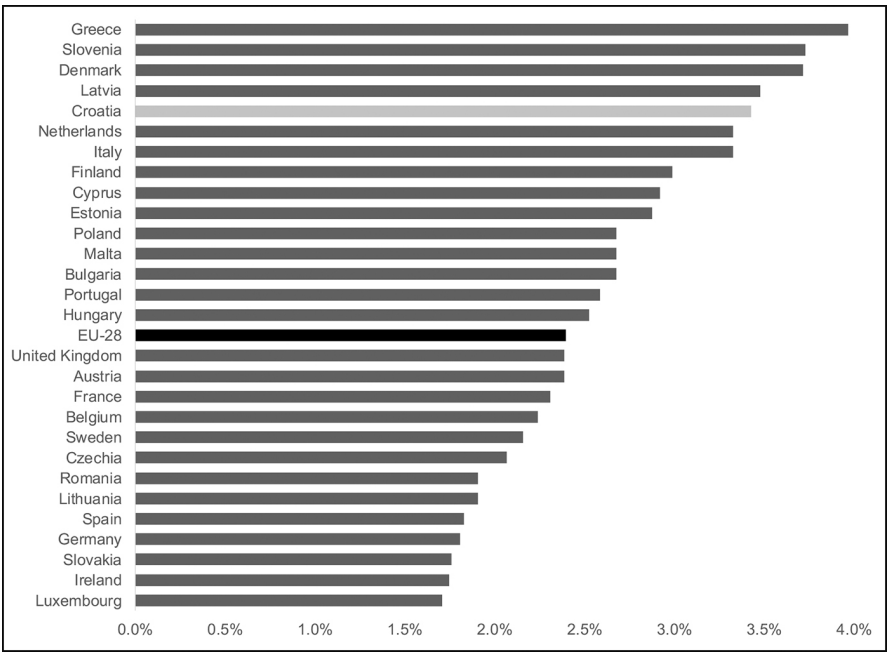
Source: *ISO Survey of certifications to management system standards, 2018* (available at: https://isotc.iso.org/livelink/livelink?func=ll&objId=18808772&objAction=browse&viewType=1).

Croatia has also an increasing number of firms that are achieving the EU Ecolabel, which can be defined as a label of environmental excellence awarded to products and services meeting high environmental standards throughout their lifecycle from raw material extraction, to production, distribution and disposal.

Fiscal policies

In connection with the tools available to countries to implement the transition to green growth, Croatia has, according to the EU's *Environmental Implementation Review 2019* (European Commission 2019c), heavily taxed those activities and products which are proven to have a specific negative impact on the environment. In fact, according to Eurostat, Croatia's revenue from environmentally appropriate taxes is one of the highest in the EU. Environmental taxes accounted for 3.43 per cent of GDP in 2017, against an EU-28 average of 2.40 per cent. Furthermore, energy taxes accounted for 2.59 per cent of GDP against an EU average of 1.84 per cent.

Figure 5 – Environmental tax revenues (per cent of GDP)



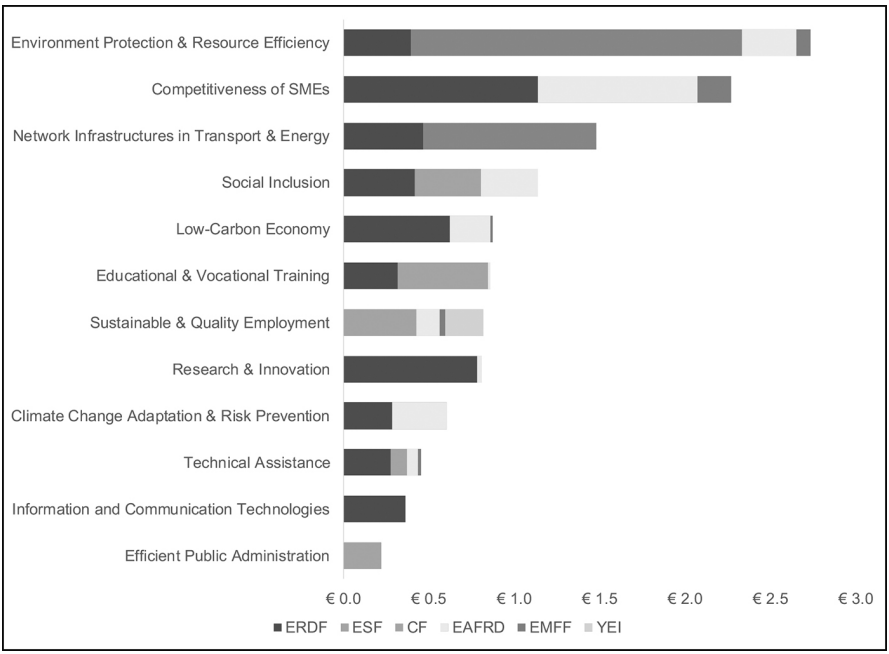
Source: Eurostat (https://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=t2020_rt320&language=en).

Green investment

Croatia has access to European Green Public Procurement initiatives, which have a purchasing power of €1.8 trillion, a large amount of which goes to sectors with a high environmental impact such as construction or transport. Unfortunately, Croatia – despite having adopted two national plans for Green Public Procurement (one in 2015 and another in 2018) – has implemented them only partially and an action plan for the circular economy was still only being 'considered' in 2017 (European Parliament 2017b). Furthermore, as the Commission's 2019 report on the implementation of the circular economy has noted, Croatia (along with others) has a five-year extension on the timetable to implement the 'ambitious but realistic' rates for the turning of waste into resources (European Commission 2019a).

Nevertheless, Croatia has been allocated a total of €10.7bn from the European Structural and Investment Funds for 2014-2020. With its own national contribution of €1.9bn, Croatia therefore has a total budget of €12.6bn with which to invest in various areas (Figure 6).

Figure 6 – ESIF 2014-2020: EU funds allocation by theme (€bn)

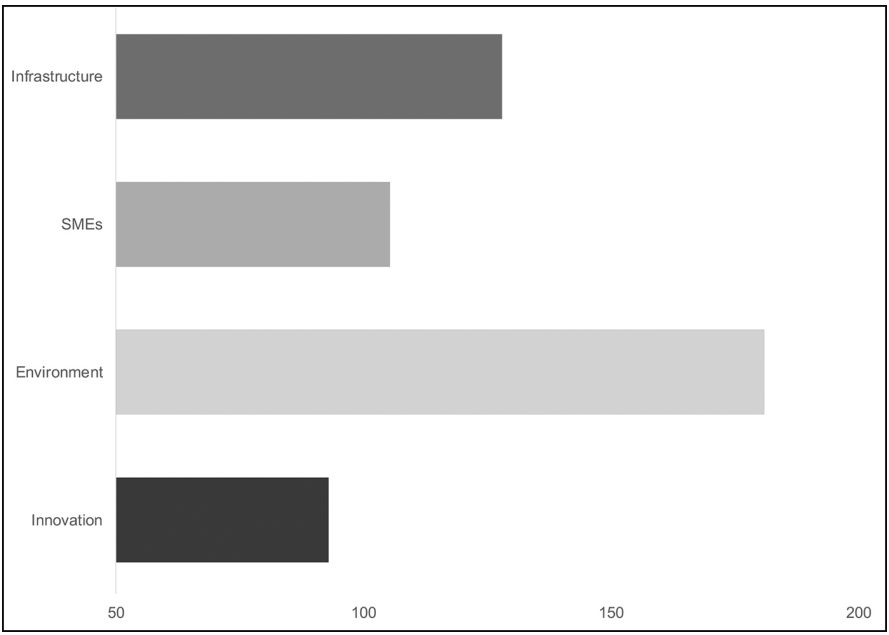


Source: *European Structural and Investment Funds Country Data for Croatia* https://cohesiondata.ec.europa.eu/countries/HR. The five ESIF funds are: European Regional Development Fund; European Social Fund; Cohesion Fund; European Agricultural Fund for Rural Development; and the European Maritime and Fisheries Fund. The Youth Employment Initiative is a part of the ESF but broken out separately here.

