Ecology Awareness of Sustainable Green Development: Collaboration of Universities and Local Actors

2023-1-SK01-KA220-HED-000161639

COMPARATIVE LEGAL ANALYSIS

Co-funded by the European Union

TABLE OF CONTENTS

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

EXECUTIVE SUMMARY

This document provides a **country-based legal analysis for Croatia, Poland, Romania, Slovakia and Turkey**, focusing on the legal framework governing **sustainable green development** and the role of universities in collaborating with local actors. The analysis covers key areas such as the **green economy, sustainable finance, social responsibility, environmental protection, agriculture and food systems, sustainable urban development, and smart cities**, as well as **the legal framework for university-local government cooperation**. The comparative legal analysis in the above context seems required for modern society and the environment.

This fostered cooperation between universities, local government, communities and citizens to achieve sustainable projects and promote environmentally friendly and economically responsible practices. Laws and regulations play a crucial role in how different countries implement policies and interdisciplinary cooperation. Their institutional systems may foster sustainability and innovation differently, and their comparison will help identify the positive and negative aspects and gaps that need to be mitigated for better intersectoral cooperation.

Using comparative analysis, we examined the impact of laws and policy on the achievement or obstruction of goals such as sustainable green development. For example, understanding how laws facilitate and promote SGD is a starting point for developing networking strategies and action plans between universities and other local actors in a more productive way.

Legal comparison allows to appreciate the matters which need to improve in the policies of their countries. That target may translate to concrete proposals for legal changes or modifications that would render collaboration more effective. These proposals will assist the universities and local governments in ways that will research to the SGD Guide and Action Plan, allowing for greater coordination, efficiency, and impact of their activities towards global sustainability.

Universities can serve as an innovation engine and instruct communities on how to adopt less harmful practices. Under enabling legislation and regulations, the universities can help in facilitation of the transfer of information, support local actors to solve problems, and assist university students and citizens in active problem solving of the local environmental issues.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

COMPARATIVE OVERVIEW

The countries analysed outline some typical and country-specific guiding themes in sustainable green development. All of these countries have implemented or are in the process of implementing legal and strategic frameworks that support green development. They often stand on European Union directives and strategies, such as the European Green Deal and the EU Taxonomy. In Turkey's case, the laws, regulations, and legal framework are partly different from those of EU legislation.

Croatia, the relatively latest country to join the European Union's current integration structures, is now rapidly adapting its legal framework to the EU's strategy in this regard. It, too, has implemented the EU Taxonomy, the Corporate Sustainability Reporting Directive (CSRD) and the Sustainable Finance Disclosure Regulation (SFDR). The country's key long-term plans are the Low Carbon Development Strategy 2030 with an Outlook to 2050 and the Integrated National Energy and Climate Plan 2021-2030.

Against this backdrop, Poland already has a framework set of environmental fee regulations firmly established in the European acquis, with enforcement bodies at the provincial level. Polish public procurement law is increasingly taking ecological aspects into account. However, it has not yet made green public procurement mandatory.

The situation in Romania is similar – key legal acts regulating environmental protection are increasingly harmonised with EU legislation and, therefore, with other analysed countries. The pace of this harmonisation is slower than in Slovakia and Poland and similar to that in Croatia. However, implementing executive acts to the principal laws is a challenge, slowing down the process of creating an efficient legal system for environmental protection.

The legal framework for sustainable development in Slovakia remains equally extensive. It includes environmental protection, energy, waste management, nature conservation and water protection laws. Like other countries, Slovakia is implementing the EU Taxonomy and related legislation, a recent major strategic shift in aligning national environmental and economic policy with the European Green Deal.

Environmental taxes and their derivatives, including ecological fees, are the most widespread tools for stimulating citizens and businesses to green activities. Each of the countries analysed uses a

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

wide range of such instruments. In Croatia, environmental taxes are mainly imposed on products, services or activities that negatively affect the environment. They generate public revenue, encourage environmentally friendly behaviour, reduce pollution, and promote sustainable consumption and production. The country classifies tax instruments into energy taxes (e.g., on fuels, electricity, heating), transportation taxes (e.g., on motor vehicles, flights, annual road tax), pollution taxes (e.g., on air and water emissions, solid waste management, noise), and natural resource taxes (e.g., on water abstraction, forest exploitation, mineral resources). It also operates a special tax on motor vehicles, calculated based on the scale of their CO2 emissions.

Although “eco-taxes” are not used by name in Poland, many public tributes are similar. It includes fees, surcharges, product fees, and varying tax rates and charges for exploiting the environment. The basic tributes are levied for emissions of gases and dust into the air, landfilling of waste, and fees resulting from sectoral regulations, such as the Law on Nature Protection (e.g., fees for entry to specific protected areas, including national parks), the Geological and Mining Law (e.g., fees for the exploitation of mineral resources and increased fees for exploitation without a license or in violation of its conditions). There are also fees for removing trees and shrubs from real estate or product fees for selected products, such as end-of-life vehicles and waste electrical and electronic equipment.

In Romania, the system of environmental taxation is less extensive and primarily concerns energy taxation and excise taxes on gasoline and diesel fuel. In addition, local governments can impose specific environmental taxes or fees to address regional problems, such as surcharges for waste management. These fees vary from region to region. Despite compliance with EU law, Romania still has room to strengthen its tax system through more targeted taxes on polluting activities and resource consumption.

In Slovakia, environmental taxes include energy taxes (e.g., excise taxes on motor fuels, natural gas, coal, and electricity), transportation taxes (e.g., vehicle registration fees, road taxes, some air transportation fees), pollution taxes (e.g., air emissions fees, sewage disposal fees), and natural resource taxes (e.g., fees for water abstraction, mineral exploitation, use of geothermal energy). Part of the revenue from environmental fees is directed to the Environmental Fund to support

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

environmental projects. Among the five countries analysed, the Slovakian system is the most like Poland's.

In Turkey, the Environmental Cleaning Tax (ECT), which is a direct environmental tax levied on those using buildings within municipal boundaries that use environmental services, remains key. The ECT consists of a solid waste tax (for garbage collection services) and a wastewater tax (for sewer services). The ECT's environmental effectiveness is limited because the tax is calculated (based on water consumption or building type rather than on the amount of waste generated) in a way that does not affect the waste generation itself but only covers the cost of waste collection and disposal. In addition to the ECT, other taxes, fees and administrative fines slumber through various regulations to protect the environment and implement the "polluter pays" principle. These regulations include, among other things, differential taxation to discourage environmentally harmful products (higher taxes) and encourage environmentally friendly products (lower taxes, exemptions).

In summary, all the countries analysed use the tax and fee system for environmental purposes to varying degrees and using different instruments. Croatia and Slovakia use a broader classification of ecological taxes (energy, transportation, pollution, natural resources).

Implementing green public procurement is also essential for greening various national policies. Legal analysis revealed that Croatia and Slovakia have implemented some of its principles to the greatest extent (partially or for specific categories and entities), often in the form of mandatory green public procurement, with clear targets and monitoring mechanisms (especially Croatia). Poland recognises sustainable procurement as a policy priority (at the level of declarations and strategic documents). However, its actual implementation is still at a low level. In the case of Romania, the analysis mentions green procurement but does not provide details on its implementation. In Turkey, green procurement is not regulated at all.

A vital element of the system for linking the worlds of economy and sustainability is the spread of principles of modern financial reporting, which, in addition to purely economic aspects, also considers social, natural and sustainability-related aspects. For this reason, a growing emphasis on sustainable finance and transparency in sustainability reporting has been identified in each of the jurisdictions studied, often influenced by EU regulations. The EU Taxonomy in this regard is applied by Poland, among others, implementing the CSRD in practice, preparing for implementing the

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Corporate Sustainability Due Diligence Directive as necessary and requiring changes in national law. Croatia, too, has integrated the EU Taxonomy and SFDR into its legal system. Croatian law requires large and listed companies to disclose the extent to which their operations comply with the criteria of the Taxonomy. In addition, the Croatian National Bank has adopted a "Climate Strategy" integrating climate and environmental issues into its operations. Slovakia has also implemented the EU Taxonomy, CSRD, and SFDR, with the National Bank of Slovakia playing a critical supervisory role in enforcing disclosures. In Turkey, the Environmental Taxonomy refers quite strictly to the EU Taxonomy. The country has introduced sustainability reporting regulations and sustainable financing guidelines, such as the "Principles for Sustainable Development of the Banking Sector" and the "Sustainable Banking Strategy of Turkey."

Concerning biodiversity and agriculture, all countries have legal frameworks and strategies for their protection, mainly in line with EU standards. Still, the challenge remains practical implementation, enforcement and provision of adequate resources for implementing regulations. Finally, all countries analysed recognise the importance of sustainable smart city development in the context of global environmental challenges and technological advances. Their approaches are characterised by seeking harmonisation with European Union policies, implementing national legal frameworks and strategies, and promoting the integration of green infrastructure and sustainable urban transportation. They emphasise smart construction, public transit and signalling systems, and the development of smart applications in areas such as health, transportation, energy or water management and disaster warning. Particularly promoted in this aspect is sustainable transportation through intelligent transportation systems (ITS) for traffic management and optimisation of public transportation, as well as the expansion of infrastructure for pedestrians and cyclists and promoting the development and protection of existing green infrastructure in urban development plans. Again, however, the analysis indicates that practical implementation and enforcement pose significant challenges. There are implementation disparities, especially in smaller municipalities, due to resource constraints, administrative fragmentation and limited capacity for rigorous environmental assessments.

Access to EU funds is also a challenge. Key differences between countries thus emerge in the degree of implementation and enforcement. Romania and Slovakia point to significant challenges

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

related to fragmentation, resources and the capacity of local authorities. At the same time, Croatia emphasises adapting EU goals to the local context. Conversely, Poland focuses mainly on legal mechanisms for climate change adaptation and urban transportation management. Turkey strongly emphasises harmonisation and smart city strategy within urban and metropolitan area spatial development plans.

Cooperation between universities and local environmental stakeholders is critical in each aspect under study. This cooperation seems essential to achieving sustainable projects and promoting environmentally friendly and economically responsible practices. Key elements of this collaboration include:

1. Legal and Strategic Framework: all countries have legal frameworks (e.g., local government laws, higher education laws) and national and municipal strategies that facilitate or explicitly promote cooperation between universities, local governments, non-governmental organisations (NGOs) and the private sector. It often means harmonising with European Union policies and funds (such as the European Green Deal, Cohesion Funds, research programs like Horizon Europe or national recovery plans) that require or encourage such partnerships. In Poland, these collaborations are supported by law and considered crucial to achieving sustainable development goals. The role of universities is becoming increasingly important in Polish law.
2. Knowledge Transfer and Innovation: Universities are key institutions for conducting research, producing knowledge and technology, supporting the development of national expertise, and collaborating on knowledge transfer and policy development. These partnerships enable the application of academic knowledge to solve local problems and develop innovative solutions in areas such as smart cities, green infrastructure and sustainable transportation.
3. Support for Local Authorities: universities and NGOs can support local governments in developing strategies and action plans, including climate change adaptation plans (like UAP in Poland), data management (such as transportation in Poland), and environmental impact assessment. They can also help increase local authorities' administrative and technical capacity, which is particularly important in smaller municipalities.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

4. Engaging the Public and Stakeholders: It engages citizens, communities, and NGOs in sustainable development projects' planning and implementation processes. NGOs are essential stakeholders in Turkey's smart city projects. In Poland, cooperation with NGOs and universities is supported by law and considered crucial. Despite formal legal support in Romania, partnerships are sometimes inconsistent in practice. In Slovakia, models such as the "quadruple helix" (academy, government, industry, civil society) come to the fore in the context of innovation.

Table 1. Overview of key legal, environmental solutions descriptors

Regulatory area	Croatia	Poland	Romania	Slovakia	Turkey
Key environmental taxes and fees	Special tax on motor vehicles based on CO2 emissions from engine power A fee system for reusable packaging has also been recently introduced Environmental	user fees (air emissions, wastewater input, waste disposal) Product tax for failure to meet collection/recycling levels of electro-waste Differentiation of excise tax rates for green fuels	There are classical energy, resource, transportation, and pollution taxes. There is a need to strengthen further tax policies, especially regarding greenhouse gas emissions or pollution-intensive industries.	Taxation covers air emissions, water pollution and waste management. There are draft laws on light fees Revenue from the fees partially powers the Slovakian Environmental Fund	Environmental cleaning tax (ECT) for buildings, VAT exemptions for recycling, special consumption tax (SCT) on certain products, levies on plastic and environmentally harmful products
Waste management	The waste management law regulates recycling and waste prevention. Revenues from the system subsidise waste management projects	The Electrical and Electronic Waste Management Act imposes a product tax for this type of packaging. A system undergoing incremental development	Romanian waste management system law transposes relevant EU directives	The Waste Management Act establishes rules for collection, segregation, recycling and disposal, supporting a closed-loop economy, introduces extended producer responsibility and prohibits landfilling of recyclable waste	Fees for plastic products and VAT exemptions for recycling are in place

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Regulatory area	Croatia	Poland	Romania	Slovakia	Turkey
Water management	The Water Management Strategy of the Republic of Croatia and related legal acts implement the EU Water Framework Directive	The basic legal act is the Water Law, which implements the EU Water Framework Directive There is a state water management company, "Polish Waters", under the minister responsible for water management for coordination of activities	Water law harmonises national legislation with the EU Water Framework Directive	The Water Law provides for integrated catchment management. The Slovak Water Company and the Hydrometeorological Institute are responsible for the management	Recognised in the legal system as a key environmental asset, e.g., wetland protection regulations
Conservation of nature and biodiversity	The Law on Nature Protection provides the foundation for regulating the protection of ecosystems and species. A relevant decree also established the Natura 20004 network areas. The Strategy and Action Plan for the Protection of Biological and Landscape Diversity was adopted	The Law on Nature Protection is the central regulation, supplemented by the Forest, Water, and Hunting Law provisions. Also adopted was the Strategy for Sustainable Development of Rural Areas, Agriculture and Fisheries	Included in Romania's Law on Spatial Planning and Urbanism, Environmental Protection and the Regulation and Management of Green Areas. Harmonised with EU directives and strategies, although practical implementation is a challenge	The National Biodiversity Strategy 2020-2030 calls for, among other things, working with farmers on agri-environmental measures and promoting public awareness of biodiversity	Agricultural Strategy and National Action Strategy for Compliance with the Convention on Biological Diversity
Energy efficiency and renewable energy	A program to renovate multi-apartment buildings, including subsidies for photovoltaic installations. The Energy Strategy of the Republic of Croatia until 2030 with an Outlook to 2050 calls for increasing the share of energy from RES in public procurement to 50% by 2025 and 65% by 2030 for public administration bodies	In addition to the energy law, there are a number of specific laws – on renewable energy sources, energy efficiency, electromobility and alternative fuels, and support for thermo-modernization and renovation of buildings. Subsidies from the National Fund for Environmental Protection and Water Management and provincial funds	State aid for green projects includes subsidies or tax credits for installing renewable power, renovations aimed at energy efficiency or adopting clean technologies.	Emissions reduction in the industry supported by dedicated funds. There is a building renovation program targeting zero-emission for 30,000 buildings by 2030. Numerous subsidies from the Environmental Protection Fund for thermal upgrades	The Energy Efficiency Policy was adopted and followed by a law and subsidy programs for energy efficiency improvement projects, in which priorities for renewable energy appear.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Regulatory area	Croatia	Poland	Romania	Slovakia	Turkey
Green public procurement	They are mandatory for government bodies from 2024	Rare in practice. It is only the possibility (not necessity) of including environmental aspects in public procurement law	Despite a legal framework harmonised with EU law, practical use and enforcement at the local level is limited	Green Procurement is voluntary for most institutions but has become important in public policy strategy	Lack of binding regulations in this area
Sustainable finance and reporting	Croatia implements EU Taxonomy, requiring sustainability disclosures in the financial sector.	Poland implements EU Taxonomy but records the lowest percentage of companies qualifying for implementation	Reporting obligations are being introduced. In practice, there are challenges related to data quality and completeness.	Slovakia has adopted the EU Taxonomy Implementation by the National Bank of Slovakia	Turkish Green Taxonomy expected for implementation in 2024-2025 There are also Turkish Sustainability Reporting Standards, comparable to EU standards
Sustainable urban development and transportation	The Traffic Law signals some implementation. Policy documents encourage investment in public transportation, including promoting rail transportation and encouraging integrated urban transit.	Restriction to regulations on urban traffic data management. Numerous local government strategic documents indicate the need to develop a sustainable transportation system.	The local governments of specific cities undertake most measures to promote sustainable transport, usually using EU funds.	Many cities have Integrated Strategies for Sustainable Urban Development. Most solutions are not in the law but in numerous strategic documents. Numerous investments in public transportation co-financed by EU funds	Development plans emphasise using information technology in transportation, traffic and building management. There is a National Strategy and Action Plan for Smart Cities 2020-2023. Much of the regulation transfered to the municipal government level.

Source: own study.

In summary, Turkey, Romania, Croatia, Poland and Slovakia actively develop legal frameworks and strategies to promote sustainable green growth, often aligning with EU regulations and goals. Common areas of focus include green economy (taxes and incentives), sustainable financing (implementation of the EU Taxonomy and reporting), environmental management (water, agriculture, biodiversity), sustainable urban development and smart cities. A key element in promoting and implementing these initiatives is the nationally recognised need for cooperation between universities, local governments and other local actors such as NGOs. Challenges include

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

effective enforcement, increasing revenues from green taxes (in the case of Slovakia) and further implementation of green public procurement.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Ecology Awareness of Sustainable Green Development: Collaboration of Universities and Local Actors

2023-1-SK01-KA220-HED-000161639

COUNTRY-BASED LEGAL ANALYSIS

CROATIA

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

GREEN ECONOMY

1.1. Environmental Taxes

Environmental taxes are tax instruments levied on products, services or activities that have a negative impact on the environment. Their main purpose is not only to raise public revenue, but also to encourage environmentally conscious behavior. These taxes provide financial incentives for pollution and promote sustainable consumption and production. The aim of environmental taxes is to:

1. Reducing pollution and greenhouse gas emissions
2. Promoting sustainable development
3. Increasing public revenues for environmental projects
4. Internalization of external effects

The laws regulating the types of tax are enacted by the Government of the Republic of Croatia, which also monitors the effects of the tax, carries out inspections and ensures compliance. The following environmental taxes exist in the Republic of Croatia:

Environmental taxes are taxes whose tax base is a physical unit (or its substitute) of something that is proven to have a specific negative impact on the environment and is identified as a tax in the ESA (European System of Accounts) 2010.

Environmental fees are the same as fees and are defined as compulsory, gratuitous payments to the state or to bodies outside the state, such as environmental protection funds or water management. Fees are considered payments for services.

Environmental tax revenues are revenues from taxes within a specific environmental category (taxes on energy products, taxes on transportation, taxes on pollution and taxes on natural resources).

Energy taxes include taxes on energy production and on energy products used for transportation and stationary purposes. The most important energy products for transportation are gasoline and diesel. Stationary fuels are heating oil, natural gas, coal and electricity. This category also includes CO2 taxes.

Transportation taxes include taxes on the ownership and use of motor vehicles, taxes on other means of transport (e.g. aircraft) and related transport services (e.g. taxes on charter flights or scheduled flights). Transportation taxes can also be "one-time" taxes related to the import or sale of equipment or permanent taxes, such as an annual road tax.

Pollution taxes include taxes on measured or estimated emissions to air and water, on solid waste management and on noise. CO2 taxes, which are included in energy taxes, are an exception.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Taxes on natural resources (excluding taxes on oil and gas extraction) are a group that includes taxes on the extraction or use of natural resources such as water, forests, wildlife and fauna, as these activities deplete natural resources.