The Country Report for Croatia under the 2018 European Semester initiative also points out that Croatia has benefited from Horizon 2020 (European Commission 2018a). In particular, by the end of 2017, Croatia had signed agreements for €424m for projects under the Connecting Europe Facility.

Moreover, in 2018, the EIB Group (the European Investment Bank and the European Investment Fund) granted loans to Croatian businesses and public institutions totalling €507.3m. Specifically, €181m (36 per cent) of this money went on environmental projects.

Figure 7 – European Investment Bank investment in Croatia (€m, 2018)



Source: EIB *Croatia and the EIB* (available at: https://www.eib.org/en/projects/regions/european-union/croatia/index.htm).

Concerning the level of national financing of environmental projects, Croatia spent €295.7m on environmental protection in 2016, an increase of 15 per cent on 2015, according to Eurostat. €1.1m of this was allocated to waste water management while €1.5m was allocated to reducing pollution (0.5 per cent of total). Some 23.9 per cent of environmental expenditure was allocated to protecting biodiversity and the landscape (€70.7m).

Barriers

According to the report from the Eco-Innovation Observatory (2017a), it may be that the limited access to funding and support from the Green Public Procurement fund (which has strict access criteria) may act as a barrier to the development of the circular economy and thus to green (or circular) business models more generally. This is because some firms may not be able to demonstrate convincingly that there is a market for their products where such access to public procurement is restricted.

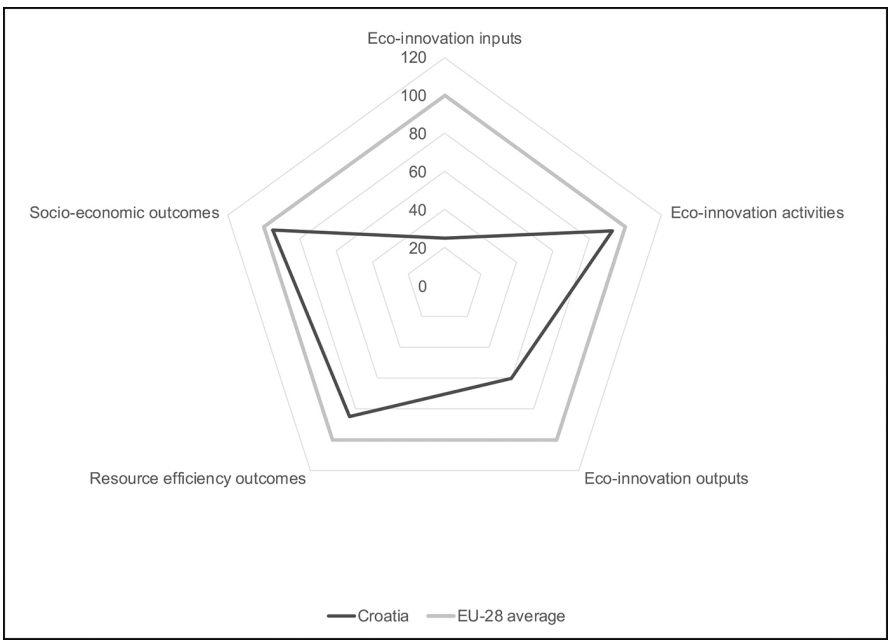
In terms of cultural barriers, there is also the lack of awareness and/or willingness in green economy principles among the general population, as we pointed out in the introduction to this section.

Finally, an important barrier to eco-innovation in Croatia is the significant lack of investment in R&D, without which the country is unlikely to be able to generate sig-

nificant investment in greening the economy. In 2016, for example, R&D expenditure in Croatia represented just 0.84 per cent of GDP.

Overall, the performance of Croatia on eco-innovation is summarised in Figure 8 – lower than the EU average on all five group measures; and especially so when it comes to eco-innovation outputs, where it is lower than the EU average by no less than forty per cent.

Figure 8 – Components of the Eco-innovation Index for Croatia, 2017



Source: European Commission (2017a) *EIO Country Profile Croatia* (available at: https://ec.europa.eu/environment/ecoap/sites/ecoap_stayconnected/files/field/field-country-files/croatia_eio_country_profile_2016-2017_1.pdf).

Greece

Public attitudes

According to the 2017 Special Eurobarometer (European Commission 2017e), Greek citizens strongly support circular economy initiatives and environmental protection measures and do so to a degree slightly higher than the average across the EU as a whole: 91 per cent of Greeks said that they were concerned about the effects of plastic products on the environment (EU-28 average: 87 per cent); while 94 per cent said they were worried about the impact of chemicals (EU-28 average: 90 per cent).

Current priorities

In April 2018, the Government Council for Economic Policy (KYSOIP) endorsed the National Action Plan on the Circular Economy. It has also backed a new recycling law (Law 4496/2017) in November 2017 (European Commission 2019d), which adjusted existing legislation to circular economy principles and which also established the obligation to collect the four waste streams (paper, glass, metals and plastics). Moreover, dialogue has also been promoted among stakeholders to bring about eco-friendly changes.

The Operational Programme on Competitiveness, Entrepreneurship and Innovation within Greece's National Strategic Reference Framework 2014-2020 has allocated €28.8m to the promotion of innovative technologies for environmental protection and resource efficiency in waste management, water management, soil contamination and air pollution; while another €28.3m has been set aside for the support of green growth and eco-innovation in the private and the public sectors (European Commission 2019d).

Furthermore, the European Commission SBA fact sheet for Greece (European Commission 2018c) identifies that Greek SMEs still have a score below the EU-28 average in terms of the environmental aspects of the small business act. The proportion of SMEs benefiting from public support has significantly increased from four per cent to 25 per cent but, as the report suggests, there remains room for improvement.

Waste management

From 2018, and in line with EU Directive 2018/851 on waste management, mandatory recycling targets have been set; however; municipal waste generation has remained at the same level in recent years and is slightly above the 2017 EU average. Greece disposes of the majority of its municipal waste in landfills (80 per cent, compared to an EU average of 24 per cent) and only 19 per cent is recycled (EU average: 46 per cent).

Greece is substantially at risk of not achieving the 50 per cent target, required by the directive by 2020. In 2012, a landfill tax law was adopted, but its application has been postponed until 2019 (Zachariadis 2016). With a low landfill gate fee, together with cheap illegal landfills, there is little encouragement to recycle.

Environmental standards

Greece had 3,348 products and 32 licenses registered within the EU Ecolabel scheme in September 2018, out of a total of 71,707 products (4.7 per cent) and 2,167 licenses (1.5 per cent) in the EU. Given that Greece represents about 2.11% of the EU's population, this is something of a mixed result.

R&D commitment

Environmental policy in Greece focuses (similarly to Croatia and Slovenia) on encouraging the use of renewable energies, energy efficiency and waste management.

However, the innovation capacity of the Greek economy depends on imported technology and know-how, not least given the austerity measures implemented in Greece which have taken a toll on public sector investment while investment by the private sector has also stagnated. This can be damaging, considering that the size of the labour force involved in R&D has remained the same across time and was, anyway, not bringing forward sufficient innovations. In fact, research activities in Greece depend substantially on EU funds: the National Strategic Reference Framework has assigned around €5.18bn in 2014-2020 for environmental activities, of which some €1.2bn will go towards strengthening research, technological development and innovation capacity.