Legal acts regulating environmental taxes in the Republic of Croatia:

Law on Excise Duties (Official Gazette 106/2018, 121/2019 and 144/2021)

This Act regulates the taxation of products subject to excise duty, including energy products and electricity. Details on the amount of excise duties on various types of energy products, such as unleaded and leaded gasoline, diesel fuel, heating oil, liquefied petroleum gas (LPG) and electricity, are set out in the **Regulation on the Amount of Excise Duties on Energy Products and Electricity**. According to this regulation, the excise duty on unleaded motor gasoline, for example, is 512.31 EUR/1000 liters, while the excise duty on diesel fuel is 406.13 EUR/1000 liters. This information can be found on the official website of the Customs Administration of the Republic of Croatia.

Act on Special Tax on Motor Vehicles (OG 15/2013) - this act establishes a special tax on motor vehicles intended for use on the roads of the Republic of Croatia. The tax is calculated on the basis of CO_2 emissions, the sales price of the vehicle, engine power and other criteria. Details on the calculation method and the amount of the tax can be found in the law itself.

Regulation on Special Tax on Motor Vehicles (OG 1/2017) - this regulation details the implementation of the law on the special tax on motor vehicles, including the procedure for calculating and paying the tax.

Law on Local Taxes (OG 152/2024) - this law regulates the type and amount of taxes that local self-government units may levy, including a tax on road motor vehicles and a tax on ships. Details on these taxes can be found on the official website of the Croatian Vehicle Center.

The Waste Management Act (OG 84/2021) regulates the recycling rate. The law prescribes measures to prevent the generation of waste, reduce the negative impact of waste and promote recycling and reuse. Details on the obligations of producers and other entities in the waste management system can be found in the law itself.

The same Act introduces measures to reduce the use of plastic bags, including the possibility of charging a fee for their use. The aim is to reduce the negative impact of plastic products on the environment.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

The same Act also contains provisions on administrative offenses and penalties for non-compliance with legal obligations in the area of waste management. Details on the types of administrative offenses and the amount of penalties are specified in the relevant articles of the Act.

In Croatia, the Fund for Environmental Protection and Energy Efficiency acts as a key institution for financing projects aimed at environmental protection and energy efficiency. The activities of the Fund are regulated by the **Act on the Environmental Protection and Energy Efficiency Fund** (OG 107/2003, 144/2012).

The fee system for reusable packaging is regulated by the **Ordinance on Packaging and Packaging Waste** (OG 88/2015, 78/2016). This ordinance stipulates the obligations of manufacturers and importers with regard to the take-back fee for certain types of packaging.

The awarding of ecolabels in Croatia is regulated by the Ecolabel Ordinance (OG 70/2015). This regulation defines the criteria and procedure for awarding the eco-label to products and services that meet certain environmental standards.

Trading in carbon emissions is regulated by **the Ordinance on the Method of Trading in Greenhouse Gas Emission Units** (OG 89/2020). The regulation prescribes the method of trading emission units, the obligations of installation operators and the procedures for monitoring and reporting greenhouse gas emissions.

1.2. Other Regulations

In addition to environmental taxes, the Republic of Croatia has a comprehensive system of laws and regulations governing various aspects of environmental protection.

1. **The Environmental Protection Act** (OG 80/13, 153/13, 78/15, 12/18, 118/18) forms the basis for comprehensive environmental protection, including the preservation of biodiversity, the rational use of natural resources and ensuring sustainable development. This law is the basic legal act for environmental protection in Croatia. It is based on the principle that economic growth must be in harmony with ecological limits.
2. **The Air Protection Act** (OG 127/19, 57/22, 136/24) regulates measures to prevent and reduce air pollution, establishes air quality standards and sets limits for the concentration of pollutants in the air. It also regulates air monitoring in accordance with EU directives.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

3. **The Sustainable Waste Management Act** (OG 94/13, 73/17, 14/19, 98/19) creates a legal framework for the proper disposal of waste, promotes recycling and reduces the amount of waste disposed of.
4. **The Water Act** (OG 66/19, 84/21, 47/23) ensures the protection of surface and underground waters, regulates their use, establishes models to protect the population from flooding, sets standards for drinking water, industrial water and wastewater, sets limits for chemical substances in water and implements a national plan for sustainable water use.
5. **The Nature Conservation Act** (OG 80/13, 15/18, 14/19, 127/19, 155/23) aims to preserve biodiversity, protect endangered species and establish protected areas. It categorizes protected areas such as national parks, nature parks and special reserves, provides guidelines for the protection of endangered species, monitors the standardization of the Natura 2000 ecological network and prescribes penalties for illegal deforestation.
6. **The Noise Protection Act** (OG 30/09, 55/13, 153/13, 41/16, 114/18, 14/21) aims to reduce the harmful effects of noise on human health.
7. **The Chemicals Act** (Official Gazette 150/2005) aims to ensure the safe handling of chemicals and reduce their negative impact on the environment and health. It strictly regulates pesticides and industrial chemicals in particular.
8. **The Law on Protection against Light Pollution** (OG 14/19) aims to reduce the negative effects of excessive or inappropriate artificial lighting on the environment, human health and ecosystems. It sets standards for private and public lighting, limits light emissions into the sky and neighboring buildings, and requires the use of energy-efficient and environmentally friendly lighting fixtures.
9. **The Act on Radiological and Nuclear Safety** (OG 141/13, 39/15, 130/17, 118/18, 21/22, 114/22) ensures the protection of people and the environment from the harmful effects of ionizing radiation and regulates the safety of nuclear facilities. It specifies the permissible radiation exposure, regulates the use of radioactive material and the operation of nuclear facilities and stipulates the obligation to monitor and report on radiation levels in the environment.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

1.3. Incentives

Incentive instruments are regulations that, in addition to traditional command and control approaches, encourage behavior through price signals. These policy instruments, such as government cash grants for projects, tradable permits, pollution charges and tax incentives that reduce tax liabilities, referred to as "harnessing market forces" because, when properly implemented, they encourage stakeholders to make pollution reduction efforts that are in their financial self-interest and meet overall policy objectives.

Croatia is implementing a range of financial and legal incentives to promote the development of a green economy and sustainable practices. These incentives are aligned with European strategies such as the European Green Deal and the EU Taxonomy for Sustainable Investment, with the aim of reducing the carbon footprint and strengthening the circular economy. These incentives are financed from national funds, EU funds and credit lines from specialized institutions.

The Environmental Protection and Energy Efficiency Fund (EPEEF) is the central point for collecting and investing extra budgetary resources in the programmes and projects of environmental and nature protection, energy efficiency and use of renewable energy sources. The EPPF provides subsidies for the energy renovation of buildings (public and private), support for the purchase of energy-efficient household appliances and vehicles, and financing waste reduction and recycling projects.

The Government of the Republic of Croatia, in cooperation with the Ministry of Construction and Physical Planning, adopted the first Programme of energy renovation of multi-apartment buildings in July 2014, after which, from 2016, the funding started to be withdrawn from the EU funds. The calls supported energy efficiency measures and the use of renewable energy sources that were to result in annual savings of at least 50% in heating energy compared to the situation before the renovation at the level of a single apartment building, through an integrated approach with the implementation of measures to increase seismic and fire safety and to ensure healthy indoor climate conditions.

The EPPF also provides subsidies for the purchase of energy-efficient A+++ household appliances and eco-vehicles. With programs worth around 300 million kuna from 2014 to 2020, the Fund has promoted various ways to increase energy efficiency in the transport sector: from planning transport systems at local level to promoting more efficient public transport and environmentally friendly driving techniques to more energy and environmentally friendly vehicles, and good incentive practices continued after 2020. Under the EPPF program, the government grants subsidies for the purchase of electric and hybrid vehicles and provides tax relief for environmentally friendly vehicles in the form of lower excise duties and exemption from the special vehicle tax for electric and hybrid vehicles.

As part of its programs aimed at decarbonizing the housing sector, the Environmental Protection and Energy Efficiency Fund also promotes the installation of systems for the use of renewable energy

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

sources. A special co-financing program is used to co-finance the installation of photovoltaic power plants for the production of electricity for self-consumption on the roofs of existing single-family houses or on existing outbuildings located next to the single-family house. For example, the grants amount to a maximum of 50% of the justified costs of the project, i.e. 600 euros per kW of nominal power of the installed photovoltaic power plant.

Furthermore, the Fund subsidizes waste management and recycling projects of cities and municipalities. For example, the preparation of project documentation for the application of projects for the construction of waste management centers for EU co-financing is financed by EU funds and EPPF funds. By the Government Decision on the coordination of activities related to the construction and equipping of waste management centers from May 2019, financing of the construction and procurement of equipment for waste management centers is realized according to the shares of the European Union + Environmental Protection and Energy Efficiency Fund - 90% and local/regional self-government units - 10%.

The Ministry of Physical Planning, Construction and State Property allocates grants for the implementation of pilot projects at the local level by local government units, linked to national programs for the development of green infrastructure in urban areas and/or circular management of space and buildings. The following activities are co-financed: green infrastructure on public land, green infrastructure on a plot on which public and social buildings are built, green roof, facade, urban garden, etc. on public or social buildings, reconstruction and equipping of an unused building and bringing it back to its original purpose, preparation of project and other documentation, preparation of an energy audit and energy certificate after the circular renovation of the building, cost of professional/design supervision, cost of an occupational safety coordinator, project management and administration, project promotion and visibility activities and horizontal activities.

The credit programs of the Croatian Bank for Reconstruction and Development also play an important role in promoting the development of a green economy and sustainable practices within the business community. For example, the Croatian Bank for Reconstruction and Development and the Ministry of Regional Development and European Funds are participating in the implementation of the financial instrument "Loans for Energy Efficiency of Entrepreneurs", which will enable entrepreneurs in various sectors to access loans with favorable interest rates and the possibility of partial write-off of the loan principal. In addition, various grants are available for entrepreneurs through the green transition investment support mechanism, which supports investments by small and medium-sized enterprises in green and/or digital technologies.

In the agricultural sector, the incentives are granted by the Paying Agency for Agriculture, Fisheries and Rural Development (PAAFRD). Current incentives are included through; Eco-scheme for intensified agricultural land diversification, Eco-scheme for extensive pasture management, Eco-scheme for intensified maintenance of ecologically significant areas, Eco-scheme for the use of manure on arable land, Eco-scheme for a minimum share of legumes of 20% within agricultural land,

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Eco-scheme for conservation agriculture and Eco-scheme for the preservation of grasslands of high natural value.

It can be concluded that Croatia is actively applying a range of financial and legal incentives to promote the green economy. Further development should focus on reducing administrative barriers to the use of grants and achieving better coordination between local and state institutions, as well as further development of the range of incentive measures.

1.4. Green Public Procurements

Green public procurement is defined as a process through which public authorities are encouraged to purchase "green" products and services, i.e., those that have a lower environmental impact throughout their lifecycle compared to products they would otherwise procure. Green Public Procurement (GPP) is a key component of sustainable development in Croatia and aligns with European Union policies.

Although the government adopted the first National Action Plan for Green Public Procurement in 2015, progress remained minimal until 2023. During this period, less than 1% of public procurement in Croatia was green, making it the EU member state with the lowest share of green procurement.
In 2021, Croatia adopted the Decision on Green Public Procurement in Central Procurement Procedures defining that the Central State Office for Central Procurement is required to apply GPP criteria in procurement procedures as part of the technical specification and/or award criteria. The obligation concerns primarily the purchasing categories of office supplies, consumables, computers and computer equipment, motor vehicles and the supply of electricity.

Significant progress was made in 2024 with the adoption of the Decision on the Implementation of Green Public Procurement (Official Gazette 137/2024), representing a major step towards a sustainable future in line with national and European environmental protection goals. This decision made green public procurement mandatory for state administration bodies and defined the items for which green procurement is obligatory. Other public procurement entities, such as local and regional government units and other bodies under their jurisdiction, are encouraged to implement green public procurement. The objective is to promote sustainable products and services, reduce environmental impact, and contribute to the development of a circular economy.
State administration bodies are required to implement green public procurement for the following procurement items or groups:

- Electricity
- Office paper
- Paper products

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- Cleaning and hygiene products
- Cleaning services
- Computers and IT equipment
- Toners and inks
- Printed paper products, writing paper products, and paper bags
- Promotional materials
- Equipment for image recording, processing, and display, and televisions
- Air conditioners
- Lamps and electric bulbs
- Road vehicles
- Tires for motor vehicles
- Furniture, construction joinery, and other wooden construction elements
- Food and catering
- Clothing

This significant step makes Croatia one of the few EU member states that has made green public procurement, previously a voluntary instrument, mandatory for state administration bodies. One of the key innovations of this Decision is the direct connection of the Decision on the Implementation of Green Public Procurement with the EU Ecolabel – the official environmental protection mark of the European Union, where possible. The procurement of products and services with the EU Ecolabel is prioritized, aligning Croatia with the proposal for the Green Claims Directive. The implementation of the Decision will be monitored through the Electronic Public Procurement Notice and annual reports to state administration bodies, ensuring transparency and impact evaluation. The new Decision is aligned with the objectives of the European Green Deal and the National Action Plan for the Circular Economy.

By implementing this policy, Croatia paves the way for the development of a green economy and innovation while strengthening trust in environmental claims. The criteria for obtaining the EU Ecolabel are stricter than legally required minimums and are regularly updated to reflect technological innovations, market changes, and the latest scientific findings to ensure that standards remain current, robust, and reliable. For specific products and services covered by this Decision, concrete criteria are defined, such as the use of recycled materials, energy efficiency, and waste reduction.

Goals have been set for the procurement of recycled paper, and at the same time, the acquisition of printing and copying devices must support the use of paper containing 100% recycled fibers.
New rules mandate that public authorities ensure that at least 50% of procured electricity comes from renewable sources by 2025, with a target increase to 65% by 2030. This not only reduces

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

greenhouse gas emissions but directly supports the development of renewable energy sources, ensuring Croatia's leading role in the energy transition.

The Decision introduces strict rules for procuring technical equipment. State administration bodies must procure computers, monitors, printers, and household appliances such as air conditioners and lighting exclusively from the highest energy classes. For instance, air conditioners must have at least an A+ energy rating, while 90% of electric bulbs procured by 2030 must be of the highest energy efficiency class. This measure directly reduces energy consumption and associated costs while supporting the ambitious energy efficiency targets of the European Union.
Particular attention is given to the procurement of clean and energy-efficient vehicles. By 2028, at least 50% of new vehicles for state administration bodies must meet strict energy efficiency criteria. This includes electric, hybrid, and other low-emission vehicles, fostering the decarbonization of the transport sector – one of the biggest challenges in combating climate change.

Furniture and construction elements made of wood must come from sustainably managed forests certified by schemes such as FSC or PEFC. By 2030, at least 50% of the volume of wooden materials in public procurement must originate from sustainable sources. These measures contribute not only to forest conservation but also support the local wood industry and employment.

One of the key aspects of the new Green Public Procurement Decision relates to the procurement of agricultural and food products, emphasizing ecological sustainability, freshness, and seasonality. The goal is not only to reduce environmental impact but also to promote healthy eating and support local producers. Healthier and more sustainable food in Europe is a crucial objective of the EU's "Farm to Fork" strategy, aimed at creating a sustainable food system that benefits people, the environment, and the economy. By 2030, at least 30% of procured food products must come from organic and/or integrated agricultural production, quality systems registered at national and European levels, or short food supply chains. This measure supports local farmers, reduces greenhouse gas emissions associated with food transport, and contributes to the development of a sustainable food system.
Single-use plastic packaging for fruits, vegetables, and other food products will be completely banned. Catering services must use reusable packaging, with at least 80% of beverages served in reusable containers, while the remaining 20% must be in non-plastic packaging. Catering service providers must submit a waste reduction plan during food preparation. This Decision eliminates the use of single-use plastic food packaging and reduces food waste in line with waste management planning documents and the Proposal for the European Parliament and Council Directive amending Directive 2008/98/EC on waste.
Public procurement in Croatia accounts for approximately 16% of GDP, meaning that green public procurement will significantly contribute to the development of the market for sustainable products and services.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Other strategic documents regulating this area include:

- Public Procurement Act (Official Gazette 120/16)
- Strategy for Sustainable Development of the Republic of Croatia (Official Gazette 30/09)
- Energy Development Strategy of the Republic of Croatia until 2030 with a view to 2050 (Official Gazette 25/2020)
- Environmental Protection Act (Official Gazette 80/13, 153/13, 78/15, 12/18, 118/18)
- Low-Carbon Development Strategy of the Republic of Croatia until 2030 with a view to 2050 (Official Gazette 63/2021)
- Waste Management Plan of the Republic of Croatia for the period 2023–2028 (Official Gazette 84/2023)
- Integrated National Energy and Climate Plan of the Republic of Croatia for the period 2021–2030 (NECP)

In conclusion, green public procurement has great potential to reduce greenhouse gas emissions, promote innovation, and drive sustainable economic development. Further progress requires strengthening education on GPP and improving result monitoring.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUSTAINABLE GREEN FINANCING AND SOCIAL RESPONSIBILITY

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

2.1. EU Taxonomy for Sustainable Activities

The EU Taxonomy for Sustainable Activities serves as a pivotal framework within the European Union's sustainable finance agenda, aiming to direct investments toward environmentally sustainable economic activities. This classification system delineates specific criteria to ascertain the environmental sustainability of various economic undertakings, thereby facilitating the EU's transition toward a net-zero emissions economy by 2050.

The Taxonomy Regulation identifies six key environmental objectives:

1. Climate Change Mitigation
2. Climate Change Adaptation
3. Sustainable Use and Protection of Water and Marine Resources
4. Transition to a Circular Economy
5. Pollution Prevention and Control
6. Protection and Restoration of Biodiversity and Ecosystems

For an economic activity to be deemed environmentally sustainable under the EU Taxonomy, it must satisfy the following conditions:

- Substantial Contribution: The activity must significantly advance one or more of the six environmental objectives.
- Do No Significant Harm (DNSH): It should not adversely affect any of the other environmental objectives.
- Compliance with Minimum Social Safeguards: Adherence to international labor standards and human rights guidelines.
- Alignment with Technical Screening Criteria: Meeting specific performance thresholds established by the European Commission.

As an EU Member State, Croatia is obligated to integrate the EU Taxonomy into its national regulatory and legislative frameworks. This integration ensures that Croatian enterprises, particularly large and publicly listed companies, align their operations with the EU's sustainability benchmarks. Consequently, these companies are required to disclose the extent to which their activities conform to the Taxonomy's criteria, encompassing aspects such as revenue streams, capital expenditures, and operational expenditures related to environmentally sustainable activities. The adoption of the EU Taxonomy presents both challenges and opportunities for Croatian businesses. In terms of enhanced transparency companies are now expected to provide detailed disclosures regarding the sustainability of their operations, fostering greater transparency and accountability. Alignment with the Taxonomy can enhance a company's appeal to investors seeking sustainable investment opportunities. Due to this businesses may need to modify their practices to meet the stringent criteria set forth by the Taxonomy, potentially involving significant capital investments.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Recent developments and data indicate a positive trend in the adoption of the EU Taxonomy across Member States as presented in Table 2. Implementation of the Taxonomy resulted in increased capital investments: In 2023, approximately 600 European companies reported capital investments totaling €191 billion in Taxonomy-aligned activities. By May 2024, this figure had risen to €249 billion, underscoring a growing commitment to sustainable investments. The utilities sector, particularly electricity providers, has demonstrated significant alignment, with over 60% of their capital investments meeting Taxonomy criteria.

Table 2. Taxonomy-Aligned Investments by Sector (2023)

	Taxonomy-aligned investments			
	Number of companies reporting		**Total aligned investments (€bn)**	
	2022	**2023**	**2022**	**2023**
Utilities	62	67	109	132
Consumer discretionary	66	86	35	45
Industrials	207	243	22	27
Energy	26	32	11	23
Real estate	35	41	4	5
Other sectors	212	254	11	16
TOTAL	**608**	**723**	**191**	**249**

Source: European Commission – The EU Taxonomy's Uptake on the Ground

The EU Taxonomy also serves as a cornerstone for the EU's broader sustainable finance strategy by providing a ˝green˝ framework for investors, businesses, and policymakers to identify and support environmentally sustainable projects. One notable aspect of the EU Taxonomy is its dynamic nature. The criteria are subject to regular updates to reflect scientific advancements and evolving policy goals. The Platform on Sustainable Finance continuously evaluates and recommends modifications, ensuring that criteria remain ambitious. Furthermore, the EU Taxonomy emphasizes transparency. Financial participants must disclose their investments' alignment with the Taxonomy, enhancing investor confidence and mitigating greenwashing.