Fiscal policies

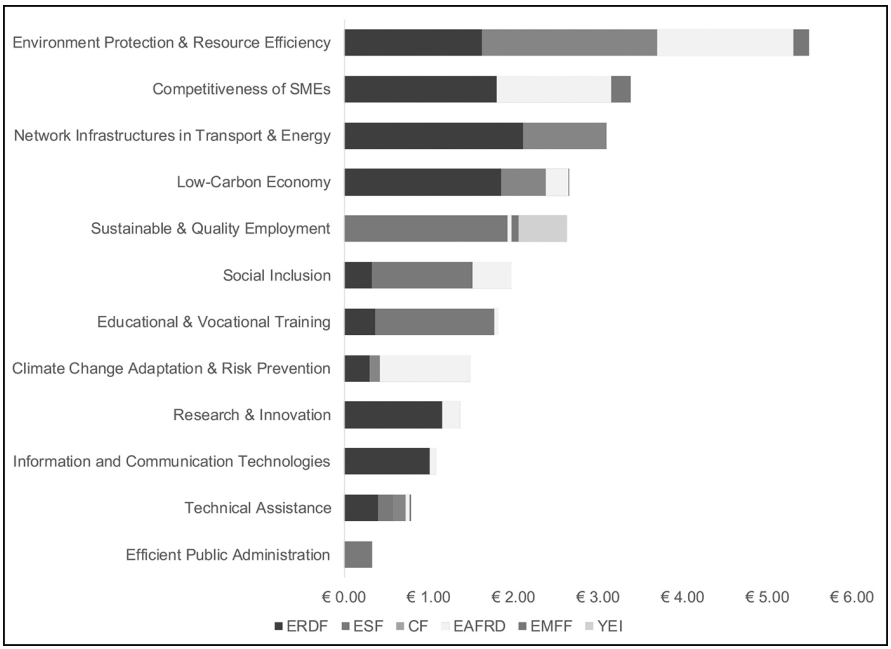
Nevertheless, from a fiscal point of view, Greece's revenue from environment-related taxes remains actually among the highest in the EU. Environmental taxes accounted for 3.97 per cent of GDP in 2017 against an EU-28 average of 2.4 per cent; while energy taxes accounted for 3.18 per cent of GDP (against an EU average of 1.84 per cent).

Green investment

A 2017 report from the European Parliament showed that Greece demonstrated only 'insufficient compliance' with the Commission's communications both on integrated product policy and on Green Public Procurement (although it was not alone in this). Furthermore, the identified expert within Greece did not appear to be responsive to the request for more up-to-date information when the report was being compiled (European Parliament 2017b).

Greece has been allocated €21.61bn from ESIF funds for the period 2014-2020 across twenty national and regional programmes. On top of its own national contribution of €4.6bn, Greece therefore has a total budget of just under €25bn with which to make progress under these initiatives.

Figure 9 – ESIF 2014-2020: EU funds allocation by theme (€bn)



Source: European Structural and Investment Funds Country Data for Greece https://cohesiondata.ec.europa.eu/countries/GR. See also footnote to Figure 6.

Looking at the level of funding which is available from the EAFRD, the Greek Rural Development Programme outlines the country's priorities for using the €5.7bn in funding available for 2014-2020 (including €4.7bn from the EAFRD and €1bn in national co-funding (European Commission 2014f). Of the available funds, 19.20 per cent will be spent on preserving the biodiversity of farmland, 18.72 per cent on improving water management and 25.38 per cent on improving soil management and/or preventing soil erosion. Some €387m in EAFRD funds are to be used to meet agri-environmental commitments and €600m is intended to support organic farming. An additional EUR 7.5 million are used to meet the country's obligations under its Natura 2000 management plan. Even so, many Greek environmental measures remain near the baseline.

The total budget available for direct payments for Greece in 2014-2020 is €14.9bn (European Commission 2014a), thirty per cent of which is being allocated to greening practices that benefit the environment.

Turning now to the Maritime and Fisheries Fund, the Greek industry has been assigned some EUR €523m in co-financing, including an EU contribution of €388m. This is targeted on measures in connection with sustainable fisheries (Priority 1 of the Operational Programme) and sustainable aquaculture (Priority 2). Under Priority 1, €186.2m (35.57 per cent of the allocation) aims to make the Greek fisheries sector

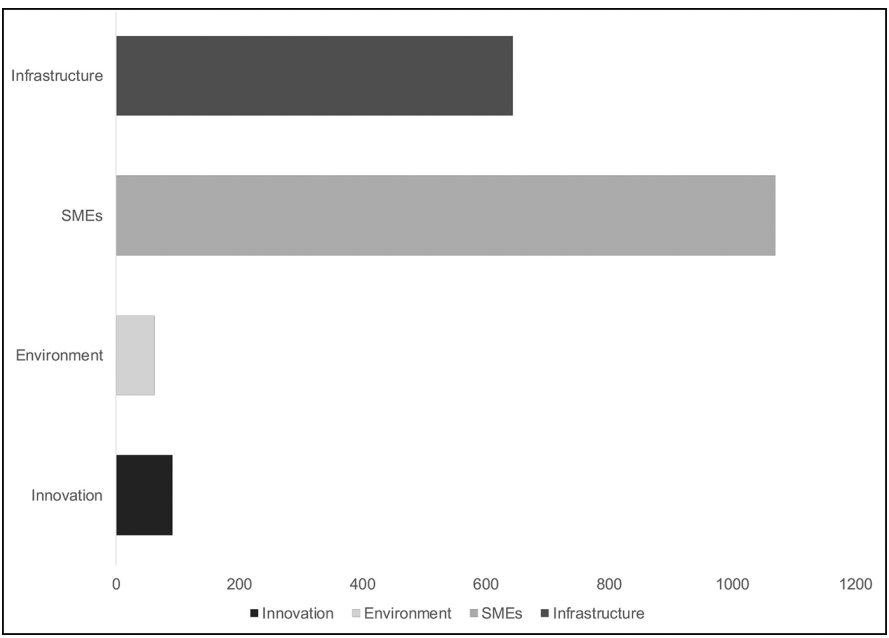
viable and sustainable and to protect fishing and marine resources. Under Priority 2, €89.7m (17.15 per cent of the allocation) aims to support competitiveness and environmental and economic sustainability (European Commission 2014b).

Concerning Horizon 2020 funding, projects accepted for funding across all Horizon 2020 working programmes in Greece up as far as December 2018 included €231m destined for climate action (26.2 per cent of the total Horizon 2020 contribution) and €30m for biodiversity-related actions (3.4 per cent) (European Commission 2019d).

Greece's cohesion policy funding allocation amounts to €16.5bn. Specifically, the ERDF and the Cohesion Fund are providing €1.9bn for projects in the low-carbon economy, as well as €339m for climate adaptation. Indeed, environmental protection and resource efficiency projects account for the largest share of ESIF funding in this current period.

Between 2013 and 2017, European Investment Bank financing in Greece amounted to €7.869bn among which €72.7m went towards waste management projects and €95.5m towards water and sewerage projects. In 2018, the loans amounted to a value of €1.87bn although only a 3.3 per cent share (€62.2m) was aimed at environmental projects.

Figure 10 – European Investment Bank investment in Greece (€m, 2018)



Source: EIB *Greece and the EIB* (available at: https://www.eib.org/en/projects/regions/european-union/greece/index.htm).

Meanwhile, the European Fund for Strategic Investments has mobilised €2.7bn in Greece as of January 2019. The secondary investment triggered by such investment is thought likely to rise as far as €11.1bn.

According to Eurostat, Greece's expenditure on environmental protection reached €2.752bn, an increase of eight per cent on 2015. A total of 41 per cent of these payments were for waste management activities (EU average: 49.7 per cent); €256m for waste water management (nine per cent of the total); €1.327bn was allocated to the reduction of pollution (48 per cent of the total); while €2m was spent on protecting biodiversity and the landscape (0.1 per cent of the total). Between 2012 and 2016, the general government funding for environmental protection totalled €13.1bn.