In the future period the EU Taxonomy for Sustainable Activities will serve as a transformative tool in steering the European Union, toward a more sustainable and transparent economic landscape. By establishing clear criteria for environmental sustainability, it not only aids in achieving the EU's climate objectives but also enhances market transparency, mitigates greenwashing, and fosters investor confidence in sustainable economic activities.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

2.2. Sustainability Reporting

In the modern economy, environmental protection and social responsibility have become important factors for market success. The global focus on sustainability means that information on the environmental and social aspects of business activities is becoming increasingly important for a wider social audience. The number of users of sustainability information outside companies is growing, leading to greater demand for such information and efforts to interpret non-financial impacts in business operations appropriately.

The reasons for publishing sustainability reports are as diverse as their users (managers, suppliers, employees, consumers and the public), with the main purpose of transparently informing the stakeholders on environmental and social value and risks of business operations. This means that the quality of sustainability information should be comparable to that of regular financial reporting. In practise, there are numerous international standards, directives of the European Union and EU member states national laws that promote and gradually introduce the obligation of sustainability reporting. Such reporting essentially integrates financial, environmental and social information related to business activities.

To better understand the current state of sustainability reporting in the EU and Croatia we provide an overview of the existing regulation regarding sustainability reporting and possible comparative analysis. The focus is on harmonization, similarities, and differences between these legislative frameworks.

1. Sustainability reporting in the EU has become even more important with the announcement of a comprehensive legislative platform for the application of ESG (environmental, social and governance) principles in companies and the financial sector. Although sustainability reporting was already present in corporate practise, recent EU directives have emphasised the need for standardisation of sustainability reports and indicators. With the increase in economic activities based on a green transformation, greater transparency in sustainability reporting in the financial sector has become essential. In order to increase the transparency of so-called green investments, the EU Regulation 2019/2088 on sustainability-related disclosures in the financial services sector (known as the **Sustainable Finance Disclosure Regulation – SFDR**) came into force on 29 December 2019. Its gradual implementation began in March 2021 and will be fully applied to financial market participants by 2023. The regulation aims to ensure the reliability and accuracy of financial products and services labelled as green or sustainable, prevent abuses such as greenwashing and improve the visibility of sustainability-related investment content. Financial market participants are therefore required to provide additional reports on various sustainability aspects and the social and environmental impact of their products and services. The SFDR aims to protect consumers as end-investors by ensuring that

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

they receive complete information on the sustainability contributions of financial products or services on the EU market. This regulation is in line with the **European Green Deal** (EGD), which emphasises sustainable technologies, economic activities and sustainable financing processes.

In order to create synergies between the corporate and financial sectors in achieving clear sustainable development outcomes, the EU adopted the **Corporate Sustainability Reporting Directive (CSRD) (EU Directive 2022/2464)** on 14 December 2022. This directive replaces the previous directive on non-financial reporting (NFRD). This directive amends existing EU accounting and financial directives, expands sustainability reporting obligations for companies by requiring companies to obligatory disclose ESG-related data in annual reports. Currently, companies disclose sustainability data inconsistently by using different reporting formats such as integrated reporting, non-financial reporting, sustainability reports, environmental or social reports and triple bottom line (TBL) reports. To avoid such diversification, the CSRD aims to create a standardised reporting framework that obliges companies to regularly publish reliable and comparable sustainability data. The CSRD defines the scope of sustainability reporting obligations on the basis of three criteria:

1) Net revenue (€40 million)
2) Total assets (€20 million)
3) Average number of employees (250 or more).

These criteria potentially affect more than 60,000 companies in the EU Member States, which poses significant organisational and legal challenges. The auditing profession also faces challenges as the CSRD requires independent verification of sustainability information by auditors, similar to financial reporting, which provides limited assurance on sustainability data.

2. Regulation (EU) 2019/2088, on Sustainability-Related Disclosures in the Financial Services Sector (SFDR), establishes transparency rules for sustainability-related disclosures in the financial services sector. It aims to prevent greenwashing and enhance investor decision-making by ensuring financial market participants and advisors provide clear, consistent, and comparable information on sustainability risks. **Key Objectives of the SFDR are:**

- increase transparency regarding sustainability risks in financial markets,
- prevent misleading sustainability claims (greenwashing),
- ensure comparability of sustainability-related disclosures across financial products.
- promote sustainable investment by providing reliable data to investors.

The SFDR introduces detailed disclosure requirements for financial market participants and financial advisors. The regulation applies to: 1) f**inancial market participants** (investment firms, asset managers, insurance companies, pension funds, etc.), 2) f**inancial advisors** offering investment

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

advice, 3) f**inancial products** marketed as sustainable investments. Financial market participants according to SFDR must disclose:

1. **Sustainability risks** in investment decision-making.
2. **Adverse impacts** of investment decisions on sustainability factors.
3. **Sustainability-related characteristics** of financial products.
4. **Alignment of financial products** with environmental, social, and governance (ESG) criteria.

The SFDR came into force on **March 10, 2021** while more detailed reporting requirements under **Regulatory Technical Standards (RTS)** were introduced in **2022 and 2023**.

Regarding the Croatian Financial Sector Croatian financial institutions must align their disclosure practices with SFDR requirements while ational regulators, including the Croatian Financial Services Supervisory Agency (HANFA), oversee compliance. **Asset managers and banks** have to do additional reporting and compliance costs in order to achieve greater transparency in ESG investment products. I**nvestors** and **SMEs** are under indirect impact due to ESG criteria in investment selection. SFDR Regulation (EU) 2019/2088 plays a crucial role in improving transparency and accountability in sustainable finance. For Croatian financial institutions, compliance with SFDR presents both challenges and opportunities. While regulatory adaptation requires significant effort, adherence to SFDR can enhance market credibility and contribute to the broader EU sustainable finance agenda.
The CSRD Directive and the SFDR Regulation have a legislative effect, which is transposed into the legal framework of the Member States by national laws. In the Republic of Croatia, the application of the SFDR Regulation was implemented by the Act on the Implementation of Regulation (EU) 2019/2088 on sustainability-related disclosures in the financial services sector and Regulation (EU) 2020/852 establishing a framework to facilitate sustainable investment and amending Regulation (EU) 2019/2088 (Official Gazette 70/21).

3. Directive (EU) 2024/1760 on corporate sustainability due diligence (CSDDD) and amending Directive (EU) 2019/1937 and Regulation (EU) 2023/2859 requires companies to identify, prevent, and mitigate adverse human rights and environmental impacts in their operations and value chains. This Directive applies to EU and non-EU companies with significant operations within the EU and, in general has an objective to strengthens accountability in global supply chain. CSDDD Directive establishes a corporate sustainability due diligence framework aimed at promoting responsible business conduct within the EU and globally. This directive aligns with the European Green Deal and the EU's broader sustainability and human rights policies. key Objectives of the CSDDD are:

a) Strengthening corporate accountability for sustainability-related risks.
b) Ensuring environmental and human rights due diligence in business operations.
c) Promoting transparency and sustainability in corporate governance.
d) Enhancing legal certainty and consistency across the EU market.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

The directive mandates that companies establish due diligence processes covering their entire value chain. **Scope and Coverage of the CSDDD applies to**: 1) arge EU-based companies (with over 500 employees and a net turnover of €150 million globally), 2) Non-EU companies operating in the EU that meet the financial thresholds and 3) High-risk sectors (such as textiles, agriculture, and minerals) with lower employee and revenue thresholds. In the process of due diligence companies are required to do next steps:

1. Identify and assess sustainability risks in their supply chains.
2. Implement risk mitigation and remediation strategies.
3. Establish grievance mechanisms for stakeholders.
4. Integrate sustainability due diligence into corporate policies and risk management.
5. Provide annual reports on due diligence measures and outcomes.

Non-compliance of companies with CSDDD can result in administrative fines imposed by national authorities, civil liability claims and reputational risks affecting investment and consumer trust. Croatia, as an EU member state, must transpose the directive into national legislation. Companies operating in Croatia will need to align their sustainability and corporate governance policies with the new due diligence requirements.

CSDDD objective is to improve supply chain transparency and risk management. For large corporations this means increased compliance costs but enhanced reputation and access to sustainable finance. CSDD for SMEs in supply chains means indirect compliance requirements, as larger firms will impose due diligence obligations on suppliers. For investors CSDDD enables better access to reliable sustainability-related information, leading to improved risk assessment. Main opportunity for investors complying CSDDD is access to green finance: Compliance facilitates eligibility for sustainability-linked loans and EU funding.

CSDD Directive (EU) 2024/1760 marks a significant step toward responsible corporate conduct in the EU. For Croatian businesses, aligning with the directive presents both compliance challenges and strategic opportunities. Early adoption will not only ensure regulatory adherence but also provide a competitive edge in the evolving global sustainability landscape.

4. Croatian National Laws and Guidelines in the area of sustainability reporting includes:

1) Accounting Act (Official Gazette 85/2024)

- Aligns with CSRD by requiring companies to include sustainability disclosures.
- Introduces enhanced transparency in ESG reporting.
- Mandates reporting on social and environmental performance alongside financial statements.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

2) HANFA's ESG Guidelines for Issuers

- Provides recommendations for ESG-related disclosures.
- Helps financial entities comply with SFDR and EU Taxonomy.
- Supports transparency and comparability of sustainability information.

Table 3. Comparative Analysis of EU and Croatian national legislation

Aspect	EU Directives & Regulations	Croatian National Laws & Guidelines
Corporate Sustainability Reporting	CSRD mandates extensive ESG disclosures in annual reports.	Croatian Accounting Act incorporates similar ESG reporting requirements.
Financial Sector Disclosures	SFDR requires financial entities to disclose sustainability risks.	HANFA's ESG Guidelines align with SFDR's disclosure standards.
Sustainable Investment Classification	EU Taxonomy defines environmentally sustainable economic activities.	HANFA's Guidelines help issuers align with EU Taxonomy.
Corporate Due Diligence	Due diligence on human rights & environment under Directive (EU) 2024/1760.	Croatian laws evolving to include corporate sustainability due diligence.

Croatian legislation and regulatory guidelines have been progressively aligned with EU sustainability directives. The Accounting Act and HANFA's guidelines play a crucial role in ensuring compliance with EU requirements. Future legislative developments in Croatia will likely further integrate sustainability due diligence obligations in line with Directive (EU) 2024/1760.

2.3. Guidelines in Sustainable Finance

Key guidelines, initiatives and directives of the European Union on Sustainable Finance:

1. **Action Plan on Sustainable Finance (2018)**: In 2018, the European Commission introduced an action plan aimed at redirecting private capital towards sustainable investments, managing financial risks associated with climate change, and promoting transparency and long-term thinking in financial and economic activities.
2. **Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

3. **Strategy for Financing the Transition to a Sustainable Economy (2021)**: This strategy builds on the previous action plan and focuses on further integrating sustainability into corporate governance and reducing the impact of unsustainable activities.
4. **EU Taxonomy Regulation**: This regulation establishes a classification system for sustainable economic activities, providing a common language for investors and companies to identify environmentally sustainable activities.
5. **Sustainable Finance Disclosure Regulation (SFDR)**: The goal of this regulation is to increase transparency regarding sustainability-related information provided by financial entities, enabling investors to make informed decisions.
6. **Guidelines from European Supervisory Authorities (ESA)**:The ESAs have issued guidelines to help financial markets apply sustainable finance requirements, including aspects of suitability under the MiFID II Directive.

Croatia has been actively aligning its sustainable finance regulations with European Union directives to promote environmental, social, and governance (ESG) considerations within its financial sector. Below is an overview of the key regulatory developments and initiatives in Croatia related to sustainable finance:

1. Transposition of the Corporate Sustainability Reporting Directive (CSRD): In July 2024, the Croatian Parliament adopted the Accounting Act and amendments to the Audit Act, effectively transposing the EU's CSRD into national law. This mandates that identified entities commence sustainability reporting in 2025 for the financial year 2024 onwards. The legislation aims to enhance transparency and standardization in sustainability reporting among Croatian enterprises.

2. Implementation of the EU Taxonomy Regulation and Sustainable Finance Disclosure Regulation (SFDR): Croatia has integrated the EU Taxonomy Regulation (Regulation (EU) 2020/852) and the SFDR (Regulation (EU) 2019/2088) into its legal framework. The EU Taxonomy provides a classification system to identify environmentally sustainable economic activities, while the SFDR enhances transparency in sustainability-related disclosures by financial market participants. These regulations are interdependent and serve as foundational elements for promoting sustainable investments in Croatia.

3. National Legislation Supporting Sustainable Finance: The Croatian Parliament enacted the "Law on Implementation of the Disclosure and Taxonomy Regulation," (Official Gazzete 70/21) which, in conjunction with EU rules, establishes a comprehensive legal framework for sustainability in financing and investments. This law aims to elevate the preservation of social rights, introduce best practices in corporate governance, and foster a low-carbon economy resilient to climate change.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

4. Initiatives to Combat Greenwashing: Recognizing the prevalence of greenwashing, Croatia is actively implementing the National Programme for Consumer Protection 2021-2024 ," (Official Gazzete 29/21, prioritizing the development of specific legislation to address deceptive environmental claims. Additionally, significant amendments are underway for the Accountancy Act, Audit Act, and Capital Market Act to effectively incorporate the CSRD into Croatian law, thereby enhancing the credibility of sustainability reporting.

5. Croatian National Bank's (HNB) Climate Strategy: The HNB has adopted a Climate Strategy outlining objectives and priorities concerning climate change from 2024 to 2026. This strategy emphasizes integrating climate-related and environmental considerations into all areas of the bank's activities, supporting the transition to a low-carbon economy, and achieving climate neutrality.

6. Collaborative Efforts with the European Investment Bank (EIB): In November 2024, the EIB provided a €200 million loan to the Croatian Bank for Reconstruction and Development (HBOR) to expand financing for projects aimed at climate change mitigation and environmental sustainability. This collaboration underscores Croatia's commitment to fostering sustainable economic development through strategic investments.

These concerted efforts reflect Croatia's dedication to embedding sustainability within its financial system, ensuring alignment with EU standards, and promoting a transparent, resilient, and environmentally conscious economy.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

GREEN ENVIRONMENT AND AGRIFOOD

3.1. Water Management

Croatia has significant water resources, including rivers, lakes and groundwater, and is one of the most water-rich countries in the European Union. The legal entity Croatian Waters manages the water resources of the Republic of Croatia in four watershed areas, which comprise one or more basins of the main river courses or their parts that form a natural hydrographic unit. However, challenges such as climate change, pollution and inadequate infrastructure require a strong regulatory framework and a sustainable water management policy.

Croatia promotes sustainable water management through a series of legislative and financial measures. The most important legal and strategic documents regulating water resources management in Croatia are:

- **Water Act** (Official Gazette 66/2019, 84/2021, 47/2023) – the basic law that regulates the legal status of water and water estate, the methods and conditions of water management (water use, water protection, regulation of watercourses and other water bodies, and protection from adverse effects of water), the method of organizing and performing water management tasks and functions, basic conditions for carrying out of water management activities; powers and duties of Government administration and other Government bodies, local authorities and other legal subjects, and other issues of importance to water management. The Act also establishes "Croatian Waters" - the legal entity in charge of water management tasks. Under the conditions of this Act, water permits can be or are issued.
- **Water Management Financing Act** (Official Gazette, No. 153/2009, 90/2011, 56/2013, 120/2016, 127/2017, 66/2019 and 36/2024) - this Act determines the sources of funds for financing water management, in particular water fees, including the obligation to pay, the payer, the basis, the method of calculation, determining the amount, the purpose of spending these funds, enforcement, limitation and other issues related to the realization and use of these funds.
- **Water Services Act** (Official Gazette, No. 66/2019) - this Act regulates the institutional framework for the provision of water services, the price of water services, the legal position and sustainable operations of water service providers, the activities of the Water Services Council, and other issues related to the provision of water services.
- **Water Management Strategy of the Republic of Croatia** (Official Gazette, No. 91/2008) – a national document that sets long-term goals for sustainable water management.
- **Regulation on the amount of water contribution** (Official Gazette, No. 78/2010, 76/2011, 19/2012, 151/2013, 83/2015, 42/2019 and 73/2020).
- **Regulation on the calculation and collection of water contributions** (Official Gazette, No. 107/2014).
- **Regulation on the amount of the fee for water management** (Official Gazette, No. 82/2010, 108/2013).

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- **Regulations on the calculation and collection of fees for water management** (Official Gazette, No. 83/2010, 126/2013).
- **Regulation on the amount of water use fees** (Official Gazette, No. 82/2010, 83/2012, 10/2014, 32/2020, 140/2022, 158/2023, 33/2024).
- **Regulations on the calculation and collection of water use fees** (Official Gazette, No. 36/2020).
- **Regulation on the amount of the water protection fee** (Official Gazette, No. 82/2010, 83/2012, 151/2013, 116/2018, 33/2024).
- **Regulations on the calculation and payment of water protection fees** (Official Gazette, No. 48/19).
- **Regulation on the conditions for granting concessions for the economic use of water** (Official Gazette, No. 89/2010, 46/2012, 51/2013, 120/2014).

Integrated water management in Croatia in accordance with EU standards is ensured by the implementation of Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000.

Measures to protect water resources from the consequences of climate change are included in the **Climate Change Adaptation Strategy in the Republic of Croatia for the period until 2040** with a view to 2070, which was adopted by the Croatian Parliament at its session on April 7, 2020. The Strategy lists climate change adaptation measures for the area of water resources and the key stakeholders to which they apply.

Furthermore, sustainable use of water in industry is encouraged by granting incentives to companies that implement water recycling and consumption reduction technologies. For example, the Ministry of Tourism and Sports, through the program Competitiveness of the Tourism Economy - Green and Digital Transition of Entrepreneurs in Tourism, awards grants for the purchase of equipment and the implementation of solutions for water saving, recycling and reuse of wastewater, etc. (investment in washing systems, irrigation, etc.).

It can be concluded that Croatia has a well-developed regulatory framework, but the main challenge remains the effective implementation of laws and strategic plans. Also, the need to further strengthen institutional capacities, digitalize water management systems and ensure sustainable financing for the long-term protection of water resources is emphasized.

3.2. Agriculture and Biodiversity

Croatia is implementing a range of legal and policy measures to harmonize agriculture with the principles of green sustainability, with a particular focus on protecting biodiversity, reducing the negative impacts of intensive agriculture and adapting to climate change. **The Agriculture Strategy**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

until 2030 (Official Gazette, No. 26/2022) is a long-term national sectoral strategy that sets out the development vision, strategic goals and priorities of Croatian agriculture, and the activities for their achievement. The strategy supports the implementation of the **National Development Strategy of the Republic of Croatia until 2030** (Official Gazette, No. 13/21) and Strategic Objective 9. Food self-sufficiency and development of the bioeconomy within the framework of the "Green and Digital Transition" as one of the four development directions that will contribute to the achievement of the vision of Croatia until 2030.

In accordance with the EU Green Deal and **the Strategic Plan of the Common Agricultural Policy of the Republic of Croatia 2023-2027** (Official Gazette, No. 22/23), the transition to a smart, sustainable, competitive, resilient and diversified agricultural sector is supported, thereby ensuring long-term food security. These plans also contribute to climate action, the protection of natural resources and the preservation/enhancement of biodiversity, and the strengthening of the socio-economic structure of rural areas.

The Agriculture Act (Official Gazette, No. 118/2018, 42/2020, 127/2020, 52/2021, 152/2022, 152/2024), as the basic regulatory framework, defines the rules of sustainable production and rural development, in particular the prevention of food waste, food and feed donation, organic production, and prescribes a data network on the sustainability of agricultural holdings.

Organic agriculture plays a key role in preserving natural habitats and developing sustainable food production systems worldwide, and its impact on the environment and biodiversity is significantly lower than that of conventional agriculture. Therefore, by encouraging the development of organic agriculture, the Ministry of Agriculture, as the state administration body responsible for the preparation and implementation of the **National Action Plan for the Development of Organic Agriculture 2023-2030,** seeks to contribute to the preservation of the natural resources and biodiversity of the Republic of Croatia, as well as to reducing the impact of agricultural production processes on the environment. The National Action Plan for the Development of Organic Agriculture 2023 - 2030 represents the strategic backbone of the direction of development and further progress of organic agriculture and aquaculture. In addition to the development of primary ecological production, the National Action Plan for the Development of Organic Agriculture 2023 - 2030 laid the foundations for supporting the entire value chain in the ecological sector, from securing adequate ecologically acceptable raw materials to placing ecologically certified products on the market and selling them. The aim is to maintain the positive growth trend in the areas of organic production and organic products produced in Croatia, but also to strengthen other segments of the organic supply chain, which include the production and processing, promotion, sale and consumption of organic products in Croatia. Another important element is the promotion of greater awareness and information among stakeholders in the organic farming sector (especially buyers and organic producers), but also encouraging research and innovation and the strengthening of the capacity of bodies responsible for the management and control of organic production. As an act of strategic

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

planning, at the EU level it is aligned with the objectives of the Action Plan for the Development of Organic Production, the European Green Deal, the EU Biodiversity Strategy to 2030, and other relevant documents within the framework of the Common Agricultural Policy and the Common Fisheries Policy.

The National Action Plan for the Development of Organic Agriculture 2023 - 2030 defines measures to encourage the development of organic agriculture, such as support for the establishment and maintenance of pilot organic farms, demonstration centers and training programs, a national promotional campaign to raise the level of consumer awareness of organic agriculture and aquaculture products, support for new organic producers, support for the costs of control and certification of organic products when placing it on the market, support for producers of ecological seed and planting material, development of a bank of ecological autochthonous and traditional varieties of seed and planting material, support for investments of ecological producers and processors, etc.

Furthermore, the **Nature Protection Act** (Official Gazette, No. 80/2013, 15/2018, 14/2019, 127/2019, 155/2023) lays the foundations for regulating ecosystem conservation, protecting endangered species, and sustainable management of natural resources. Croatia is part of the Natura 2000 ecological network, which protects key habitats of wild species of interest to the European Union. **The Decree on the Ecological Network and the Competencies of Public Institutions for the Management of Ecological Network Areas** (Official Gazette, No. 80/2019, 119/2023) establishes the Natura 2000 ecological network of the Republic of Croatia, as well as the competences of public institutions that manage protected areas and ecological network areas to manage and adopt ecological network management plans. In addition, **the Strategy and Action Plan for the Protection of Biological and Landscape Diversity of the Republic of Croatia** (Official Gazette, No. 143/2008) is a fundamental document for nature protection, which sets out long-term goals and guidelines for the preservation of biological and landscape diversity and protected natural values, as well as methods of its implementation. This is followed by **the Strategy and Action Plan for the Protection of Nature of the Republic of Croatia for the period 2017-2025** (Official Gazette, No. 72/2017), which defines strategic goals that include specific goals and activities arising from them. The following strategic goals have been defined: to increase the efficiency of basic mechanisms for nature protection, to reduce direct pressures on nature and to encourage the sustainable use of natural resources, to strengthen the capacities of the nature protection system, to increase knowledge and availability of data on nature, and to raise the level of knowledge, understanding and public support for nature protection.

The Strategy for Adaptation to Climate Change in the Republic of Croatia for the period up to 2040 (Official Gazette, No. 46/20) defines key sectors relevant for adaptation due to their socio-economic importance for the Republic of Croatia and/or importance for nature and the environment; water resources, agriculture, forestry, fisheries, biodiversity, energy, and tourism and health. Sectors of

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

particular importance for the adaptation of biodiversity to climate change are also defined, namely: water management, agriculture, forestry and spatial planning, as well as key cross-sectoral measures for strengthening biodiversity resilience based on nature-based solutions, such as careful use of space, restoration, revitalization, measures related to traditional knowledge and agricultural practices, etc.

Special attention is paid to the preservation of genetic diversity through the National Plant Gene Bank and the preservation of autochthonous varieties through **the National Program for the Preservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture 2021-2027** (Official Gazette, No. 86/2021) and the Ordinance on the Preservation and Sustainable Use of Plant Genetic Resources (Official Gazette, No. 18/2024). The conservation of genetic resources for food and agriculture ensures the availability of biodiversity for farmers, breeders and researchers and its use by future generations.

In order to improve the adaptation of agricultural production systems to climate and environmental conditions and to contribute to stable agricultural production, special attention is paid to investments in irrigation systems. The Ministry of Agriculture invests in public irrigation systems and co-finances irrigation systems on farms in accordance with the **Regulation on the amendment of the Regulation on the implementation of measures of the Rural Development Programme of the Republic of Croatia for the period 2014-2020** (Official Gazette, No. 91/19, 37/20, 31/2021 and 134/2021, 10/2023). As part of the **Strategic Plan of the Common Agricultural Policy of the Republic of Croatia 2023-2027** (Official Gazette, No. 22/23), support is provided for new irrigation systems that contribute to the increase of agricultural land with irrigation possibilities. Support is provided for the construction of a system that enables the supply of water to the land of end users located in the area of the public irrigation system.

Overall, Croatia has developed a legal framework for agriculture and biodiversity protection that is in line with European and international standards. In order to ensure long-term sustainability, it is necessary to further strengthen the integrated management approach by which Croatia can effectively protect its rich biological diversity and ensure ecological resilience for future generations.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUSTAINABLE URBAN DEVELOPMENT AND SMART CITIES

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

4.1. Regulatory Framework for Smart Cities

The development of smart cities within the European Union (EU) is guided by a comprehensive regulatory framework that emphasizes sustainability, digital innovation, and citizen well-being. Croatia, as an EU member state, aligns its national strategies with these overarching EU directives while also addressing its unique urban challenges.

The European Union Regulatory Framework for Smart Cities is encapsulated in several key initiatives and policies:

1. **Smart Cities Marketplace**: This platform unites cities, industries, SMEs, investors, and researchers to foster the adoption of smart city solutions. It focuses on areas such as sustainable urban mobility, energy-efficient buildings, and integrated infrastructure.
2. **European Green Deal**: Aiming for climate neutrality by 2050, this policy promotes the integration of digital technologies to enhance energy efficiency, reduce emissions, and improve urban living standards.
3. **Digital Decade Policy Programme**: This initiative outlines the EU's vision for digital transformation by 2030, setting targets in areas like digital infrastructure, public services, and business digitalization.

   Croatia's alignment and national initiatives for developing smart cities include:

1. **Digital Croatia Strategy 2032 (Official Gazzete 2/23)**: Aligned with the EU's Digital Decade, this strategy focuses on enhancing digital skills, infrastructure, and public services to drive economic growth and improve quality of life.
2. **Zagreb Smart City Framework Strategy**: Established in 2019, this strategy aims to transform Zagreb into a smart city by 2030, emphasizing areas like digital infrastructure, sustainable urban mobility, and transparent governance.
3. **National Recovery and Resilience Plan (NPOO)**: This plan allocates significant funds for digital transformation projects, including smart city initiatives, to bolster economic resilience and sustainable development.

While both the EU and Croatia share common objectives in promoting smart cities, their approaches differ in scope and implementation. In its policy scope the EU provides a broad framework with overarching goals, whereas Croatia tailors these directives to its specific context, addressing national

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

and local challenges. Regarding implementation Croatia's strategies, such as the Digital Croatia Strategy and Zagreb's Smart City Framework, are concrete applications of EU policies, reflecting localized priorities and resource allocations. Croatia faces unique hurdles, including regional disparities in digital infrastructure and the need for increased digital literacy among its population. These challenges necessitate targeted interventions within the broader EU framework.

In summary, Croatia's regulatory framework for smart cities is a localized manifestation of EU policies, adapted to meet national and municipal needs while contributing to the EU's overarching goals of sustainability and digital innovation.

4.1.1. Integration of Green Infrastructure in Urban Development Laws

Croatia is increasingly recognizing the importance of green infrastructure as a key element of sustainable urban development, reducing climate risks and improving the quality of life in cities. Green infrastructure is a strategically planned network of natural and semi-natural areas that, together with other environmental elements, are designed and managed to provide a wide range of ecosystem services. It includes landscaped and green spaces (or blue spaces when they relate to aquatic ecosystems) and other physical elements in terrestrial (including coastal) and marine areas. One such example of green infrastructure is green corridors, which represent long green spaces in cities and river valleys that pass-through cities and can change the microclimate of the area and improve air flow in cities.

Green infrastructure is integrated into Croatian legislation primarily through the **Spatial Planning Act** (Official Gazette, No. 153/2013, 65/2017, 114/2018, 39/2019, 98/2019, 67/2023), which defines the principles of sustainable urban planning and prescribes the obligation to integrate green areas into spatial plans. Accordingly, a requirement is placed on the quality of built-up areas for the hospitality industry, tourism and for sports and recreational purposes in such a way that at least 40% of the area of a building plot is designed as parkland and natural green spaces. Also, the foundations for the development of green infrastructure are set in the **National Development Strategy of the Republic of Croatia until 2030 (**Official Gazette, No. 13/2021), which defines the development of green infrastructure in urban areas and the creation of green cities as a priority in the implementation of

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

sustainable environmental policy. The National strategy also defines strategic goals for reducing CO_2 emissions and improving air quality through increasing green urban areas.

Furthermore, the **Programme for the Development of Green Infrastructure in Urban Areas for the Period 2021-2030** (Official Gazette, No. 147/2021) aims to establish sustainable, resilient, safe and livable and well-maintained cities and municipalities in the Republic of Croatia. The Programme provides a framework for the implementation of the development of green infrastructure in urban areas of the Republic of Croatia, identifying measures and activities, the necessary frameworks and prerequisites for implementation, the expected effects of these measures and the envisaged sources of financing.

Local self-government units recognize the importance and need for the development of green infrastructure through the creation of a green urban renewal strategy, which as such represents a strategic basis of importance for the local self-government unit. In recent years, several local government units have developed studies and/or strategies on their own initiative, and it can be concluded that the need to consider green infrastructure is gradually being recognized at local level. Such initiatives are further supported by the development of a Manual for the Implementation of Green Urban Renewal Strategies by the Ministry of Physical Planning, Construction and State Property.

One example is the City of Zagreb, which adopted the Strategy for Green Urban Regeneration of the City of Zagreb in 2023. The strategy defines the strategic goals of green infrastructure development in the City of Zagreb, horizontal measures and activities that guide implementation, as well as an operational implementation plan. In addition, in 2024, the City of Zagreb adopted the Local Action Plan for the Implementation of Green Infrastructure and Nature-based Solutions, which proposes 17 measures for the implementation of nature-based solutions and green infrastructure.

4.1.2. Traffic Management Legislation

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

In the Republic of Croatia, traffic management is regulated by a series of laws, ordinances and other regulations that ensure the safety and efficiency of road traffic.

1. **The Road Traffic Safety Act** (OG 67/08, 48/10, 74/11, 80/13, 158/13, 92/14, 64/15, 108/17, 70/19, 42/20, 85/22, 114/22, 133/23, 145/24) is the basic legal act regulating road traffic safety in Croatia. It defines the basic principles of road user behavior, the conditions that roads and vehicles must meet, traffic rules and procedures in the event of traffic accidents. The law also prescribes the system of traffic signs and the powers of the competent authorities in traffic control.
2. **The Regulation on the conditions for the performance of traffic management tasks, the monitoring and removal of illegally stopped and parked vehicles** (OG 143/2008) sets out the conditions under which local self-government units may perform traffic management tasks, the monitoring and removal of illegally stopped and parked vehicles. It specifies the human, spatial and material requirements that local self-government units must meet, as well as the program and method for training the traffic wardens who perform these tasks.
3. **The Ordinance on Traffic Signs, Signaling and Road Equipment** (OG 59/2000) prescribes in detail the purpose, types, meaning, shape, colors, dimensions, characteristics and method of installation of traffic signs, signaling and road equipment. The aim is to ensure uniform and clear signaling that contributes to road safety and the smooth flow of traffic.
4. **The Regulation on Traffic Restrictions on Roads** (OG 64/2009) prescribes traffic restrictions for certain categories of vehicles on certain roads or road sections. The aim is to increase road safety, protect road infrastructure and reduce negative impacts on the environment. The restrictions may relate to vehicle weight, dimensions, speed or usage times of certain road sections.
5. **The Ordinance on the Procedures of Police Officers in the Performance of the Supervision and Administration of Road Traffic** (OG 141/2011) sets out the procedures that police officers must follow in the supervision and administration of road traffic. It covers the powers of police officers, the manner of stopping vehicles, the checking of documents, the procedure for dealing with infringements and measures to maintain safety and order in road traffic.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

6. **The Ordinance on the Registration and Equipment of Vehicles of the Ministry of the Interior** (OG 63/2007) regulates the registration procedures, the technical requirements and the equipment that vehicles belonging to or used by the Ministry of the Interior must have. This is intended to ensure that service vehicles meet all the necessary safety and technical standards for the effective performance of police duties.
7. **The Regulations on the training of Ministry of Interior officials as drivers of motor vehicles and the procedure for taking driving tests** (OG 48/2006) prescribes the program and method of training Ministry of Interior officials to drive motor vehicles and the procedure for taking driving tests. The aim is to ensure that civil servants have the necessary knowledge and skills to operate official vehicles safely and responsibly.
8. **The National Road Safety Programme of the Republic of Croatia** (OG 59/2011) is a strategic document that defines goals, measures and activities to improve road safety in Croatia. It includes an analysis of the current situation, the identification of key problems and the planning of specific measures to reduce the number of road accidents and their consequences.
9. **The Railway Act** (OG 32/19, 20/21, 114/22) regulates the organization, management and development of the railroad system in Croatia. It lays down the conditions for the operation of rail transport, the rights and obligations of railroad undertakings and safety standards. The Act also prescribes the licensing and certification procedures for railroad operators.
10. **The Act on the Safety and Interoperability of the Railway System** (OG 63/20) contains provisions to ensure the safety of rail traffic and the technical interoperability of the railroad system with European standards. It contains provisions on technical requirements for infrastructure and vehicles, the certification of personnel and safety monitoring.
11. **The Act on Contracts of Carriage by Rail** (OG 87/96, 114/22) regulates the contractual relations between carriers and users of rail transport services, including the carriage of passengers and goods. It defines the rights and obligations of the parties, liability for damages and complaint procedures.
12. **The Maritime Code** (OG 181/04, 76/07, 146/08, 61/11, 56/13, 26/15, 17/19) is the basic law regulating the legal status of maritime institutions, the rights and obligations of shipowners,

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

seafarers and other participants in maritime transport. It regulates issues relating to the safety of shipping, protection of the marine environment, ship registration and maritime accidents.

13. **The Act on Liner and Occasional Carriage in Coastal Shipping** (OG 19/22) regulates the conditions and manner in which the liner and occasional carriage of passengers and freight in coastal shipping is carried out. It lays down the procedures for the granting of concessions, the rights and obligations of carriers and the quality standards for services.
14. **The Air Traffic Act** (OG 69/09, 84/11, 54/13, 127/13, 92/14) regulates the conditions for the operation of air traffic, safety standards, the licensing of air carriers and personnel as well as air traffic control. It also covers issues relating to the protection of passenger rights and procedures in the event of air accidents.
15. **The Airports Act** (OG 78/2015) regulates the establishment, management and operation of airports in Croatia. It sets out the conditions for issuing operating licences, infrastructure and service standards as well as the obligations of airport operators towards users and the competent authorities.
16. **The Act on Combined Transport of Goods** (OG 120/16) promotes the use of combined transport involving several modes of transport (e.g. rail and road) in order to reduce the burden on road infrastructure and protect the environment. It prescribes the conditions for carrying out such transportation, including infrastructure, equipment and procedures.
17. **The Act on the Transportation of Dangerous Goods** (OG 79/07) regulates the conditions for the safe transportation of dangerous goods by road, rail and inland waterways. It defines the obligations of carriers, the packaging and labelling of dangerous goods, the training of personnel and the monitoring and control procedures.

4.1.3. Public Transport Investments and Legal Provisions Under Transportation Policy

Investments in public transport in Croatia are based on several key laws and strategic documents that regulate its development, financing, and modernization. **The** Road Transport Act (Official Gazette 41/18, 98/19, 30/21) governs the provision of public passenger transport services and promotes the development of integrated transport systems, while the **Railway Act** (Official Gazette 32/19, 20/21)

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

sets the conditions for the development of railway transport and infrastructure, including co-financing from EU funds.

The fundamental document on which other legislative sources are based is the **National Development Strategy of the Republic of Croatia until 2030** (Official Gazette 13/2021), which highlights sustainable development and the implementation of smart solutions in urban areas as key factors in achieving the set goals by 2030. Planned investments include the modernization of public transport, the improvement of multimodal terminals, and the development of Intelligent Transport Systems (ITS) to optimize traffic management.

Long-term policy priorities under the transportation policy framework include:

- Modernization of railway lines on the Croatian section of the core and comprehensive TEN-T network, along with the expansion and enhancement of suburban rail services.
- Promotion of freight transport by rail and other lower-emission transport modes to reduce greenhouse gas emissions.
- Encouragement of integrated urban transport to improve accessibility and sustainability.

Based on the National Development Strategy, the **Transport Development Strategy of the Republic of Croatia for 2017–2030** was also defined. The strategy emphasizes the need to develop intelligent transport systems (ITS) and encourage intermodality, which includes the integration of maritime transport with other modes of transport, thus contributing to the sustainability and development of smart cities. The key contributions related to smart cities and sustainability are:

1. Intelligent Transport Systems (ITS): The strategy emphasizes the need for developing ITS for managing traffic, public transport, and parking, particularly in urban areas. Investments in ITS will enable adaptive traffic flow management, reduce congestion, and improve multimodal transport efficiency.
2. Green Mobility and Intermodality: The transition to sustainable transport modes, such as public transport, cycling, and walking, is encouraged. The integration of various transport

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

modes, including railway and road transport, is planned through the development of intermodal terminals and "Park & Ride" and "Bike & Ride" systems.

3. Digitization and modernization of transport infrastructure: The plan includes the digitization of public transport operations, the introduction of unified fare collection systems and smart ticketing. These improvements will facilitate easier use of public transport, optimize timetables, and increase the energy efficiency of transport vehicles.

The **National Plan for the Management of Railway Infrastructure and Service Facilities and the Development of Railway Transport Services until 2030** foresees significant investments in the modernization of railway infrastructure and the improvement of transport services. The plan includes measures to enhance integrated urban transport and intermodal transport, aiming to increase the sustainability and competitiveness of railway transport. The modernization of the railway system is planned to improve economic and environmental sustainability, including digitization, automation of ticket sales, and the integration of railway and road transport. The procurement of environmentally friendly trains and the development of intermodal terminals will reduce emissions and increase the share of railway transport. Enhancing fare models and aligning timetables will boost public transport use and reduce urban congestion.

In the Republic of Croatia, maritime transport is primarily regulated by the **Maritime Domain and Seaports Act** (Official Gazette 83/2023), which defines the concept and legal status of maritime domain, the management of seaports and the conditions for the economic use of maritime domain. Although this Act does not contain explicit provisions on sustainability and smart cities, Article 8 emphasizes that maritime domain management must be comprehensive and, together with spatial planning, aim at sustainable development and preservation of maritime domain for future generations.

The goal of these regulations and investments is to increase the efficiency, sustainability, and accessibility of public transport in urban and regional areas.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

COLLABORATION OF UNIVESITIES WITH LOCAL ACTORS

5.1. Municipality Law (Cooperation with the municipality regarding NGOs)

In the Republic of Croatia, the legal framework for cooperation between local self-government units and non-governmental organizations (NGOs) is based on several important laws and regulations.