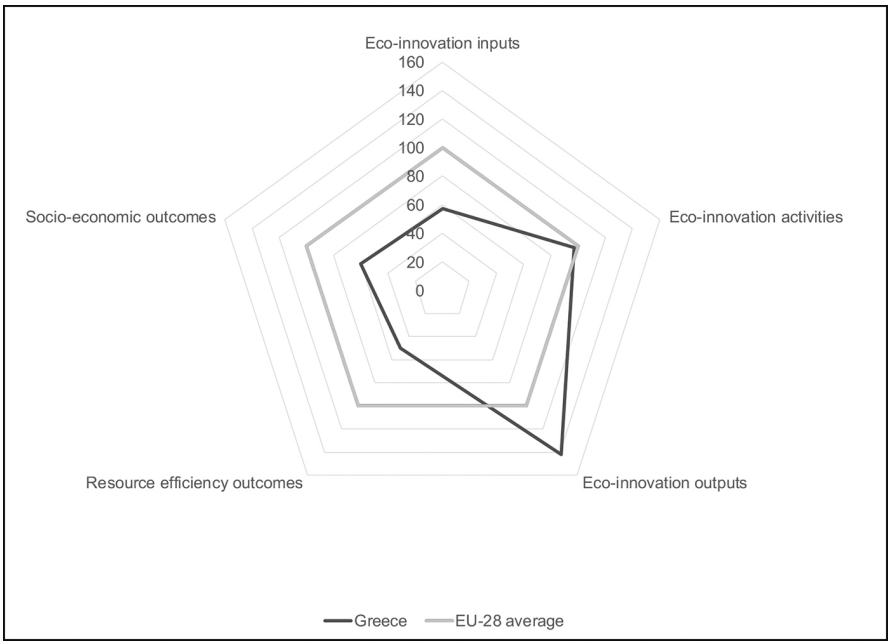
Barriers

According to the Eco-Innovation Observatory report (European Commission 2017b), Greece has a score of 77 (against an EU-28 average of 100), placing Greece in 19th position in the EU-28 ranking. Overall, it continues to rank low among the EU-28 countries in terms of eco-innovation performance although there is progress in the sense that the 2015 index was only 66.

The individual components of the Eco-innovation Index are summarised in Figure 11. Clearly, Greece is particularly weak on the resource efficiency component, where its performance has also declined substantially since 2015. Here, its eco-industry exports are particularly low (0.15 per cent of all exports) and well behind the EU average (0.73 per cent).

The report comments that Greece continues to lack a clear and cohesive framework which would support eco-innovation, while malpractice by local authorities and limited enforcement action by national ones continue to prevail. The deterioration of the economy amidst austerity politics makes systematic funding for eco-innovation unrealistic while stagnation in R&D funding is inevitable given the state of public finances. Social barriers also exist, not least in terms of public awareness of the benefits of innovation and energy efficiency.

Figure 11 – Components of the Eco-Innovation index for Greece, 2017



Source: European Commission (2017a) *EIO Country Profile Greece* (available at: https://ec.europa.eu/environment/ecoap/sites/ecoap_stayconnected/files/field/field-country-files/greece_eio_country_profile_2016-2017_1.pdf).

Romania

Public attitudes

If we look at the 2017 Special Eurobarometer survey (European Commission 2017e), 87 per cent of Romanian respondents saw protecting the environment as important or very important; while air pollution was regarded as the major issue by 46 per cent. Four out of five Romanians (79 per cent) said they were concerned about the impact of plastic products on the environment (although this is lower than the EU average of 87 per cent).

Waste management

The EU's *Environmental Implementation Review 2019* (European Commission 2019e) highlights that waste management remains a key challenge for Romania, despite the formal progress facilitated by the National Waste Management Plan of December 2017. In comparison with Commission's previous report, recycling and resource efficiency are still low. According to the Commission's *Early Warning Report* (European Commission 2018e), Romania is considered at risk of non-compliance with the 2020 municipal waste recycling target of 50 per cent.

Environmental standards

In September 2018, Romania had 24 products and 19 licenses registered in the EU Ecolabel scheme, out of the total of 71,707 products and 2,167 licenses in the EU; while eleven organisations are currently registered in EMAS (the European Commission's Eco-Management and Audit Scheme).

Fiscal policies

Romania's revenue from environment-related taxes is in line with the EU average. Environmental taxes accounted for 1.9 per cent of GDP in 2017, against an EU-28 average of 2.4 per cent; while energy taxes accounted for 1.76 per cent of GDP, against an EU average of 1.84 per cent).

Romania has also implemented a packaging tax, according to which all economic operators are responsible for the packaging waste they generate.

The *2019 Review* actually envisages a much poorer outcome than the one on waste management concerning the level of air pollution arising from serious, and structural, shortcomings in data measurement. The main sources of air pollution, a major problem in Romania, come from the transport and energy sectors, in particular the heavy use of fossil fuels and the use of domestic solid fuel in households.

According to the European Parliament's *Fossil Fuel Subsidies* report (European Parliament 2017a), fossil fuel subsidies in Romania rank above the EU average. Post-tax subsidies (which include not only price gap subsidies but also the negative externalities associated with fossil fuel use, such as local air pollution, faster climate change and congestion) were projected as amounting to more than $14bn in 2015.

However, incentives to encourage people to buy cars with lower CO_2 emissions were put in place in 2016. According to the European Environment Agency (2016), the emission levels of new vehicles bought in Romania are in line with the rest of the EU, with average CO_2 emissions of 122 grams per kilometre (EU average: 118 grams in 2016). However, the use of alternative fuels in new passenger cars sold in Romania has remained low over the past few years. The percentage share of new passenger cars using alternative fuels was 0.17 per cent in 2016, falling from 0.44 per cent in 2013 (European Commission 2018d).

Green investment

Concerning Green Public Procurement, according to the *Environmental Implementation Review 2019* (European Commission 2019e), Romania established in 2016 a set of criteria for procuring green products while also specifying services categories. The law provides for a guide that sets down minimum criteria for the environmental protection of goods and services, as well as standard specifications and a multi-annual action plan for green public procurement at national level.

Through eight national and regional programmes, Romania has been allocated €30.84bn from the European Structural and Investment Funds for between 2014 and 2020. This means that, on top of its own national contribution of €5.63bn, Romania has a total budget of €36.47bn to invest in areas such as creating jobs and growth, promoting innovation, protecting the environment and supporting social inclusion.

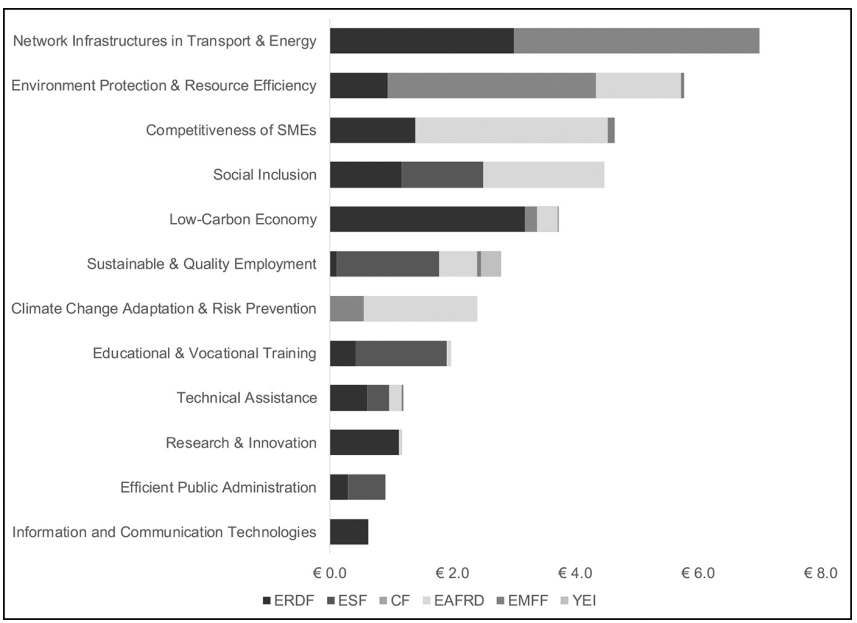
Romania will receive around €23bn from EU sources in total cohesion policy funding for 2014-2020, including €453m for European Territorial Cooperation and €4.7bn from the European Social Fund (ESF). EU investments in projects aimed at facilitating the move to a low-carbon economy total €2.9bn; for climate change adaptation & risk prevention and management they amount to €479m; and for environmental protection and resource efficiency, €3.7bn. For a summary of the allocation of resources to Romania by theme (and including the country contribution), see Figure 12, below.