The Act on Local and Regional Self-Government (OG 33/01, 60/01, 129/05, 109/07, 125/08, 36/09, 150/11, 144/12, 19/13, 137/15, 123/17, 98/19, 144/20) regulates the organization, scope and methods of work of local and regional self-government units. According to this law, municipalities, cities and counties have the right and duty to cooperate with NGOs to promote the interests of the local community. Cooperation can be achieved through financial support, joint projects or other forms of partnership. The law also provides for the possibility of establishing consultative bodies that include representatives of NGOs in order to promote citizen participation in decision-making at local level.

The Associations Act (OG 74/14, 70/17, 98/19, 151/22) regulates the formation, legal status, operation, registration and dissolution of associations. It places particular emphasis on the transparency of the work of associations, including the obligation to publish financial reports and work programs. The Act also promotes cooperation between associations and local self-government units, particularly in areas of public interest such as culture, sport, social welfare and environmental protection. Local self-government units can provide financial and logistical support to associations operating in their area that contribute to the development of the local community through their work.

The Act on Financing Local and Regional Self-Government (OG 127/2017, 138/2020, 151/2022, 114/2023) regulates the sources of financing of local and regional self-government units, including revenues from taxes, fees and other sources. Part of the budget may be earmarked for financing programs and projects of associations operating in the interests of the local community. This enables systematic support for the non-governmental sector through transparent and clearly defined procedures for the allocation of funds.

While the **Public Procurement Act** (OG 120/16, 114/22) is primarily aimed at regulating the procedures for the procurement of goods, services and works by public entities, it also allows NGOs to participate in public procurement procedures. NGOs can bid for the provision of certain services or the implementation of projects of public interest, which further strengthens cooperation between local authorities and the non-governmental sector.

The Act on Volunteering (OG 58/07, 22/13, 84/21) defines the concept of volunteering, the rights and obligations of volunteers and the organizers of volunteering. Local self-government units, in cooperation with associations, can organize volunteer programs that contribute to the development of the local community. The Act encourages local authorities to create conditions for the development of volunteering and to recognize and appreciate the contributions of volunteers.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

The Act on Youth Councils (OG 41/14, 83/23) regulates the establishment, scope and functioning of youth councils in local and regional self-government units. Youth councils act as consultative bodies that enable young people to actively participate in decision-making processes and cooperate with local authorities. The Act prescribes the procedure for electing council members, their mandate, their rights and duties and the way in which their activities are financed. The aim is to encourage young people to actively participate in social processes and ensure that their interests are represented in local politics.

The Social Assistance Act (OG 18/22, 46/22, 119/22, 71/23, 156/23) defines social assistance activities, principles, benefits and services in the social assistance system as well as the procedures for their implementation. In the context of cooperation with non-governmental organizations, the Act recognizes associations as providers of social services and allows local self-government units to enter into contracts with associations for the provision of certain social services. This promotes partnership between the public sector and civil society in the provision of social services to citizens.

The Family Law (OG 103/15, 98/19, 47/20, 49/23, 156/23) regulates family relations, the rights and duties of family members and the procedures for protecting family values. Within the framework of cooperation with non-governmental organizations, the law allows associations dealing with the protection of families and children to participate in mediation, counseling and support for families in crisis situations. Local self-government units can cooperate with such associations by funding programs or joint projects for the protection of families.

The Foster Families Act (OG 115/18, 18/22) regulates the conditions and procedures for the provision of foster families as a form of care outside the family. Associations working for foster care can work with local authorities to organize training, support foster parents and promote foster care in the community. Local authorities can support the work of such associations through financial or logistical assistance.

In addition to the laws mentioned above, local governments often adopt their own strategies and resolutions that regulate cooperation with NGOs in more detail. These may include regulations on funding NGOs from the local budget, the establishment of civil society development councils or other forms of institutional support for the NGO sector.

5.2. Legislation on NGOs

The legal framework governing NGOs in Croatia is primarily defined by the **Law on Associations** (Official Gazzette 74/2014) and related legislation (Law on Amendments to the Law on Associations, Official Gazzete 151/2022). This law establishes the conditions for the formation, registration, and operation of NGOs, as well as their rights and obligations. According to this law, an association is any form of free and voluntary association of several natural or legal persons for the purpose of protecting their interests or advocating for the protection of human rights and freedoms, the protection of the

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

environment and nature, sustainable development, and for humanitarian, social, cultural, educational, scientific, sports, health, technical, informational, professional or other goals that are not contrary to the Constitution and the law, and without the intention of gaining profit or other economically assessable benefits.

NGOs are recognized as key players in fostering civic engagement, promoting social cohesion, and contributing to policy development, including through partnerships with universities. The activities of the association are based on the principle of independence. That is, each "association independently determines its area of activity, goals and activities, its internal structure and independently carries out activities that are not in conflict with the Constitution and the law."

NGOs in Croatia are often active in areas such as environmental protection, social services, education, and cultural heritage preservation. These focus areas provide fertile ground for collaboration with universities, particularly through joint research projects, community engagement programs, and advocacy initiatives. The legislation encourages NGOs to collaborate with public institutions, including universities, to achieve their goals. For instance, NGOs can apply for public funding through national or EU-supported programs to implement projects in partnership with academic institutions. The National Foundation for Civil Society Development plays a crucial role in providing financial support for such initiatives, often serving as a bridge between NGOs and universities. Despite the supportive legal framework, challenges persist in practice. NGOs often face financial instability and administrative burdens that limit their capacity to engage in long-term collaborations. Additionally, the regulatory environment is occasionally criticized for its complexity, which can deter smaller NGOs from participating in partnerships with universities.

5.3. Higher Education Law

In Croatia, universities are encouraged to engage with local communities and other stakeholders, including NGOs and municipalities, to contribute to regional development and social well-being. Higher education in Croatia is regulated by the **Law on Higher Education and Scientific Activity (Official Gazette 119/2022)**. This law governs the organization, funding, and operation of higher education institutions (HEIs), emphasizing the importance of their societal role. However, the social role of universities and the encouragement of cooperation with local communities are not explicitly mentioned in the law but are indirectly connected to:

- **Basic principles of higher education, scientific, and artistic activities (Article 2)** – This article highlights the openness of HEIs towards the public, citizens, and the local community, as well as their interaction with society as fundamental principles of higher education. It also

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

emphasizes the obligation to develop social responsibility among students and other members of the academic community.

- **Objectives of higher education (Article 3)** – This article underlines the social responsibility of HEIs, including their contribution to social, cultural, and economic development. Universities are required to act responsibly and engage with society. Members of the academic community are obliged to uphold ethical principles in scientific research and teaching while making research findings publicly accessible.
- **Autonomy of higher education institutions (Article 4)** – Universities are autonomous in their activities, and this autonomy explicitly includes responsibility towards society.

The **Smart Specialization Strategy of the Republic of Croatia until 2029 (S3)** is a strategic document that promotes sustainable economic development and entrepreneurship. It fosters collaboration between scientific institutions, industry, and local communities to ensure the application of knowledge and innovation in economic development. The **S3 strategy** identifies key sectors where higher education can contribute through cooperation with local stakeholders. The strategy defines three specific objectives:

- **Enhancing scientific excellence** – The research sector must generate cutting-edge and impactful knowledge that can create knowledge spillover effects on the economy while ensuring funding, young researchers, and modern infrastructure.
- **Bridging the gap between the research and business sectors** – Strengthening the interaction between the scientific and business sectors to encourage technology transfer and innovation.
- **Increasing innovation efficiency** – Strengthening the business sector's capacity for innovation and competitiveness through digitalization, the green transition, and new markets. To enhance the competencies of students and young researchers for smart specialization and industrial transition, the inclusion of higher education institutions in the innovation ecosystem is planned.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Ecology Awareness of Sustainable Green Development: Collaboration of Universities and Local Actors

2023-1-SK01-KA220-HED-000161639

COUNTRY-BASED LEGAL ANALYSIS

POLAND

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

GREEN ECONOMY

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

1.1. Environmental Taxes

In the system of Polish Environmental Protection Act, the basic public tributes of pro–environmental character are fees for the environment exploitation, increased fees, and product fees. **The system does not strictly provide for eco–taxes** but provides **for differentiation of tax rates** and other public tributes serving the purposes of environmental protection.

The possibility of using the indicated financial-legal instruments results primarily from the provisions of the Act of 27.04.2001. – ***Environmental Protection Act***, but not only. They are also provided for, among others, by the Act of 9.06.2011. – Geological and Mining Act (i.e., Journal of Laws of 2024, item 1290), the Act of 3.02.1995 on the protection of agricultural and forest land (i.e., Journal of Laws of 2024, item 82), the Act of 16.04.2004 on the protection of nature, the provisions of laws imposing obligations on waste handling, the Act of 7.06.2001. on collective water supply and collective sewage disposal (Journal of Laws of 2024, item 757), as well as acts related to the protection of the ozone layer and establishing rules for handling chemical substances, or the Act of 22.06.2001 on microorganisms and genetically modified organisms (Journal of Laws of 2022, item 546).

The **environmental fee** system established by the Environmental Protection Act provides for incurring such a fee for:

1) Introduction of **gases or dust into the air**,
2) Introduction of **wastewater into water or land**,
3) **water intake**,
4) **waste disposal**.

As a rule, entities exploiting the environment in the above way are obliged to pay environmental fees.

An entity exploiting the environment is, according to Article 3(20) of the Environmental Protection Act:

a) Entrepreneur within the meaning of the provisions of the Act of 6.03.2018. – Entrepreneurs' Act (i.e., Journal of Laws of 2024, item 236, as amended) and foreign

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

entrepreneur within the meaning of the provisions of the Act of 6.03.2018 on the principles of participation of foreign entrepreneurs and other foreign persons in economic turnover on the territory of the Republic of Poland (i.e., Journal of Laws of 2025, item 89), as well as persons engaged in productive activity in agriculture in the field of agricultural crops, animal husbandry or breeding, horticulture, vegetable farming, forestry and inland fishing;

b) Organizational unit that is not an entrepreneur within the meaning of the Entrepreneurs' Act.

c) Natural person who is exploiting the environment to the extent that such use requires a permit; such persons shall be charged a fee if they use the environment based on a permit for the introduction of substances or energy into the environment and a water permit for water abstraction within the meaning of the Water Law Act.

The Environmental Protection Act provides for differentiation of fees based on several considerations. Fees incurred for air protection depend on the amount and type of gases or dust introduced into the air, and in turn, the fee for waste storage depends on the amount and type of waste stored. However, if the landfilled or stored waste is mixed, the type of waste for which the unit fee rate is highest should be taken as the basis for the fee.

The upper rates of individual fees are set directly in the Environmental Protection Act. Applicable rates are set by decree by the Council of Ministers. The rates established by the regulation are subject to valorisation as of January 1 of each calendar year. The minister in charge of environmental affairs is required, no later than October 31 of each year, to announce by way of a notice in the Official Journal of the Republic of Poland "Monitor Polski" the amount of fee rates for the next year, considering changes in the rates to date and the principle of valorisation of these rates.

The Environmental Protection Act provides for a system of self-calculation for all fees – the entity exploiting the environment should determine on its own the amount of the fee due and pay it to the account of the appropriate marshal's office (regional authority), on an annual basis, by March 31 of the following year. Supervision over the implementation of the obligation to pay fees is exercised by

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

the marshal of voivodship. Accordingly, the entity charged with the obligation should, concurrently with the payment of the fee, provide the marshal with the relevant information resulting from the records kept. If the obligated entity fails to pay the fee or pays the fee in an objectionable amount, the marshal of the voivodship (the highest level of self-government in Poland, equivalent to NUTS2) should impose the fee due by decision, based on its own findings or inspections and the results of the inspection of the provincial environmental protection inspector.

Fees are treated similarly to taxes. The provisions of Section III of the Act of 29.08.1997 apply to them. – Tax Ordinance (i.e., Journal of Laws 2025, item 111, as amended), with the powers of the enforcement authority vested in the voivodship marshal. No fees shall be paid for those types of use of the environment, the annual amount of which paid to the account of the marshal's office does not exceed PLN 800. The provincial parliament may, by a local law act, adopt an increase in this amount, but not more than 50%.

Fees for the use of the environment are also provided for, among other things, by the ***Act on Nature Protection***. This act distinguishes two types of fees related to the use of the environment:

1) For **entry to certain protected areas**,
2) From the **removal of trees and shrubs** from the property.

The amount of fees for admission to the national park or some of its areas and for providing access to the national park or some of its areas is determined by the director of the national park, but the amount of the fee for a single admission to the park cannot exceed the amount of PLN 6 (this amount is subject to valorisation). The fees are revenue of the national park. By order of the regional director of environmental protection, on the other hand, fees for admission to a nature reserve may be introduced. The permissible amount of fees was determined by the act in the same way as for the national park. The fees are earmarked for nature conservation. However, the act does not specify whose revenue the funds derived from the fees are.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Fees for the removal of trees or shrubs are paid by the property owner. They are charged and collected by the authority competent to issue the permit. The amount of fees payable should be established in the permit issued.

The tree removal fee is determined by multiplying the number of centimetres of the circumference of the tree trunk measured at a height of 130 cm and the fee rate. If the tree at the height of 130 cm has several trunks – the perimeter of the tree trunk shall be the sum of the perimeter of the trunk with the largest perimeter and half of the perimeters of the other trunks, and if it does not have a trunk at this height – the perimeter of the tree trunk shall be the perimeter of the trunk measured immediately below the crown of the tree. The amount of the rates should be determined by an ordinance of the minister responsible for the environment. Their maximum amount is indicated in the Act on Nature Protection.

The shrub removal fee is determined by multiplying the number of square meters of land area covered by the shrubs to be removed and the fee rate. All rates are subject to adjustment as of January 1 of each year.

The obligation to incur fees is not absolute. The Act on Nature Protection provides that in certain situations fees are not charged. For example, no fees are charged for the removal of trees or shrubs, the removal of which does not require a permit; if the removal is related to the restoration and care of trees growing on property listed in the register of monuments; which threaten the safety of people or property in existing buildings or the safety of road and rail traffic or the safety of navigation; in connection with the reconstruction of public roads and railroads; which have died or do not have a chance of survival, for reasons beyond the control of the property owner

According to ***the Environmental Protection Act,*** an entity exploiting the environment shall pay **increased fees** in the case of:

- lack of the required permit for the introduction of gases or dust into the air,
- specific ways of improper waste handling.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

In the former case, the fee applies to the entire volume of substances emitted and is 500% of the base fee rate. However, about the handling of waste, the fees vary depending on the manner of such handling.

Increased fees are of a sanctioning nature, but they remain fees, so the principles of incurring fees indicated above apply to them. These are the obligation to calculate the fee due and pay it without a summons within the prescribed period (the principle of self-assessment) and the supervision of the provincial marshal over the performance of this obligation. Payment of the fee does not exempt from other sanctions provided for failure to comply with the obligation to obtain the required administrative decision, such as criminal liability.

The Geological and Mining Law, on the other hand, provides for **increased fees** if a mineral is extracted without the required license or without an approved geological works project. Activities carried out in gross violation of the conditions set forth in a license or an approved geological works project or subject to a notification are, in turn, subject to an additional fee. The fees provided for in the Geological and Mining Law are imposed by decision, so the principle of self–assessment does not apply to them. They have the character of administrative fines.

The Act of 11.05.2001 ***on the obligations of entrepreneurs in the field of management of certain wastes and on the product fee*** (i.e. Journal of Laws of 2024, item 433) imposes an obligation on designated entities to achieve certain levels of recovery. **Failure to meet the recovery obligation** results in a kind of financial sanction in the form of having to pay **a product fee**. However, the legal nature of this fee is debatable. Many experts do not recognize its sanctioning nature, based on the assumption adopted by the regulations that the obliged entity does not have to fulfil the obligation to achieve recovery levels, it may fulfil this obligation by paying a product fee, which is a public tribute. Such fee is determined by multiplying the unit rate by the mass or quantity of waste lacking to achieve the required level of recovery. The principle of self-assessment applies – the obliged entity itself should determine the amount and pay the fee due, while supervision of the implementation of the obligation is exercised by the provincial marshal. Funds from product fees flow into the account of the National Fund for Environmental Protection and Water Management. The Act on the obligations

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

of entrepreneurs in the management of certain packages and on the product fee and deposit fee provides for an extensive system of redistribution of these funds.

The obligation to incur a product fee is also provided for by the provisions of the Act of 11.09.2015 ***on waste electrical and electronic equipment*** (i.e. Journal of Laws of 2024, item 573). The fee is designed here as a **sanction for failure to achieve the minimum** required annual level of collection of waste equipment, the level of recovery or the level of preparation for reuse and recycling of waste equipment (Article 72 of the cited Act). The obligation to bear it is borne by so-called "equipment introducers". The product fee is calculated at the end of the calendar year and paid without notice to a separate bank account of the appropriate marshal's office by March 15 of the year following the calendar year to which the fee applies. The marshal of the voivodship shall supervise the implementation of the fee obligation. Proceeds from the product fee shall be transferred by the provincial marshal, within 30 days after the end of each quarter, to the bank account of the National Fund for Environmental Protection and Water Management, however, 10% of the proceeds shall constitute income to the provincial government's budget for the costs of enforcement of product fee receivables and administrative support of the fee system (Article 75).

Similar in nature to the product fee is the fee provided for by the provisions of the Act of 20.01.2005 ***on recycling of end–of–life vehicles*** (Journal of Laws of 2020, item 2056, as amended), which is borne by the so–called introducers of vehicles for failure to fulfil the obligation to organize and provide access to a vehicle collection network covering the national territory. The amount of the fee for the lack of a network is calculated according to the formulas set forth in the appendix to this act.

According to the Environmental Protection Act, the rates of taxes and other public tributes should be differentiated, considering the objectives to protect the environment. **Excise tax** rates should be calculated to ensure a lower market price:

1) Unleaded gasoline relative to lead containing gasoline.
2) Diesel and heating oils with lower sulphur content relative to oils with higher sulphur content.
3) Diesel and lubricating oils produced with components obtained from the regeneration of used oils, compared to oils produced without these components.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

4) Biofuels based on the use of biomass, particularly crops, relative to fuels from non-renewable sources.

The provision has the character of a general guideline, is directed to state bodies making decisions on the indicated issues and does not contain in its content a delegation to issue specific regulations.

One of **the few examples of** the implementation of this guideline is the Act of 13.09.1996 on ***Maintaining Cleanliness and Order in Municipalities*** (i.e., Journal of Laws of 2024, item 399, as amended), Article 6(4) of which stipulates that the municipal council, when determining the rates of fees for **municipal** waste management, applies **higher rates if municipal waste is not collected and received in a selective manner**.

1.2. Other Regulations

Unfair practices and omissions that mislead consumers, including *greenwashing*, are regulated by ***the Unfair Trade Practices Directive***. It contains a so-called "blacklist" of commercial practices, which are considered unfair in all circumstances, without the need to evaluate a specific case of violation. In contrast, actions identified in the "grey-list" of commercial practices are those that are to be considered misleading if, in a specific case, they cause or are likely to cause the average consumer to decide on a particular transaction that the consumer would not have entered if the prohibited action had not occurred. Directive 2024/825 amending the Unfair Commercial Practices Directive expanded the so-called "blacklist" of commercial practices to include, among other things, the formulation of a general environmental claim for which the trader is unable to demonstrate high environmental performance based on reliable sources. In turn, the catalogue of "grey" commercial practices was expanded to include, among other things, the formulation of environmental claims related to future environmental performance (through such claims, traders create the impression that consumers, by purchasing their products, contribute to a low-carbon economy – a practice that is subject to detailed assessment each time on the basis of clear, objective, publicly available and verifiable commitments).