Within the national rural development programme, EAFRD funds contribute €3.252bn – this is some forty per cent of the total EAFRD budget for environmental measures. However, only eleven per cent is being dedicated to agri-environmental-climate projects.

According to Commission Delegated Regulation (EU) No. 994/2014, of 13 May 2014, the budget for direct payments to farmers in Romania is €8.949 bn, thirty per cent of which (€2.740bn) is allocated to greening practices that will help the environment.

The sums being made available include more than €168m as an allocation from the European Maritime and Fisheries Fund (EMFF). In terms of the environment, the priorities of the Romanian fisheries operational programme are to promote environmentally sustainable, resource efficient, innovative, competitive and knowledge-based fisheries (€17.8m); and to promote environmentally sustainable, resource efficient, innovative, competitive and knowledge-based aquaculture (€112.3m).

Figure 12 – ESIF 2014-2020: EU funds allocation to Romania by theme (€bn)



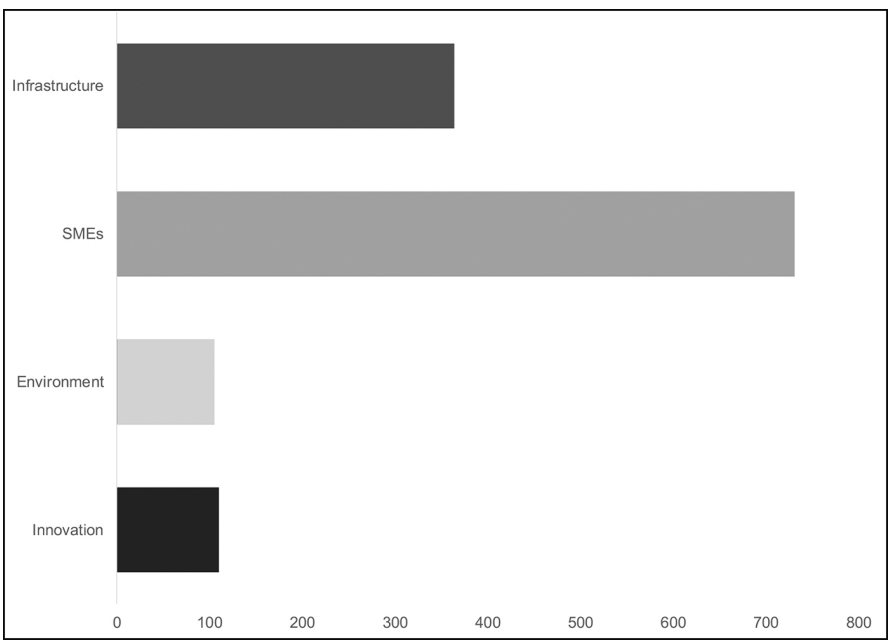
Source: *European Structural and Investment Funds Country Data for Romania* https://cohesiondata.ec.europa.eu/countries/RO. See also footnote to Figure 6.

Concerning the Connecting Europe Facility, we learn from the *European Semester Country Report for Romania* (European Commission 2018b) that, by the end of 2017, Romania had signed agreements for €1.2bn on projects falling within the Connecting Europe remit.

As of January 2019, a total of 343 participants had been granted a maximum of €55.5m for projects under the 'Societal Challenges' work programme seeking to address environmental issues. In Romania, projects accepted for funding across all Horizon 2020 working programmes up to December 2018 included €44m destined for climate action projects (32.5 per cent of the total Horizon 2020 contribution to the country); and €6m for biodiversity-related actions (4.7 per cent of the Horizon 2020 contribution).

Between 2013 and 2017, EIB loans to Romania amounted to a total of €10.4bn while, in 2018 alone, the EIB group (encompassing the European Investment Bank and the European Investment Fund) invested €1.31bn in the Romanian economy of which €105.1m (eight per cent) was allocated to environmental projects.

Figure 13 – European Investment Bank investment in Romania (€m, 2018)



Source: European Investment Bank *Romania and the EIB* (available at: https://www.eib.org/en/projects/regions/european-union/romania/index.htm).

In terms of individual projects, in January 2019, EFSI mobilised more than €652m in Romania in projects thought likely to trigger €2.7bn in additional investments. The EIB has also provided a €7.5m EFSI loan to GreenFiber International SA, a producer of recycled Polyethylene Terephthalate (PET) fibres used in furni-

ture, cars, clothes and in construction, in 2017. The European Investment Fund press release on the initiative stated that this circular economy project will help to create 280 full-time jobs and will increase the amount of waste collected and processed in Romania by over 50,000 tonnes per year.

According to Eurostat, Romania spent €1.064bn on environmental protection matters in 2016, a decrease of 33.4 per cent on the 2015 figure. Nearly one-half (47.4 per cent) of these payments were allocated to waste management activities (the annual average percentage of environmental spending allocated to waste management in the EU is 49.7 per cent). Some €233m was allocated to waste water management (21.9 per cent of the total) and €294m to pollution abatement (27.6 per cent). Some 0.6 per cent of environmental expenditure was allocated to protecting biodiversity and the landscape (€5.9m). Between 2012 and 2016, general government funding for environmental protection was €6.12bn.

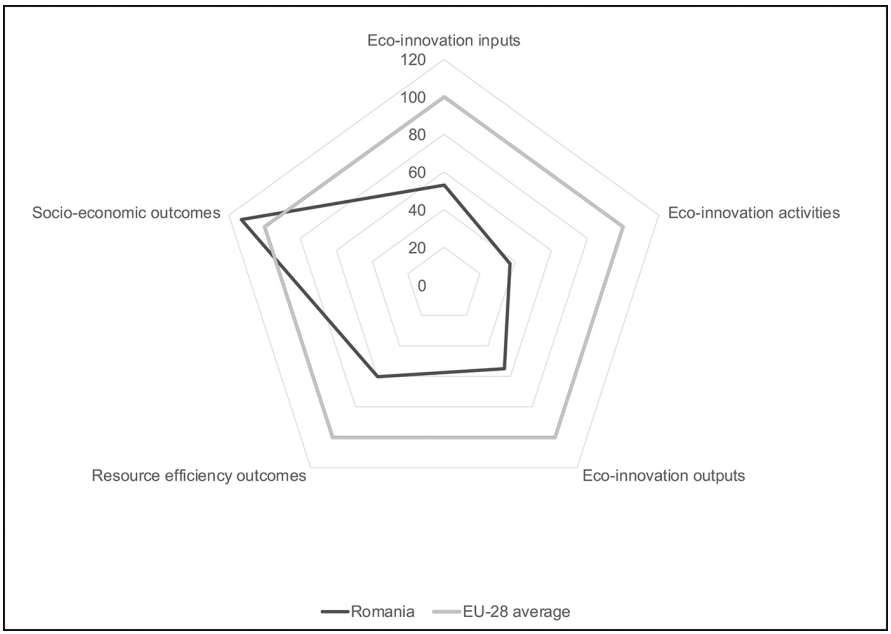
Barriers

One of the challenges that Romania faces is ensuring that environmental financing remains at an adequate level. Existing gaps in areas such as waste management, green infrastructure or biodiversity are inhibiting the correct implementation of EU environmental law and policies. Therefore, ensuring that financial resources are there to reduce this implementation gap should be considered as a top priority for the country.

With this in mind, it is likely that Romania will continue to rely heavily on EU funds and loan opportunities. Even so, there is a lack of administrative capacity and project preparation/maturation skills, as well as prioritisation, across environmental areas. This reduces the capacity of usage of the funds which are both available and highly-needed.

The eco-innovation performance of Romania is summarised in Figure 14. According to the Eco-Innovation Observatory report for 2017 (European Commission 2017c), Romania has an overall eco-innovation performance score of 65, far from the EU-28 average (of 100) and the sixth lowest. Eco-innovative inputs and activities operate at about half the level across the EU as a whole, but Romania is actually above the average on one measure – socio-economic outcomes.

Figure 14 – Components of the Eco-Innovation index for Romania, 2017



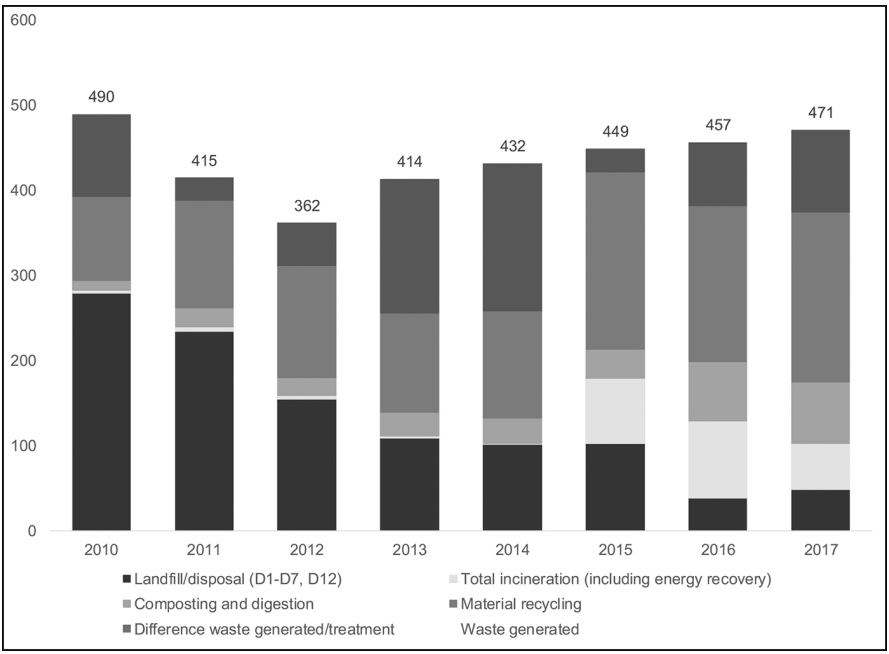
Source: European Commission (2017c) *EIO Country Profile Romania* (available at: https://ec.europa.eu/environment/ecoap/sites/ecoap_stayconnected/files/field/field-country-files/romania_eio_country_profile_2016-2017_1.pdf).

Slovenia

Waste management

Slovenia's municipal waste recycling rates are above the EU-28 average (58 per cent compared to 46 per cent); and they have increased since 2010, as Figure 15 points out.

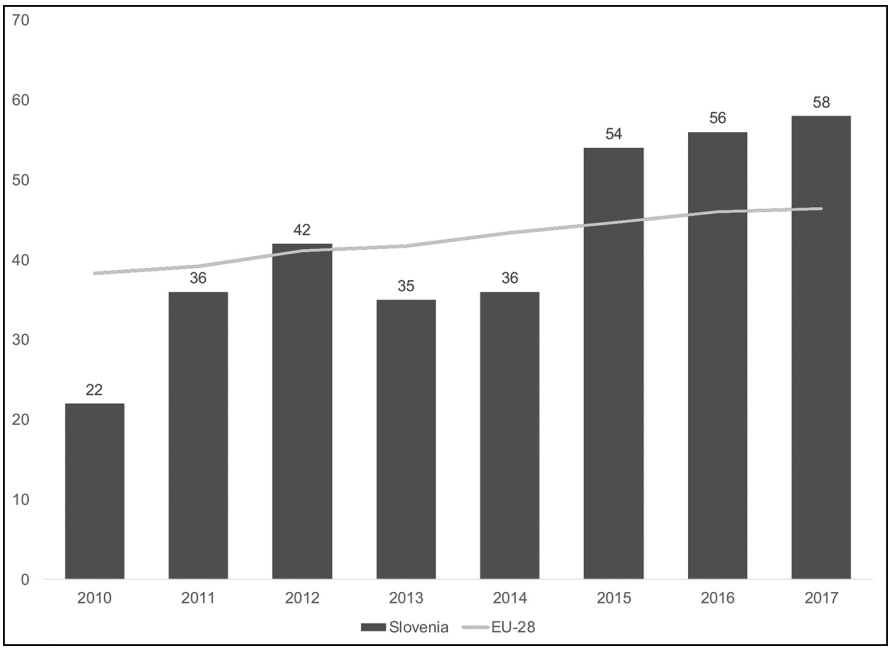
Figure 15 – Municipal waste by treatment in Slovenia, 2010-2017 (Kg/capita)



Source: Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_wasmun&lang=en).

Indeed, Slovenia's municipal waste recycling rate is growing faster than the EU-28 average. With a 58 per cent recycling rate achieved in 2017, Slovenia has already exceeded the 2020 municipal waste recycling target of 50 per cent.

Figure 16 – Recycling rate of municipal waste, 2010-2017 (per cent)



Source: Eurostat: (https://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=t2020_rt120&language=en).

Fiscal policies

Focusing on the implementation tools open to a country, according to the *Environmental Implementation Review 2019* (European Commission 2019f), Slovenia's revenue from environmentally relevant taxes remains above the EU average. Environmental taxes stood at 3.73 per cent of GDP in 2017, compared to an EU-28 average: 2.4 per cent). Meanwhile, energy taxes stood at 3.16 per cent of GDP, set against an EU average of 1.84 per cent.

Green investment

Slovenia is committed to the financing of greener cities and has assigned around €122m, or four per cent, of its cohesion policy allocation to sustainable urban development. This includes €112m (7.9 per cent) of European Regional Development Fund (ERDF) financing and a further €10m (1.1 per cent) from within the Cohesion Fund.

Slovenia is one of the few member states with mandatory Green Public Procurement requirements. However, the actual implementation of its policies in this area could be improved; as with Croatia, its national action plan has been only partly implemented and no new national action plan is currently in the pipeline.

In 2015, the contracting authorities completed 5,396 public contracts (or 9,305 lots) with a value of €1.6bn. At least one environmental requirement was included in 1,528 lots, accounting for 16 per cent of all lots tendered in 2015. The value of these lots was €276m, representing some 17 per cent of the total value of tenders (GPP Advisory Group 2016).