Published *on* March 6, 2024, the so-called ***Greenwashing*** Directive amends Directive 2005/29/EC concerning unfair business-to-consumer commercial practices in the internal market and Directive

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

2011/83/EU on consumer rights. The aim of the directive is to protect consumers by prohibiting misleading commercial practices that relate to greenwashing in its broadest sense, and to ensure that they are better informed. Member states are required to apply the provisions of the directive starting March 27, 2026, which sets the time for the introduction of relevant national legislation implementing the directive.

Polish law lacks dedicated regulations that deal comprehensively with combating greenwashing. For this reason, formulating a general environmental claim for which the entrepreneur is unable to demonstrate high environmental performance based on reliable sources as misleading labelling of goods" or "disseminating false or misleading information about the goods produced or services provided in order to gain advantage, or advertising that misleads the customer and may thereby influence his decision to purchase goods or services", will constitute an act of unfair competition sanctioned by the provisions of the Act of May 16, 1993. on Combating Unfair Competition (i.e., Journal of Laws 2022, item 1233). False or misleading environmental statements may also constitute a manifestation of an unfair practice, as a misleading action, if they in any way cause or are likely to cause the average consumer to make a decision regarding a contract that he or she would not otherwise have made, and will then be subject to the regulations of the Act of August 23, 2007 on counteracting unfair market practices (i.e., Journal of Laws of 2023, item 845). For such prohibited activities, the entrepreneur is threatened by the sanction provided for in the Act of February 16, 2007, on competition and consumer protection (i.e., Journal of Laws of 2024, item 1616) in the form of a fine of up to 10% of the turnover achieved in the fiscal year preceding the year in which the fine is imposed.

Another opportunity to sanction pseudo-organic marketing is provided by the Act of June 23, 2022 ***on organic farming and production*** (i.e., Journal of Laws of 2023, item 1235), whose provisions stipulate that the possibility of imposing a fine of up to 200 percent of the of the financial benefit (obtained or obtainable for the agent, product or substance placed on the market) against an entity that places on the market products or substances used in plant protection products or as fertilizers, soil conditioners and nutrients, not authorized for adaptation in organic production, as labelled in a manner suggesting that the products or substances in question are authorized for use in organic

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

production, including by labelling with the term “organic” or a derivative of this term, or with the term “eco” or “bio.”

1.3. Incentives

The National Fund for Environmental Protection and Water Management (pl. NFOŚiGW), which was established in 1989 at the time of Poland’s political changes, is the main organization in the Polish system of financing environmental protection and water management, with the greatest financial potential. The National Fund offers loans, grants and other forms of financing for projects implemented by, among others, local governments, businesses, public entities, social organizations and individuals. In the public finance sector, the National Fund is also Poland’s largest partner of international financial institutions in handling foreign funds for environmental protection.

The National Fund for Environmental Protection and Water Management is a state legal entity that finances environmental protection and water management within the scope specified in the Act of April 27, 2001. Environmental Protection Act i.e. Dz. U. of 2024, item 54 as amended).

Entities applying for funding submit applications for funding to the National Fund, which are subject to detailed evaluation. Funding is awarded to projects that meet the criteria specified in the individual priority programs.

The priority programs detail, among other things, the deadlines and method of application, the form, intensity and conditions of funding, as well as the beneficiaries and type of projects, eligible costs and the procedure for selecting projects.

Funding for projects is provided by granting:

- Interest-bearing loans,
- grants, including:
  - Interest rate subsidies for bank loans,
  - Making partial repayments of the principal of bank loans,
  - Surcharge on the interest rate or redemption price of bonds,

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- Subsidies for the dismantling of end–of–life vehicles.

The decision on subsidies is made by the Board of Directors of the National Fund, and in cases specified in the Environmental Protection Act, by the Supervisory Board of the National Fund.

In addition to the National Fund for Environmental Protection and Water Management, there are **16 voivodship funds** (pl. WFOŚiGW) in Poland, which are linked to the NFOŚiGW by close cooperation, a similar name and a common direction of activities. However, it should be remembered that these entities, although they jointly create the system of financing environmental protection in Poland and often cooperate with each other, are nevertheless independent, with separate budgets, their own action plans and other superiors. Provincial funds for environmental protection and water management are self–governing legal entities established by the Act of April 27, 2001, Environmental Protection Law.

Supervision over the activities of the NFOŚiGW and WFOŚiGW is exercised by the minister responsible for climate issues, regarding the voivodship funds, the activities of the supervisory body are also performed to a certain extent by the provincial governors.

Voivodship Funds for Environmental Protection and Water Management, as regional institutions of public finance, have for 30 years been a strategic partner of local governments and other entities, including individual beneficiaries implementing tasks in the field of environmental protection in individual voivodships, as units of administrative division of the state. The Funds' activities are aimed at financially supporting projects aimed at protecting the environment and respecting its values, based on the constitutional principle of sustainable development while maintaining the ecological security of the country and implementing ecological programs region. Voivodship Funds for Environmental Protection and Water Management guarantee financial stability and support in the implementation of environmental protection projects, which are often capital-intensive and long-term in nature.

WFOŚiGW's activities mainly focus on supporting projects in the field:

– water conservation and management,

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- air protection,
- waste management and land surface protection,
- nature conservation and landscape protection,
- environmental education
- scientific research and expertise/environmental monitoring,
- prevention and elimination of extraordinary environmental hazards.

1.4. Green Public Procurements

Green public procurement is public procurement taking into account environmental aspects. The "greenness" of public procurement can refer to its various aspects: the subject of delivery or the way services are performed. In the Act of September 11, 2019. – ***Public Procurement Law*** (i.e., Journal of Laws 2024, item 1320), there is no legally binding definition of green public procurement. The act does not explicitly mention green public procurement. Instead, it mentions environmental requirements related to the execution of the procurement or environmental aspects of the procurement. The Public Procurement Law, among the general principles of procurement rules, indicates that contracts shall be awarded in a manner that ensures:

- the best quality justified by the nature of the contract, within the funds that the contracting authority may allocate for its implementation,
- achieve the best results of the procurement, including, among other things, environmental effects, if possible, in each tender, in relation to the expenditures incurred.

Beyond this general indication, the Public Procurement Law **does not make green procurement mandatory**. Instead, it provides for several opportunities to take environmental aspects into account during the procurement procedure. Environmental aspects can be considered in each procedure in the following elements:

- description of the subject of the contract,
- bid evaluation criteria,
- rationale for excluding contractors,
- conditions for participation in the proceedings,

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

– requirements related to the execution of the contract.

Provisions requiring green measures by, for example, public administration bodies are also found in other laws. They may, in practice, result in the need for green public procurement in certain sectors. Such a situation may apply, for example, to the procurement of energy-using products, the purchase of electricity or means of transportation. Key legal acts in this regard include the provisions of the Act of February 20, 2015, on ***Renewable Energy Sources*** (i.e., Journal of Laws of 2024, item 1361), the Act of May 20, 2016, on ***Energy Efficiency*** (i.e., Journal of Laws of 2024, item. 1047), the Act of January 11, 2018, on ***electromobility and alternative fuels*** (i.e., Journal of Laws of 2024, item 1289), the Act of November 21, 2008, ***on support for thermomodernization and renovation*** (i.e., Journal of Laws of 2024, item 1446, as amended).

A contracting authority may also opt for green procurement in industries where green procurement is not mandatory. Moreover, many programmatic documents, such as the National Ecological Policy 2030, encourage such actions (Resolution No. 67 of the Council of Ministers of July 16, 2019, on the adoption of the "National Ecological Policy 2030 – development strategy in the area of environment and water management" ("Monitor Polski" of 2019, item 794). In it, green public procurement was identified as one of the priorities that will contribute to achieving environmental goals. Above all, however, attention was paid to the need to encourage procurers to take environmental criteria into account and promote this solution. In addition, important provisions in this regard are contained in the ***State Purchasing Policy***. This document defines Poland's priority activities in public procurement, as well as the desired direction of procuring entities in awarded contracts. The Purchasing Policy is developed once every four years and is adopted by a resolution of the Council of Ministers. The current State Purchasing Policy was adopted on January 11, 2022 (Resolution No. 6 of the Council of Ministers of January 11, 2022, on the adoption of the State Purchasing Policy – "Monitor Polski" of 2022, item 125). Heads of government entities are obliged to implement the recommendations and obligations arising from this policy. However, as pointed out in this document, the State Purchasing Policy can be a useful and important source of knowledge and a basis for developing optimal purchasing practices also for procurers outside the government administration. Accordingly, **local self-government bodies are not explicitly required to comply with the State Purchasing Policy**, but it can support them during procurement. The document indicates that one of Poland's priorities for

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

action is sustainable public procurement, which is one of the main instruments for implementing the concept of sustainable development. Sustainable public procurements are those that consider environmental or social aspects, while ensuring that public funds are spent purposefully, rationally and economically (p. 27 of the State Purchase Policy). Within sustainable public procurement, social procurement and green procurement are distinguished. Thus, green procurement has been recognized *de facto* as one of the priorities of the State Purchasing Policy. This means that the determination by a contracting authority obligated to apply the State Purchasing Policy that it is possible to apply certain environmental aspects in a specific proceeding, without simultaneously compromising its interests and the level and quality of satisfaction of its purchasing needs, should result in the consideration of said aspects.

In summary, many national documents primarily emphasize the need for green procurement wherever possible. In most cases, however, this is not a formal obligation, but rather an opportunity and incentive arising from the growing understanding of the need for green measures. As a rough guide, it can be estimated that in 2023, environmental aspects were included in only a few percent (about 3%) of public procurements, and their value amounted to 4% of the total value of public procurements (link). These figures, in turn, show that green public procurement is still, in fact, extremely rare in Poland, and there is a lot of room to increase it.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUSTAINABLE GREEN FINANCING AND SOCIAL RESPONSIBILITY

2.1. EU Taxonomy for Sustainable Activities

In Poland, as in other EU countries, the provisions of EU regulations on the EU Taxonomy (Regulation (EU) 2020/852 of the European Parliament and of the Council on the establishment of a framework to facilitate sustainable investment (EU Taxonomy) adopted on June 8, 2020, with additions arising from delegated regulations) are directly applicable, as a system to classify economic activities as environmentally sustainable.

The EU taxonomy sets an absolute obligation to disclose information on the compliance of a business or investment with the criteria set forth in the regulation for:

- Non-financial companies covered by the Accounting Directive,
- financial companies covered by the Accounting Directive.

The requirements apply to all companies within the scope of the Corporate Sustainability Reporting Directive (CSRD), and previously the Non-Financial Disclosure Directive (NFRD).

The Polish Ministry of Development and Technology has prepared a dedicated tab, where useful informational and educational materials prepared by experts of the Working Group on the Application of the EU Taxonomy are posted.

The consulting firm EY, which also operates with a branch in Poland, has published the EU Taxonomy Barometer 2023, prepared for the second time, which shows that the Taxonomy is a challenge for companies trying to implement EU regulations, also from the perspective of the Polish market, but the vast majority of non-financial companies surveyed have published information on the subject in their annual report or a separate report.

Poland is among the countries with the lowest percentage of turnover qualifying for the Taxonomy. Polish companies reported only 10% of such activities. The main reason for this low percentage was companies in the consumer products and mining sectors. More than a third of the companies analysed by EY reported no qualifying turnover, indicating that they have activities that do not

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

contribute in any way to climate change mitigation (CCM) or adaptation objectives (CCA). CCM and CCA are the two main strategies for managing climate change risks.

With 29% of eligible expenditures, Poland ranked near the bottom of the countries surveyed by EY, and fourth from last in Taxonomy-adjusted expenditures, at just 10%. In the case of OpEx, the low eligibility of Polish companies' activities in the WIG30 analysed by EY is mainly due to the limited contribution to climate goals of companies belonging to the consumer products and mining industries.

Difficulties in reporting in accordance with the Taxonomy arise not only from the mere need to show the proportion of activities aligned with the Taxonomy, but primarily from problems in interpreting some of the criteria and collecting the technical and detailed information needed to assess alignment. This is why the EU published answers to frequently asked questions last December. Nonetheless, difficulties in interpreting some aspects of the Taxonomy regulation are still evident, not only in Poland. The introduction of the need to report according to the Taxonomy has shown that some companies in Europe, not only in Poland, are not prepared to disclose the required information. The direct linking of financial and ESG data is new for companies and makes it difficult not only to calculate indicators, but also to collect data and establish responsibility for these disclosures.

2.2. Sustainability Reporting

On December 17, 2024, the Act of December 6, 2024***,*** amending the ***Act on Accounting***, the Act on ***Statutory Auditors***, ***Audit Firms and Public Supervision*** and certain other laws was published in the Journal of Laws of 2024, item 1863. The law implements the CSRD – Corporate Sustainability Reporting Directive.

The new regulations make it mandatory for a certain group of companies to produce ESG reporting and have it attested by auditors.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

The ESG reporting obligation will enter gradually. The first group to be covered by the obligation in 2025 are the largest entities that already have experience in this area. They are expected to lead the way and set good practices in ESG reporting in Poland.

The new regulations will result in a larger group of companies reporting relevant, comparable and reliable sustainability information that will be more useful to investors and other stakeholders. This is essential to changing the flow of capital toward financing sustainable growth companies.

The most important changes in ESG reporting are:

- Standardized reporting standards – moving away from the previous discretion in the choice of ESG reporting standards to the European Sustainability Reporting Standards (ESRS),
- Broader ESG information – the requirement to provide detailed information on environmental, social and corporate governance sustainability issues – as required by the ESRS,
- Place of reporting – ESG information will be presented mandatorily in a separate section of the entity's management report,
- Digitization – reports on the activities of ESG reporting units will be compulsorily produced in an electronic format that enables data analysis,
- Verification of ESG reporting – obligation to undergo attestation by auditors.

The largest public-interest entities (e.g., banks, insurers) and the largest capital groups must report already for 2024, while other large entities will have to report for 2025. SME-issuers from the regulated market (except microenterprises) will start reporting for 2026, with an option to postpone until 2028. Polish subsidiaries of non-EEA companies will be reporting for 2028.

2.3. Guidelines in Sustainable Finance

Apart from the regulations described in section 2.2, the issues in this area are not yet more broadly regulated by law in Poland.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

GREEN ENVIRONMENT AND AGRIFOOD

3.1. Water Management

The basic legal act regulating the management of water resources in Poland is the Act of July 20, 2017, ***Water Law Act*** (i.e., Journal of Laws 2024, item 1087, as amended). This Law introduces rules for water management, which aim to ensure sustainable development and protection of water resources. Among other things, the Water Law Act establishes rules for water use, flood and drought protection, as well as rules for financing water management.

The European Union's Water Framework Directive (2000/60/EC) requiring the achievement of good status of surface and groundwater is being implemented in Poland primarily in the form of revising and updating river basin management plans. Poland is developing river basin management plans and programs of measures to improve water quality. River basin district management plans are one of the basic planning documents, adopted by means of regulations. They form the basis for decision-making that shapes the state of water resources and the principles of their management in a six-year perspective. The use of water must not cause deterioration of the state of water and the ecosystems dependent on it, except in cases specified in the Water Law Act it must not violate the findings of the river basin management plan. In accordance with the findings of the plans, water permits, and other administrative decisions are issued under the Water Law Act. Water management plans for river basin areas are reviewed and updated every six years. Among other things, the set of measures included in them to achieve or maintain environmental objectives – that is, the good condition of surface and groundwater – is verified. Draft water management plans for river basin districts are prepared by **the State Water Company "Wody Polskie"**.

The minister in charge of water management monitors the implementation of the measures contained in the river basin management plans. Polish waters and voivodes, marshals of voivodships, mayors or presidents of cities and directors of maritime offices, within the scope of their jurisdiction, prepare annual reports on the implementation of measures contained in these documents, for the previous year, and submit these reports to the minister responsible for water management by February 28 of the following year. The Regulation of the Minister of Maritime Affairs and Inland

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Navigation of December 14, 2018, on the scope of information on the implementation of measures included in river basin management plans, flood risk management plans and the marine water protection program (Journal of Laws, item 2390) regulates the information that should be included in these reports.

In addition to the Water Law Act, the management of water resources in Poland is regulated by a few other legal acts, such as the Act of April 27, 2001, Environmental Protection Act (i.e., Journal of Laws of 2024, item 54, as amended), the Act of March 27, 2003, on Spatial Planning and Development (i.e., Journal of Laws of 2024, item 1130, as amended), or the Act of April 16, 2004 on Nature Protection (i.e., Journal of Laws of 2024, item 1478, as amended). All these laws are aimed at ensuring comprehensive protection of water resources and their rational use.

In Poland, several institutions are responsible for managing water resources, and they work together to ensure effective water conservation and management. The main institution responsible for water resources management is the aforementioned State Water Management Authority “Wody Polskie”, established under the Water Law Act. “Wody Polskie: are responsible for the implementation of the state’s water policy, including the development of water management plans, the supervision of water levels and the implementation of water investments.

“Wody Polskie” cooperate with other institutions, such as the Ministry of Infrastructure, which is responsible for shaping the country’s water policy, and the Ministry of Climate and Environment, which deals with environmental protection, including water resources protection. An important role in water resources management is also played by local governments, which are responsible for carrying out water management tasks at the local level.

The Polish Water Authority includes regional water management boards, which are responsible for managing water resources in river basin areas. Regional water management boards develop water management plans, monitor water levels, and implement investments to improve water quality and protect against floods and drought.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

The management of water resources in Poland involves several challenges and problems that arise from both natural conditions and human activities. One of the main challenges is the changing climate, which affects the availability of water resources and the frequency and intensity of extreme events such as floods and droughts. Therefore, it is necessary to develop and implement effective adaptation strategies in Poland to minimize the negative effects of climate change. Another major problem is water pollution, which results from industrial, agricultural and municipal activities. These pollutants have a negative impact on water quality and aquatic ecosystems. To improve water quality, it is necessary to improve effective measures to reduce pollutant emissions and improve Poland's existing water and sewage infrastructure.

An important challenge is also to ensure sustainable management of water resources that considers the needs of different water users, such as agriculture, industry, energy, and tourism. In this context, it is important to develop and implement water management plans that consider both economic needs and environmental protection. Finally, water resources management requires effective cooperation between various institutions and public involvement. To this end, it is necessary to carry out educational and informational activities on a larger scale to raise public awareness of the importance of water conservation and to promote good water management practices

3.2. Agriculture and Diversity

In Poland, the provisions of the directives on biodiversity protection fully implement the provisions of the Act of April 16, 2004, on ***Nature Protection*** (i.e., Journal of Laws of 2024, item 1478, as amended) and the implementing regulations issued to it. In addition, the most important Polish legal acts on biodiversity are the Act of September 28, 1991, ***on Forests*** (i.e., Journal of Laws of 2024, item 530, as amended), the Act of July 20, 2017, ***Water Law Act*** (i.e., Journal of Laws of 2024, item 1087 as amended), Act of August 11, 2021 ***on alien species*** (i.e., Journal of Laws of 2023, item 1589). Improving the state of biodiversity was indicated as one of the primary objectives of the "***Environmental Policy State 2030 – development strategy in the area of environment and water management***" – adopted by Resolution No. 67 of the Council of Ministers of 16.07.2019. („Monitor

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Polski" of 2019, item 794). In turn, under Resolution No. 123 of 15.10.2019. The Council of Ministers adopted the "***Strategy for Sustainable Development of Rural Areas, Agriculture and Fisheries 2030***" („Monitor Polski" of 2019, item 1150), which assumes proper spatial planning in rural areas and rational land management that preserves unique forms of agricultural landscape and serves to protect biodiversity.

Biodiversity protection is inextricably linked to the concept of nature conservation and implemented through diverse legal instruments. **Two protection regimes** exist in Polish legislation. The first, traditionally referred to as "nature conservation law," are regulations related to the protection of natural resources in conservationist, ideal terms. The second, referred to as utilitarian protection, on the other hand, are regulations relating to the economic use of natural resources in agricultural, forestry, hunting and fishing, but also aimed at preserving biodiversity through rational use.