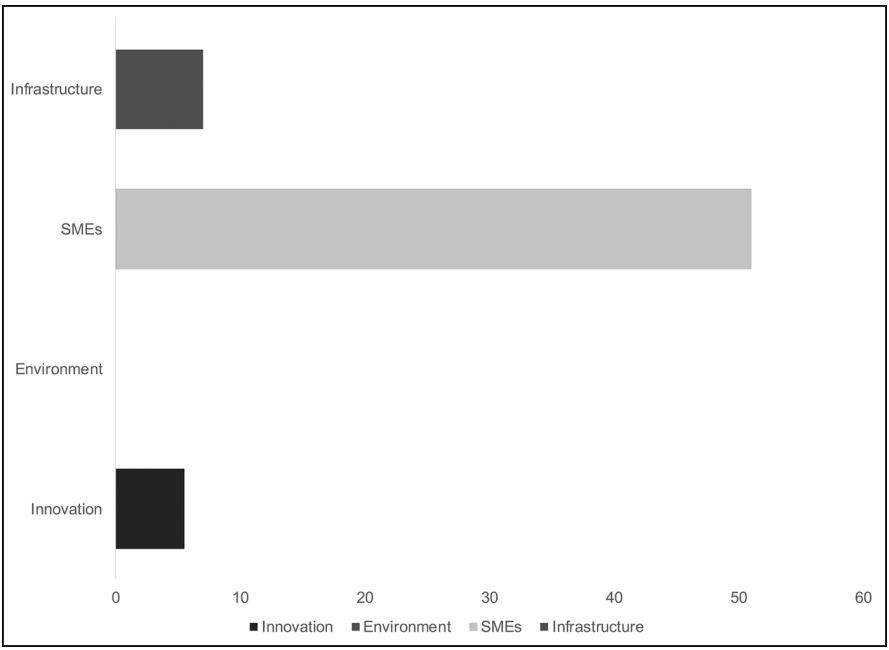
Under its national operational programme, Slovenia has been allocated €3.87bn from ESIF funds for the 2014-2020 period. This means that, with its national contribution of €1.02bn, Slovenia has a total budget of €4.9bn to invest in the country within the ESIF framework (European Commission 2016a).

Slovenia originally received some €3bn in funding from the Cohesion Policy for 2014-2020, including €64m for European Territorial Cooperation and €718.8m from the European Social Fund. Out of Slovenia's Cohesion Policy budget, some €570m (including reallocations) has been allocated to protecting the environment and using resources in a more sustainable and efficient way. This accounts for around 18.7 per cent of Slovenia's overall cohesion policy budget, which is higher than the EU average of around eleven per cent (European Commission 2016b).

A large amount of the resources contributed by the Cohesion Fund (€300m in total) will be devoted to improving Slovenia's water sector (€161m for urban waste water treatment; €125m for drinking water; and €14m for other water measures). The second highest allocation of €90m is for climate change adaptation, in particular for flood protection measures, while €47m goes to efficient land use in urban areas (including funding for the renovation of buildings in degraded urban areas) and €44m to protect Natura 2000 areas and biodiversity. A further €41m has been allocated to protect, develop and promote cultural and natural heritage, while air quality measures receive €39m. Finally, €8m is to support environmentally-friendly production processes and resource efficiency in SMEs (European Commission 2014c).

Furthermore, in 2013-2017, European Investment Bank (EIB) financing in Slovenia amounted to €1.6bn in credit lines for businesses and transport. In the 2018 funding round, however, no loans were provided directly for environment-related projects, other than a limited amount of funding in respect of energy efficiency and renewable energy.

Figure 17 – European Investment Bank investment Slovenia (€m, 2018)



Source: EIB *Slovenia and the EIB* (https://www.eib.org/en/projects/regions/european-union/slovenia/index.htm).

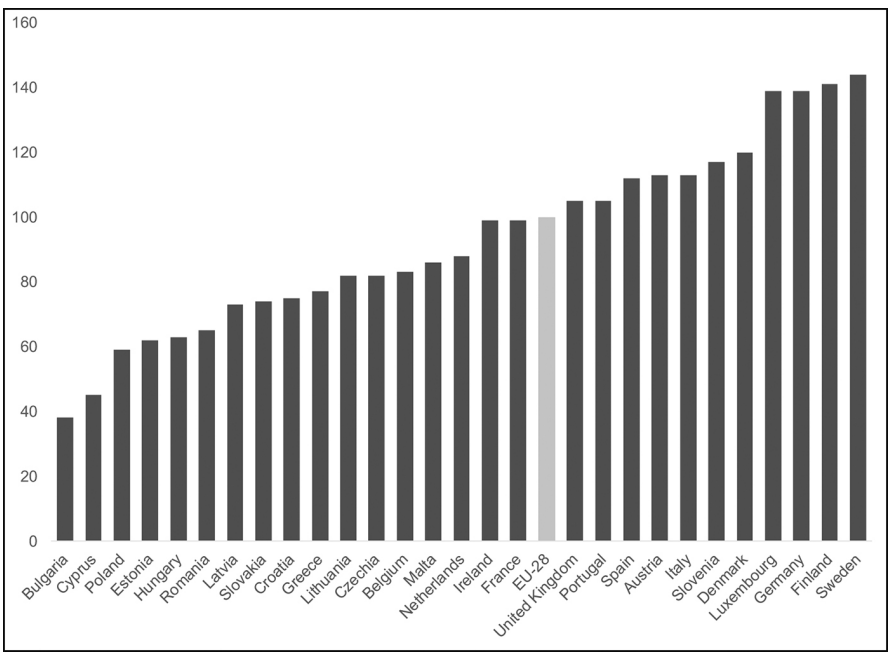
The EIB's European Fund for Strategic Investments (EFSI) is designed to help bridge the investment gap and, as of January 2019, had mobilised €161m in Slovenia with a view to this triggering additional investment of €927m. Slovenia participates in two approved initiatives, one to support the transport sector and one to support SMEs. The SME project is expected to account for €620m in secondary investment which will benefit some 1,700 smaller companies or start-ups.

Slovenia spent €226.1m on environmental protection in 2016, a decrease of 42 per cent on the 2015 level. Of this expenditure, some 19 per cent went on waste management activities (the annual average percentage of environmental spending allocated to waste management across the EU is 49.7 per cent). €83.1m was allocated to waste water management (37 per cent of the total) while €23.4m was targeted towards reducing pollution (ten per cent of the total). Eleven per cent of environmental expenditure was directed to the protection of biodiversity and the landscape (€25.8m). Between 2012 and 2016, the general government funding for environmental protection was €1.5bn.

Barriers

The overall Eco-Innovation Index 2017 for Slovenia is 115, placing the country just behind the leading eco-innovative countries, with Denmark, Luxembourg, Germany, Finland and Sweden at the forefront. Slovenia's composite index has increased significantly compared to previous years and its rank increased from 15th in 2013 and 13th in 2015 to sixth in 2017.

Figure 18 – Eco-Innovation Index, 2017



Source: Eco-Innovation Scoreboard (https://ec.europa.eu/environment/ecoap/indicators/index_en)

Even so, there remain clear ad identifiable challenges for Slovenia in this area, since gross domestic expenditure on R&D as a share of GDP has continued to fall from 2013. The business enterprise sector remains the main driver of eco-innovation as government budget appropriations for R&D have continued to decrease, from 0.68 per cent of GDP in 2009 to 0.40 per cent in 2016.