Taking care of rural biodiversity, water quality and availability, soil functionality and climate stability in farming is the subject of a number of legal regulations, including the Act of June 23, 2022 on ***organic farming and production*** (Journal of Laws of 2022, item 1370, as amended), the Act of 3.02.1995 on the ***protection of agricultural and forest land*** (Journal of Laws 2024, item 82), the Act of 10.07.2007 on ***fertilizers and fertilization*** (Journal of Laws 2024, item 105), the Act of 8.03.2013 on ***plant protection products*** (OJ 2024, item 630). The latter act introduced the concept of "**integrated plant protection**," meaning a method of protecting plants from harmful organisms involving the use of all available methods of plant protection, especially non–chemical methods, in a manner that minimizes the risk to human health, animal health and the environment. The Decree of the Minister of Agriculture and Rural Development of 18.04.2013 on the requirements of integrated plant protection (Journal of Laws of 2013, item 505) specifies that integrated plant protection includes all available activities and methods of plant protection against pest organisms, including the use of primarily non-chemical activities or methods, in particular: 1) the use of crop rotation, sowing or planting dates, or plant density, in a manner that reduces the occurrence of harmful organisms; 2) the use of agrotechnology in a manner that reduces the occurrence of harmful organisms, including the use of mechanical plant protection; 3) the use of varieties that are resistant or tolerant to harmful organisms

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

and seed produced and evaluated in accordance with seed regulations; 4) use of fertilization, irrigation and liming, in such a way as to reduce the occurrence of harmful organisms; 5) carrying out cleaning and disinfection of machinery, packaging and other objects, preventing the occurrence and spread of harmful organisms; 6) protection of beneficial organisms and the creation of conditions conducive to their occurrence, especially pollinating insects and natural enemies of harmful organisms.

The Act of June 23, 2022, ***on organic farming and production*** (Journal of Laws of 2022, item 1370, as amended) implements the provisions of EU regulations on organic production and labelling of organic products.

The most important solutions of this law are:

- Definition of the competence of the authorities – the system of control and supervision of organic production, in accordance with EU regulations,
- The abolition of the national requirement for certification bodies to give opinions on applications for approvals for the application of derogations from the rules of organic production (this solution accelerated and facilitated the procedure for issuing approvals for organic producers),
- The introduction of regulations that have increased the supply of fertilizer to organic producers,
- Increase support rates for organic farmers using organic quality seed (this solution is expected to increase the use of organic certified and basic organic seed, which will significantly contribute to increasing yields and their quality and increase the supply of Polish organic products on the market).

Details of the solutions under the Organic Agriculture and Production Act are provided at the link.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUSTAINABLE URBAN DEVELOPMENT AND SMART CITIES

4.1. Regulatory Framework for Smart Cities

4.1.1. Integration of Green Infrastructure in Urban Development Laws

The amendment to the Polish ***Environmental Protection Law*** and certain other laws, which came into force on January 11, 2025, stands the system from the ground up as a transparent and comprehensive legal instrument to support cities' efforts to increase their resilience to the negative effects of a changing climate. The key novelty here is that the previously optional strategic documents – so-called **Urban Adaptation Plans** – will be mandatory for all medium and large cities. These documents will be based strictly on the conclusions of the analysis of meteorological and hydrological phenomena occurring in the city, as well as scenarios of projected climate change and analysis of the risks and opportunities that arise from these changes. The programmatic part of the document will include standardized in its structure descriptions of adaptation objectives and measures, as well as the manner of their implementation, which will make it possible to compare the specific conditions in each city. Two concepts will also be part of the UAPs: the greening of the city and the management of rainwater and snowmelt in the city. It can be expected that the status and development directions of blue-green infrastructure and nature-based solutions (NBS) will be constant elements of this work. The document will have to include rules for monitoring its implementation, so that it can be determined whether the local government has an effective adaptation policy. Every two years, municipal authorities will create a report on monitoring the implementation of the UAPs and submit it to the Institute for Environmental Protection – National Research Institute, under the Ministry of Climate and Environment. The UAPs will be updated at least once every six years. The development of the system is intended to draw on the findings of the pilot program to implement urban adaptation plans in 44 Polish cities in the period 2017-2019 (link).

4.1.2. Traffic Management Legislation

The key area of regulation of this issue in Polish law primarily concerns data management in urban transportation systems. In this regard, the Act of August 11, 2021, ***on open data and reuse of public sector information*** (Journal of Laws of 2023, item 1524) imposes an obligation on public institutions

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

to make dynamic data available, as soon as they are collected. To realize the full potential of the data, they should be made available through APIs (an API is a set of technical functions that enable the connection and mutual exchange of data or metadata between computer programs or ICT systems). In practice, this means that professional users such as programmers can use them to build web and mobile applications such as Czynaczas.pl, Jedzie.pl, or ZTM Utrudnienia to make every day urban life easier.

Smart cities use collected data to manage urban infrastructure, including public transportation. In some cities, such as Warsaw and Wroclaw, optimized public transportation and traffic management is in place thanks to collected data. This allows residents to use intermodal bus and streetcar services.

Interactive timetables, or apps to track public transportation, also make use of the data. They help you find a free parking space, avoid road obstructions or rent city bicycles and scooters. The data and resource portal www.dane.gov.pl includes data from areas such as transportation, which is available for free use. In total, that's 34,000 data sets from more than 300 providers and more than 580 APIs that can be used for free in applications and web services

4.1.3. Public Transport Investments and Legal Provisions Under Transportation Policy

The assumptions of the policy document, which is the **State Transport Policy for 2006-2025** presented on June 27, 2005 by the Ministry of Infrastructure, included a reference to transport policy in the context of the environment. It was pointed out that the implementation of the transport policy will bring about a significant improvement in Poland's transport system, and the application of the principles of sustainable development of the transport system together with the use of modern and innovative technologies will be conducive to increasing the efficiency of operations, reducing energy consumption and, consequently, limiting unit emissions of pollutants. At the same time, broad inclusion of the public in the decision-making process regarding the development of transport infrastructure, as well as equal consideration of social, economic and environmental rationale will lead to minimization of conflicts with nature protection.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

The following were considered particularly important for reducing the negative environmental impact of the transportation system:

- Adhere to the principle of improving and developing the transportation system and its branches by implementing long-term plans and action strategies; this is to enable strategic, comprehensive environmental impact assessments, explanatory campaigns, negotiations, promotion, and early countermeasures (at the planning and early design stages), and this will be the practical implementation of the principle of integrating transportation policy with environmental policy, which is a requirement of the EU
- Increasing the competitiveness of transport modes other than road and air transport, including: rail transport by, among other things, improving rail links between major Polish cities, increasing the attractiveness and competitiveness of rail in regional and agglomeration transport, and supporting the integration of rail transport with other transport systems (creating rail–bus integration hubs, transfer hubs, etc.) – supporting the development of intermodal transport operators and logistics operators.

On November 6, 2019, ***the Strategy for Sustainable Transportation Development until 2030***, adopted by a resolution of the Council of Ministers on September 24, 2019, was published in the Monitor Polski („Monitor Polski" item 1054). The main objective of the national transport policy outlined in the strategy is to increase the country's transport accessibility and improve the safety of traffic participants and the efficiency of the transport sector by creating a coherent, sustainable, innovative and user-friendly transport system at the national, European and global levels. Achieving this goal will allow the development of favourable conditions conducive to the country's stable economic development.

Achieving the main goal in the 2030 timeframe requires the following actions:

- Building an integrated and interconnected transportation network to serve a competitive economy.
- improving the way the transportation system is organized and managed.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- changes in individual and collective mobility (this includes the promotion of public transportation).
- Improving the safety of traffic participants and transported goods.
- Reducing the negative impact of transportation on the environment.
- Improving the efficiency of the use of public funds for transportation projects.

As a first step, investment efforts will be focused on catching up on infrastructure to increase transport accessibility in Poland (roads, railroads, airports, inland waterways, seaports and inland ports) and on organizing the basic infrastructure of an integrated transport system, and, importantly, fighting transport exclusion in the voivodships. The idea is that in stages – by 2030 – it will be possible to increase the country's transportation accessibility, ensure the sustainable development of the various modes of transport, and improve the conditions for the provision of freight and passenger services.

The document includes specific strategic projects aimed at creating a coherent network of highways, expressways and high-standard railroads, a developed network of airports, seaports and inland waterways, and public transport systems. The implementation of dozens of strategic projects key to the development of Poland's transportation system has been assumed. The document also points to modern solutions to facilitate the functioning of the entire transport sector, reducing its negative impact on the environment and climate, so that it will be possible to create a sustainable transport system for the country by 2030.

The strategy calls for the use of modern technologies to improve transportation operations and improve the safety of infrastructure users and traffic participants. The strategy indicates that the flows of goods and people will be improved by coordinating transportation and logistics activities using the current trends of the so-called Fourth Industrial Revolution in terms of eco-economy, digitization and intelligent systems.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

The strategy also defines the scope of activities aimed at implementing so-called cooperative intelligent transportation systems (C-ITS), while stressing the need for public administrations to ensure interoperability of systems nationally and internationally

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

COLLABORATION OF UNIVESITIES WITH LOCAL ACTORS

5.1. Municipality Law (Cooperation with the municipality regarding NGOs)

Cooperation between NGOs and ***the*** local government is regulated by the Act of April 24, 2003, ***on public benefit activity and volunteerism*** (i.e. Journal of Laws 2024, item 1491, as amended). Article 5a (1) of this law stipulates that the decision-making body of a local government unit adopts (on November 30 of each year preceding the program period), after consultations with NGOs, an **annual program of cooperation with NGOs**. Such program defines the principles of the policy implemented by the public administration body towards the non-governmental sector. The same law also imposes on the constituting body of a local government unit the obligation to determine the detailed manner of consultation with the councils of public benefit activity or non-governmental organizations on drafts of local laws in areas relating to the statutory activities of these organizations. Finally, according to this law, at all levels of administration – from the government to the municipality – there are so-called **public benefit activity councils**. The scope of activity of such councils includes:

- Communicating opinions on issues concerning the operation of NGOs.
- Communicating opinions on draft resolutions and local legislation on public benefit spheres and local and regional development strategies – also on environmental issues.
- Aiding and expressing opinions in case of disputes between organizations and the public administration.
- Communicating opinions on the commissioning of public tasks to NGOs.

The law – in addition to consulting on development directions – also provides for the following forms of cooperation between local governments and NGOs:

- Commissioning or co-implementation of public tasks – this is the basic form of cooperation and is usually based on conducting an open bidding competition. However, there are also modes of commissioning tasks without an open tender in special cases (e.g., in the event of a natural disaster, natural catastrophe or technical failure), as well as a simplified mode of

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

commissioning public tasks when the amount of funding does not exceed PLN 10,000 and the task is to be implemented for no longer than 90 days.

- Accepting applications for the implementation of a public task on the initiative of local government organizations.
- Taking and implementing local initiatives. A **local initiative** is a specific form of cooperation between local government units and residents for the joint implementation of a public task. Applications for the implementation of a local initiative are submitted and evaluated according to the criteria set by the decision–making body of the local government unit, which should consider the contribution of social work. Once the application is granted, a contract is concluded. The commitment of the applicant may consist of community service, monetary or in-kind benefits.
- Granting loans, guarantees, warranties for the implementation of tasks in the sphere of public benefit, under the rules set out in separate regulations.
- Establishment and operation of organizational units in cooperation with NGOs.

5.2. Legislation on NGOs

The Constitution of the Republic of Poland in Article 12 provides the right to association, which is the basis for the operation of NGOs. The basis for the operation of associations is contained in the Act of April 7, 1989. ***Law on Associations*** (i.e., Journal of Laws of 2020, item 2261), foundations – in the Act of April 6, 1984, on ***Foundations*** (i.e., Journal of Laws of 2023, item 166). General rules for the operation of non–governmental organizations are contained in the Act of April 24, 2003, ***on Public Benefit Activity and Volunteerism*** (i.e., Journal of Laws of 2024, item 1491, as amended).

The Act on Associations emphasizes that associations are a “tool” for the realization of civil liberties: the right to association and the right to equal, regardless of conviction, active participation in public life and the right to express diverse views, as well as to pursue individual interests. The act indicates the rules for the establishment, operation and closure of associations.

The Act on Foundations lays down the rules for the establishment and operation and closure of foundations and indicates the purposes for which foundations may be established. These purposes

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

should be consistent with the fundamental interests of the Republic of Poland. In addition, they should be socially or economically useful (in particular, they are health protection, development of the economy and science, education and upbringing, culture and the arts, social welfare and assistance, environmental protection and care of historical monuments).

Both associations and foundations are subject to the Act on Public Benefit Activity and Volunteerism. It is sometimes called the "third sector constitution," as it introduced basic legal definitions for non-governmental organization and volunteerism. It also defined the rules of cooperation with public administration and introduced the concept of public benefit.

Important provisions of this act include:

- Definition of a non-governmental organization, which (in simple terms) are non-public and non-profit entities, including associations and foundations.
- Definition of public benefit activities, which are socially useful activities carried out by NGOs in the sphere of public tasks specified in the law.
- A catalogue of public tasks (spheres of public benefit), the implementation of which local governments can delegate to NGOs.
- Indicating that the public administration cooperates in these public tasks with NGOs in various forms, including the commissioning of tasks (mainly through grant competitions) and consultations of legal acts, as well as the possibility of granting loans, guarantees and warranties to NGOs.
- The obligation to adopt a program of cooperation between the local government and NGOs, which describes the local rules of cooperation.
- The possibility of adopting a cooperation program between the government body and NGOs.
- Introduction of the concept of paid and unpaid public benefit activities.
- Determination of the conditions, failure to meet which makes paid activities become economic activity.
- Introducing the mechanism of local initiative mentioned above, by means of which residents (as an informal group or NGO) can apply to the authorities with a proposal for the joint performance of a task (which may consist, for example, in the fact that the authorities finance

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

the tools and materials, and residents socially carry out the implementation activities of the task).

- Introducing the concept of a public benefit organization (PBO), defining its duties and privileges, including the ability to apply for 1% personal income tax.
- Describing the functioning of public benefit activity councils (at the municipal, district, provincial and national levels) – a consultative body in which NGOs and representatives of public administration participate.
- Introducing the concept of a volunteer, i.e., a person who performs "work" (being not "work" in the legal sense; in the law defined by the word "provision") for a non-governmental organization or public administration free of charge, in accordance with certain rules, and clarifying that a member of an association, performing his activities socially, is also a volunteer.

In addition to the aforementioned laws, also important are laws and regulations that regulate various aspects of associations and foundations, e.g. the ***Act on Corporate Income Tax*** describes the issue of tax exemptions; the ***Act on Goods and Services Tax*** – the rules for paying this tax; the ***Act on Public Finance*** – some details in the implementation of projects, subsidized with public money; the ***Act on Copyright*** – the rules, for example, for concluding contracts for work with authors of projects or the use of photographs, the ***Labor Code Act*** – employment issues, and so on. In addition, the rules for the day-to-day operation of individual NGOs are defined by their statutes, bylaws, and internal resolutions.

5.3. Higher Education Law

In Polish universities, it is becoming a good practice to consult the improvement of educational processes with the socio-economic environment and to share knowledge and experience with external stakeholders. Act of July 20, 2018, ***The Law on Higher Education and Science*** (i.e., Journal of Laws of 2024, item 1571, as amended), as a key piece of legislation on higher education, allows employers and representatives of the economic world, as external stakeholders, to jointly create study programs with universities, order the training of specialists, and conduct, as practitioners, some

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

of the teaching activities. External institutions offer internships, apprenticeships, consulting and expert advice, and fund research projects and scholarships for students.

As part of the Team for Sustainable Development and Corporate Social Responsibility – a subsidiary body of the Minister of Funds and Regional Policy, which provides a platform for cooperation between the entire government administration and representatives of business and socio–economic partners – there is a Working Group on University Social Responsibility. The purpose of the Working Group is to disseminate the principles of social responsibility of universities, which were defined by the academic community in the Declaration of Social Responsibility of Universities. The Declaration is an expression of the voluntary commitment of universities to promote the idea of sustainable development and social responsibility in educational programs and management and organizational solutions of universities. The Declaration aims to build broad public awareness of the role of universities in shaping the conditions for sustainable social and economic development of the country. The implementation of the Declaration's commitments influences a better adjustment of the educational offer for students to the current economic challenges, including, above all, the labour market, the inclusion of topics related to business ethics, social responsibility, environmental impact or cooperation with the environment in teaching subjects. The declaration is addressed to all public and non-public universities. The key is the willingness of higher education institutions to carry out their educational and educational mission in the spirit of modern global education, considering trends related to sustainable development and social responsibility.

A Working Group on Social Responsibility of Universities has been established to carry out tasks based on the directions adopted in the Declaration. Currently, the Group is focusing, among other things, on organizing a series of thematic webinars on the social responsibility practices of HEIs and issuing a Directory of good social responsibility practices of HEIs in areas related to environmental protection, social responsibility and institutional governance. The work of the Working Group is coordinated with a representative of the Ministry of Science and Higher Education. Membership in the Working Group is open to interested parties, and involvement is voluntary. Group members share their expertise and good practices.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

University Social Responsibility (USR) is the concept that universities should engage with society and the environment. This includes various aspects such as:

- Sustainability: striving to minimize one's impact on the environment by implementing sustainable practices such as energy conservation, recycling and promoting green solutions. Sustainable development is closely linked to Agenda 2030, which is implemented by United Nations (UN) member countries, and involves development based on 17 Sustainable Development Goals (SDGs). They address social, economic as well as environmental issues, each focusing on a particular area of sustainable development (https://www.un.org.pl/).
- Education and research: conducting research and offering educational programs that contribute to solving social and environmental problems.
- Community engagement: working with local communities, NGOs and other institutions to promote social and economic development.
- Ethics and responsibility: promote ethical values and responsibility among its employees and students, encouraging fairness, equality and respect for others.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Ecology Awareness of Sustainable Green Development: Collaboration of Universities and Local Actors

2023-1-SK01-KA220-HED-000161639

COUNTRY-BASED LEGAL ANALYSIS

ROMANIA

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

GREEN ECONOMY

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

1.1. Environmental Taxes

EU Framework:

a) Polluter Pays Principle (Article 191 TFEU): The EU's environmental policy is underpinned by the polluter pays principle, requiring that costs of pollution be borne by those responsible for causing it.
b) Energy Taxation Directive (2003/96/EC): Sets minimum tax rates for energy products and electricity, aiming to align tax levels with environmental objectives. Potential updates under the European Green Deal envision stronger incentives for reducing carbon emissions.
c) Emissions Trading System (EU ETS): While not a direct „tax," the ETS places a price on carbon by requiring certain industries to buy or receive emission allowances. This market-driven mechanism operates similarly to a tax by incentivizing lower emissions.

Romanian Legislation and Practice:

a) Environmental Fund (Law No. 105/2006 on the Environmental Fund): Introduces fees and contributions for activities with environmental impact (e.g., waste disposal, packaging). Revenue from these fees supports environmental projects and programs.
b) Excise Duties on Energy Products and Electricity: Romania aligns its excise duties on fuels (e.g., petrol, diesel) with the EU's Energy Taxation Directive. While the rates comply with EU minima, calls for a greener overhaul to discourage fossil fuel consumption are ongoing.
c) Other Local Environmental Taxes: Municipalities can impose specific taxes or fees to address local environmental challenges (e.g., waste management surcharges). These vary widely by region, reflecting different local priorities and administrative capacities.

While Romania's taxation system conforms to EU directives, there is scope to further strengthen environmental tax policies, especially regarding greenhouse gas emissions or pollution-intensive industries. Simplifying administrative procedures, reinvesting tax revenues into green initiatives, and increasing public awareness could enhance the overall impact of these fiscal measures.

1.2. Other Regulations

a) EU Regulations and Initiatives:

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Circular Economy Action Plan: This EU strategy promotes reducing waste, improving resource efficiency, and extending product lifespans through ecodesign and recycling regulations.

b) Waste Framework Directive (2008/98/EC): Stipulates waste prevention, reuse, recycling, and recovery targets for Member States, encouraging them to reduce landfill dependency.
c) REACH Regulation (EC No 1907/2006): Governs the registration, evaluation, authorization, and restriction of chemicals, ensuring improved environmental and health standards.