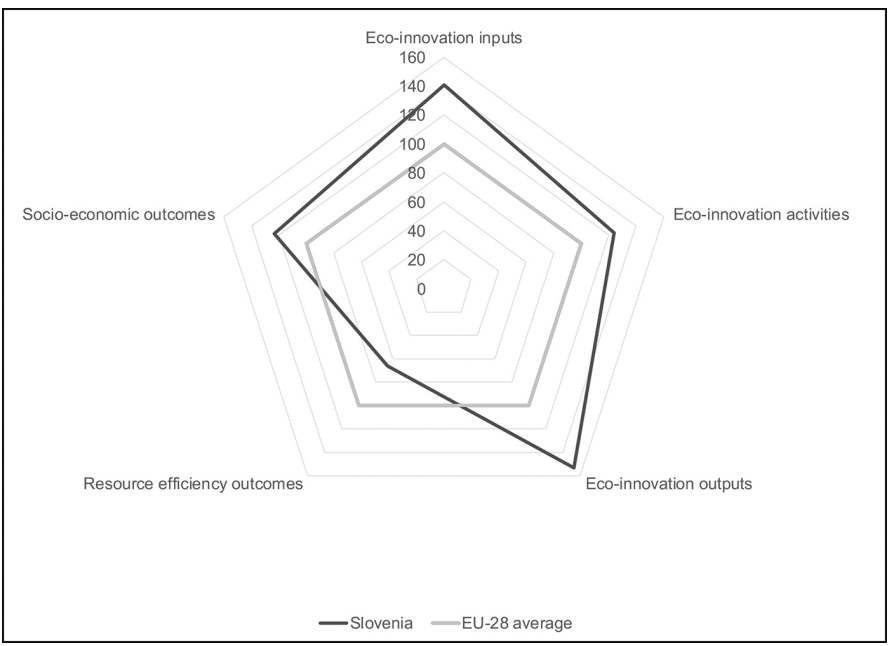
Another barrier is a lack of political will or decision-making competence within the Slovenian government: for instance, despite high eco-tax contributions, policy-makers allocate only part of this in-flow to green policies. Additionally, the 'rule of the lowest price' within public procurement, which favours price over quality and, in a majority of cases, rules out green and sustainable solutions which cannot compete based on price alone, acts as a further barrier within public policy. Consequently, eco-innovations fail to penetrate the market as the price for the final consumer fre-

quently proves to be higher than that of similar, but environmentally less-friendly, products or technologies.

Meanwhile, the inefficient transfer of knowledge from higher education to the private sector remains a further barrier.

Looking at the Eco-Innovation Index in closer detail, we can see that Slovenia outperformed the EU average in all index components except in the efficiency of resource outcomes where the index was just 66. The latter is the 8th worst in the EU, well below the EU average and three times poorer than in the case of the leading EU countries in resource efficiency, i.e. Luxembourg (183) and Italy (180).

Figure 19 – Components of the Eco-Innovation Index for Slovenia, 2017



Source: European Commission (2017d) *EIO Country Profile Slovenia* (available at: https://ec.europa.eu/environment/ecoap/sites/ecoap_stayconnected/files/field/field-country-files/romania_eio_country_profile_2016-2017_1.pdf).

Policy recommendations and barriers/drivers

Masi *et al*. (2018) show that firms favour practices related to efficiency of resource and energy utilisation, while practices related to investment recovery, green purchasing and customer cooperation are less prevalent. Additionally, investment cost and a lack of awareness or sense of urgency may be identified as implementation barriers. In other words, the choice to 'go green' is driven by economic, not environmental, considerations.

The major issue within the Balkan area is that, despite the enormous amount of funds available due to EU membership, countries tend not to be taking further steps in making the economy greener; this is because each country faces endemic and different problems, while most implementation initiatives remain in the hands of domestic governments and not at all on the European Union (or other external entities). For example, countries are advised to increase their expenditure on R&D and also encourage private investment in innovation, with R&D having a known relationship with raising the level of technology applications in a country; however, Balkans countries continue to place a different priority on the allocation of national and private research resources.

Investment must not only be increased in general, it is also required to increase it specifically in recycling and recovery infrastructure, as well as in circular product eco-design and 3R production (re-use, recycle and repair). Those that are EU member states could experience a certain level of external government pressure, with the EU in some way able to compel the implementation of environmental policies through higher standards, but accompanied (and therefore eased) by convenient access to European funds and, in some cases, less stringent regulation.

In Croatia, for instance, we saw that regulatory issues may create market barriers in that firms may not be able to gain access to green public procurement given the strict access criteria. This means that, where they do not gain access to public procurement, they are unable convincingly to demonstrate that a market may exist for their products.

Moreover, concerning individual choices more widely, it is clear there is a general lack of consumer awareness and demand for eco-friendly products and services. This translates into a lack of awareness and/or willingness to engage meaningfully with circular economy principles. The protection of the environment may be considered an important issue in the context of survey research; however, when it comes to applying the principles of a green economy in practice, people focus more on finding solutions to what they consider short-term problems while the environment is considered a long-term problem that can be easily postponed.

Another problem to consider is geographical disparity and remoteness (such as the number of islands, mountain barriers, etc.) as well as how a particular land is organised. The more dispersed the population, the harder it becomes to implement land regulations and proper infrastructure; in fact, natural barriers, such as the distance between the mainland and an island, or a substantial mountain chain, are costly to overcome and requires strong political will to drive a proper infrastructure that can unify a market. Both of these seem to be lacking in the Balkans.

The dimension of the market represents another barrier. For example, Slovenia is a small country (of around two million inhabitants) and is substantially dependent on the international economic environment. The European single market represents an important opportunity for eco-innovations that, otherwise, would not be realised due to the small national market, which often lacks sufficient eco-related demand. Being in the EU opens up the market to external eco-related demand. In fact, in Slovenia, as Hojnik (2018) points out, a major driver for the green economy is:

Competitive pressure, which forces companies to become more environmentally friendly, be more eco-efficient in their use of resources (e.g. material, energy, water, etc.), and provide/offer to consumers more environmentally friendly solutions.

Also in Slovenia, there is a failure by Slovene companies to take into account the externalities relating to environmental consciousness which, at the end of the productive process, cumulate in a product that is higher in price than a similar but less eco-friendly product (European Commission 2017d).

Where a clear and cohesive framework for the support of eco-innovation and eco-industries is lacking, this also represents a barrier as in the case of Greece where, despite the National Strategy for Research, Technological Development and Innovation, malpractice and the limited enforcement of laws by national authorities continue to exist. A large amount of finance is required to support the transition to a circular economy but, in the case of Greece, this idea remains a dream since austerity policies have led to a stagnation in terms of R&D expenditures and delays in payments. Consequently, eco-innovators and companies, but also researchers, access funds mostly from the EU. In addition, firm size is also a barrier since small companies lack proper financial resources and have little access to funds: few firms in Greece, therefore (3.5%, according to European Commission 2017b) have the intention of investing in innovative technology.

An important driver in the push towards a circular economy is the availability of natural resources (in particular, energy-related resources such as wind, hydroelectric and solar). The Balkans are of course rich in such resources, but countries in the region are lacking in the investment with which they would be able to use such resources more effectively.

Even the economic model of companies could be either a barrier or a driver. For instance, Romanian companies base their economic model on cost competitiveness and, therefore, economic operators strongly oppose measures which could result in higher production costs. This results in sizable opposition to more stringent environmental legislation. The solution to this problem has first to be addressed by the domestic government, not by the EU and, even here, companies (who face taxes on how much waste they produce) require more training and advice on how to manage waste and their legal obligations towards environmental management (European Commission 2017c).

As a former communist country then located firmly within the Soviet sphere of influence, Romania also faces challenges in mounting effective public-private cooperation arising from the difficulties of its own post-communist transition.

Conclusions

We conclude in this article that the main barriers likely to impede the rapid transition to a green economy are substantially internal, domestic ones. The most common issue is a lack of political responsiveness, along with the transitional costs which small and medium enterprises do not have the abundance of resources and/or the innovative mindset with which to deal.

However, companies and individual citizens also have a significant contribution to make in achieving the green agenda since companies and individuals are the biggest culprits when it comes to the browning of the environment. As such, if countries do not give maximum support in terms of changes in their political actions, operations and attitudes towards the environment, then even the efforts of the EU might be little effective.

Even where a country has EU membership, as we have pointed out, the transition to a greener economy still rests with national governments and is dependent on societal attitudes. In such cases, more straightforward access to European Cohesion Funds may boost the transition to green investment but, even here, the political will must exist first. The major concern remains on how such funds are used since governments and firms may well have differing economic priorities and approaches.

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