Romanian Regulatory Framework:

a) Government Emergency Ordinance (GEO) No. 195/2005 on Environmental Protection: The cornerstone of Romania's environmental legislation, it establishes general principles and obligations aligned with EU regulations.
b) Law No. 211/2011 on Waste Regime (transposing Directive 2008/98/EC): Details obligations for waste producers, collection, and recycling targets. Amendments continuously aim to improve compliance with EU circular economy goals.
c) Chemical Safety and Management: Romanian authorities follow the EU's REACH and CLP (Classification, Labelling, and Packaging) Regulations, ensuring that hazardous substances are appropriately managed.

Although Romania has transposed core EU environmental regulations, enforcement remains a significant challenge. Strengthening institutional capacities, enhancing public-private collaboration, and implementing digital tools for monitoring can help bridge the gap between legal requirements and actual practice.

1.3. Incentives

EU Incentive Mechanisms:

a) European Green Deal Investment Plan: Provides financial incentives for Member States to transition to climate-neutral economies, including grants, loans, and technical support through the Just Transition Mechanism.
b) EU Cohesion Policy and Recovery and Resilience Facility: Offers funding for projects that support sustainable development, innovation, and green technologies. Municipalities,

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

universities, and private actors can leverage these instruments to drive environmentally responsible growth.

Romanian Incentive Schemes:

a) State Aid for Green Projects: Certain government programs offer subsidies or tax breaks for installing renewable energy capacity, undertaking energy efficiency renovations, or adopting clean technologies.
b) Rabla Program (Vehicle Scrappage Scheme): Encourages replacing older, high-emission vehicles with newer, lower-emission or electric models, featuring both financial and tax-related incentives.
c) Eco-label and Certification: Romanian producers who comply with eco-friendly manufacturing standards can obtain labeling advantages (voluntary but market-differentiating), in line with EU Ecolabel criteria.

Incentive frameworks in Romania increasingly mirror EU best practices, yet many local stakeholders underutilize available funding and programs. Simplifying the application process, building capacity in proposal development, and ensuring transparent criteria for selecting projects could further boost participation and environmental impact.

1.4. Green Public Procurements

EU Directives and Guidelines:

a) Public Procurement Directive (2014/24/EU): Requires environmental considerations to be factored into procurement criteria, ensuring purchased goods and services meet sustainable standards.
b) EU Green Public Procurement (GPP) Criteria: These voluntary criteria help contracting authorities integrate environmental requirements—such as energy efficiency, reduced emissions, or sustainable materials—into tender processes.

Romanian Legal Framework:

a) Law No. 98/2016 on Public Procurement: Transposes EU procurement directives, granting public authorities the ability to include green criteria in tenders.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

b) Government Decision No. 642/2021 (on Green Public Procurement): Provides specific measures and methodologies for integrating environmental requirements into procurement processes, promoting the use of eco-friendly products and services in public contracts.

Romania's transposition of EU directives on green public procurement creates formal opportunities for reducing the environmental footprint of publicly funded projects. However, practical uptake can be slowed by limited training for procurement officers, insufficient market availability of green products, and occasional focus on cost-over-quality purchasing decisions. Enhancing capacity-building, clarifying technical specifications, and rewarding long-term cost savings can accelerate GPP adoption.

Romania has broadly aligned with EU environmental directives across taxation, waste management, procurement, and incentives. Yet, proper enforcement and administrative consistency remain key to realizing these policies' full potential.

Significant EU funds and national incentive schemes are available, but bureaucratic hurdles and limited administrative know-how can hamper their effective use. Targeted capacity-building, simplified procedures, and transparent selection processes are essential for success.

Sustainable change requires cooperation among local authorities, private sector, universities, and communities. Partnerships for research, knowledge transfer, and co-financing can strengthen green policies and accelerate innovation in the circular and low-carbon economy.

Greater engagement with citizens, NGOs, and businesses is needed. Educating the public about environmental taxes, green incentives, and procurement criteria fosters a culture of accountability, prompting broader support and compliance.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUSTAINABLE GREEN FINANCING AND SOCIAL RESPONSIBILITY

2.1. EU Taxonomy for sustainable citiesa

EU Legislative Framework:

a) EU Taxonomy Regulation (Regulation (EU) 2020/852): Establishes a classification system for environmentally sustainable economic activities. Its six environmental objectives include climate change mitigation/adaptation, water and marine resource protection, the transition to a circular economy, pollution prevention, and biodiversity preservation.

b) Technical Screening Criteria: Provide detailed thresholds and requirements for determining whether specific economic activities contribute substantially to one or more of these objectives without significantly harming others.

Romanian Context:

a) Integration into National Financial Policies: As an EU Member State, Romania must ensure that financial institutions and large companies comply with the EU Taxonomy, especially when issuing green bonds or sustainability-linked loans.

b) Challenges and Opportunities: Romanian banks, asset managers, and public institutions face a learning curve in applying technical screening criteria and reporting obligations. However, adopting the EU Taxonomy can improve investor confidence in local green projects, attract foreign investment, and align financial flows with the country's sustainability priorities.

Although Romania aligns with the overarching EU framework, the level of readiness varies among financial actors. More targeted guidance, capacity-building, and sector-specific support (e.g., agriculture, manufacturing, energy) can facilitate broader adoption of the EU Taxonomy's principles, ultimately accelerating the transition to a greener economy.

2.2. Sustainability Reporting

EU Directives and Evolving Landscape:

a) Non-Financial Reporting Directive (NFRD, Directive 2014/95/EU): Requires large public-interest entities (e.g., listed companies, banks, insurers) with over 500 employees to disclose information on environmental, social, and employee matters, respect for human rights, anti-corruption, and board diversity.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

b) Corporate Sustainability Reporting Directive (CSRD): Proposed to expand the scope and depth of non-financial reporting requirements, it aims to introduce mandatory EU sustainability reporting standards, improve data comparability, and include more companies under its purview.

Romanian Compliance and Practice:

a) Transposition of NFRD: Romania has transposed the NFRD into national law, obliging large companies to report on sustainability issues. While many corporations comply in form, the quality of disclosures and the level of standardization can still vary significantly.
b) Emerging Best Practices: Some Romanian companies have begun integrating frameworks such as the Global Reporting Initiative (GRI) or Sustainability Accounting Standards Board (SASB) to enhance transparency. Collaboration with universities and NGOs also helps firms refine their sustainability metrics and align efforts with global best practices.

As EU legislation on sustainability reporting evolves, Romanian businesses must adapt to more rigorous disclosure requirements. Strengthening audit and enforcement mechanisms, investing in data collection infrastructure, and developing internal sustainability expertise can help elevate the overall quality and reliability of corporate ESG (Environmental, Social, and Governance) reporting.

2.3. Guidelines in Sustainable Finance

EU Guidelines and Regulatory Bodies:

a) European Commission's Action Plan on Sustainable Finance: Outlines measures to reorient capital flows towards sustainable activities, integrate sustainability in risk management, and promote transparency in financial services.
b) European Supervisory Authorities (ESAs): Including the European Banking Authority (EBA), European Securities and Markets Authority (ESMA), and European Insurance and Occupational Pensions Authority (EIOPA), which issue technical advice and guidelines on green finance, ESG risks, and disclosure requirements.

Romanian Regulatory and Policy Environment:

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

a) National Bank of Romania (NBR) and Financial Supervisory Authority (ASF): Both institutions increasingly emphasize sustainability, encouraging credit institutions, insurers, and pension funds to integrate ESG criteria in their operations and risk assessments.
b) Voluntary and Market-Driven Initiatives: Besides mandatory rules, several Romanian financial institutions have adopted voluntary guidelines for sustainable lending or responsible investment, sometimes in partnership with international bodies or under commitments like the UN Principles for Responsible Investment (PRI).

While EU guidelines set robust standards for sustainable finance, Romanian financial players vary in their capacity and willingness to adopt them fully. The integration of ESG considerations into traditional financial risk assessments is still maturing, and further policy incentives, such as favourable capital requirements for green loans, could stimulate broader uptake. Strengthening cooperation between regulators, academia, and private-sector players is also crucial for knowledge exchange and best-practice sharing.

Romania is progressively aligning its financial sector regulations with EU sustainability initiatives, notably the EU Taxonomy and reporting directives. This alignment promotes a uniform framework that can boost investor confidence and drive economic growth grounded in responsible, sustainable principles.

Successful adoption of green finance and social responsibility standards hinges on practical guidance, technical training, and clear enforcement mechanisms. Both public and private stakeholders benefit from partnerships with universities and research centres, ensuring robust methodologies and data-driven implementation.

Beyond compliance, incentives, such as subsidies, tax breaks, or preferential regulatory treatment, can accelerate the growth of sustainable investments. Overcoming administrative barriers to accessing EU funds or implementing national incentive programs can further embolden the market for green finance products.

Consistent sustainability reporting standards improve market transparency and help stakeholders, investors, consumers, and civil society, make informed decisions. By refining reporting rules and enhancing audit processes, Romania can elevate corporate accountability and align capital allocation with pressing environmental and social priorities.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

GREEN ENVIRONMENT AND AGRIFOOD

3.1. Water Management

EU Legislative Framework:

a) Water Framework Directive (2000/60/EC): Establishes a comprehensive framework for protecting and enhancing Europe's water bodies, requiring Member States to achieve "good status" in surface and groundwater by defined deadlines.
b) Nitrates Directive (91/676/EEC): Aims to protect water quality by preventing nitrate pollution from agricultural sources. Member States must identify vulnerable zones and implement action programs to reduce agricultural runoff.
c) Drinking Water Directive (98/83/EC, recast 2020/2184/EU): Sets standards for the quality of drinking water across the EU. While primarily focused on human health, it incentivizes improved water resource management and pollution prevention.

Romanian Legislation and Implementation:

a) Law No. 107/1996 (Water Law), as amended: Harmonizes national regulations with the EU Water Framework Directive. It defines management plans for river basins, lays out permitting procedures for water usage, and outlines pollution control measures.
b) OUG No. 40/2010 on Nitrates Vulnerable Zones: Transposes the Nitrates Directive, identifying areas with high nitrate pollution risk. It establishes requirements for proper manure storage, fertilization plans, and monitoring systems.
c) Administrative Structures: River Basin Administrations (e.g., for the Danube, Mureș, Someș-Tisa) oversee regional water resources. They are tasked with drafting and implementing River Basin Management Plans in line with EU objectives.

Romania has transposed core directives into national law, reflecting a commitment to improving water quality and reducing agricultural pollutants. However, enforcement capacity and compliance monitoring, especially in rural areas, remain ongoing challenges.

Upgrading wastewater treatment plants and introducing precision agriculture practices require significant investment. EU Cohesion Policy funds and other financial instruments present opportunities, but local and regional authorities often face administrative barriers in accessing these resources.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Effective water management depends on active collaboration among farmers, local governments, water authorities, and universities. Educational programs focused on responsible fertilizer use and water conservation can bolster compliance and improve sustainability outcomes.

3.2. Agriculture and Diversity

EU Policy and Directives

a) Common Agricultural Policy (CAP): Integrates environmental considerations via "greening measures" and cross-compliance requirements. The new CAP (2023–2027) emphasizes eco-schemes, biodiversity conservation, and climate action in the agrifood sector.
b) EU Biodiversity Strategy for 2030: Aims to protect and restore ecosystems, linking biodiversity targets to agricultural practices and emphasizing pollinator protection, organic farming expansion, and habitat preservation in rural areas.
c) Habitat Directive (92/43/EEC): Ensures the conservation of natural habitats and of wild fauna and flora. Agricultural activities intersect with protected sites (Natura 2000), requiring specific land management measures.

Romanian Legislative Framework:

a) Law No. 18/1991 on Land Resources, as amended: Governs agricultural land use, lease arrangements, and ownership. Although not explicitly an environmental law, it influences how farms operate and manage soil and biodiversity.
b) National Rural Development Program (PNDR): Aligns with the CAP by providing funding, technical support, and guidance for farmers who adopt environmentally friendly practices, such as crop diversification, organic production, and agro-forestry systems.
c) Biodiversity and Protected Areas: Specific ordinances detail protected areas management (e.g., Danube Delta Biosphere Reserve). Farmers operating near or within these zones must adhere to special guidelines to preserve local ecosystems.

Romania has rich agricultural traditions and considerable biodiversity, yet intensive practices can threaten soil fertility, water quality, and local habitats. CAP-aligned programs encourage sustainable methods, but their uptake varies by region and farm size.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Rural communities depend on agricultural livelihoods, making the shift toward more eco-conscious practices a potential economic challenge. Policy instruments—like subsidies for organic conversion or agro-ecological measures – can bridge this gap if effectively implemented and administered.

Collaboration with universities and research institutes is key to developing high-yield, low-impact techniques. Encouraging technology transfer and knowledge-sharing can drive innovation in agro-ecological systems, benefiting both productivity and biodiversity protection.

Romania has broadly transposed EU directives on water quality, agricultural practices, and biodiversity protection into national laws. Continuous updates ensure compliance with evolving EU targets, particularly under the Common Agricultural Policy and the Water Framework Directive.

While the legal framework is robust, consistent enforcement remains a challenge. Building strong local administrative capacities, improving monitoring systems, and raising awareness among farmers are essential steps toward better compliance.

Access to EU and national funding streams can stimulate investment in eco-innovations – such as precision irrigation and organic farming – provided application and reporting procedures are streamlined. Targeted subsidies, training, and infrastructure development can bolster long-term sustainability in the agrifood sector.

Effective water management and biodiversity conservation depend on coordinated actions among government agencies, farmers' associations, NGOs, and universities. Encouraging shared research projects, policy dialogue, and technical assistance fosters a more integrated approach to environmental stewardship in agriculture.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUSTAINABLE URBAN DEVELOPMENT AND SMART CITIES

4.1. Regulatory Framework for Sustainable Urban Development and Smart Cities

Sustainable urban development and the transition to smart cities are becoming increasingly critical in the context of global environmental challenges and rapid technological advancements. Effective legislation at both the European Union (EU) and national levels underpins the successful integration of green infrastructure, energy-efficient transportation, and data-driven city management systems. In Romania, aligning municipal regulations with overarching EU directives, such as the European Green Deal and other sector-specific policies, strengthens compliance and unlocks opportunities for innovation, funding, and collaborative projects.

This module examines how EU and Romanian legislative frameworks interact to shape urban environments that are resilient, resource-efficient, and people-centred. By exploring the regulations that govern the creation of eco-friendly infrastructure, sustainable transport networks, and municipal planning processes, we identify key strengths, gaps, and potential avenues for improvement. Equally important is the role of universities, local authorities, and civil society in fostering holistic, interdisciplinary solutions that contribute to a greener and more inclusive urban future.

4.1.1. Integration of Green Infrastructure in Urban Development Laws

Green infrastructure has become a cornerstone of contemporary urban planning, as it boosts environmental resilience and biodiversity, enhancing citizens' quality of life. At the EU level, policy initiatives and directives promote the preservation and expansion of natural and semi-natural spaces, encouraging member states to embed nature-based solutions into their local and regional development strategies. In Romania, national laws similarly support the integration of parks, green belts, and ecological corridors into city layouts, though practical implementation can vary across municipalities.

Our purpose is to explore how European and Romanian legislation collectively shape the creation and management of green infrastructure in urban areas. We will highlight the importance of aligning policy, funding, and stakeholder engagement, particularly collaborations between universities, local authorities, and private entities, to ensure sustainable and cohesive implementation. By examining

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

legal frameworks and their on-the-ground application, we can better understand both the progress made and the challenges that remain in fostering green, liveable, and future-proof cities.

The main EU Legislative Framework identified on this topic is:

a) European Green Deal (2020): A strategic roadmap aiming to make the EU climate neutral by 2050. It underlines the importance of green infrastructure, nature-based solutions, and preserving biodiversity in urban spaces.
b) EU Urban Agenda: While not a single legislative act, the Urban Agenda provides a framework for improving the quality of life in urban areas. It supports the integration of green infrastructure into local planning and encourages multi-level governance cooperation.
c) Strategic Environmental Assessment (SEA) Directive (2001/42/EC): Requires environmental assessments of certain plans and programs, ensuring that urban development strategies incorporate an evaluation of green infrastructure impacts.
d) Environmental Impact Assessment (EIA) Directive (2011/92/EU, amended by 2014/52/EU): Mandates assessments for specific types of public and private projects. In the context of green infrastructure, EIA helps integrate environmental considerations into urban development projects, encouraging ecosystem services protection.
e) Habitat and Birds Directives (92/43/EEC and 2009/147/EC): Protect valuable habitats and bird species. In urban contexts, these directives ensure that certain green areas and migratory pathways are preserved and integrated into local planning.

The Romanian Legislative Framework identified is:

a) Law No. 350/2001 on Territorial Planning and Urbanism: This law regulates territorial development and urban planning in Romania. It provides the legal foundation for local authorities to integrate green infrastructure, parks, green belts, and ecological corridors into urban plans. Amendments in recent years have increasingly emphasized sustainable development principles.
b) Government Emergency Ordinance (OUG) No. 195/2005 on Environmental Protection: Lays out the overarching environmental protection framework, providing mechanisms for the protection of green spaces, biodiversity, and natural resources. It also stipulates environmental impact assessment procedures in line with EU directives.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

c) Law No. 24/2007 on Regulating and Managing Green Spaces in Urban Areas (subsequently amended): Focuses specifically on protecting, preserving, and expanding urban green spaces. It aligns with EU biodiversity objectives and helps local governments allocate and maintain g

Analysis:

Romania has progressively harmonized its legislative framework (e.g., Law No. 350/2001 on Territorial Planning and Urbanism; OUG No. 195/2005 on Environmental Protection; Law No. 24/2007 on Regulating and Managing Green Spaces) with key EU directives and strategies, such as the Strategic Environmental Assessment (SEA) Directive (2001/42/EC), the Environmental Impact Assessment (EIA) Directive (2011/92/EU, amended by 2014/52/EU), and the European Green Deal. This alignment has encouraged Romanian municipalities to integrate natural elements (e.g., parks, ecological corridors, and other green spaces) into their urban development strategies.

While Romanian laws largely match EU directives, significant disparities can be seen in practical implementation and enforcement at the local level. Resource constraints, administrative fragmentation, and limited capacity for rigorous environmental assessments often slow down or dilute the integration of green infrastructure. Although EU funding is available to support sustainable urban planning, effectively accessing and managing these funds remains challenging for many Romanian local authorities.

Both EU policies and Romanian legislation emphasize stakeholder involvement—particularly with universities, research institutions, and local communities—to foster innovation and sustainable practices. In practice, however, partnerships between municipalities and academic or private-sector entities have been inconsistent. Strengthening these collaborations could lead to more robust solutions for preserving biodiversity and creating community-centred green infrastructure.

EU directives encourage meaningful public consultation and transparency in land-use decisions. In Romania, although mandatory public consultations are in place, their effectiveness can vary from region to region. Improving outreach and engagement tools at the local level can bridge information gaps and ensure that community needs are properly considered in urban planning decisions.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

A more coordinated approach involving national agencies, local authorities, universities, and citizens is needed to close enforcement gaps. Emphasizing integrated planning, where green infrastructure is viewed as essential for climate resilience, health, and economic development, can help Romania fully leverage EU directives and funding. This approach would align with broader EU efforts to mainstream nature-based solutions in cities, thereby enhancing ecosystem services and urban liveability.

4.1.2. Sustainable urban transportation regulations and legislation

Sustainable urban transportation is a key component in creating greener, more liveable cities, directly influencing air quality, energy consumption, and the overall well-being of citizens. At the EU level, legislative directives such as the Clean Vehicles Directive and the Alternative Fuels Infrastructure Directive set standards for reducing emissions, encouraging the adoption of low- and zero-emission vehicles, and developing supporting infrastructure. Romania, in turn, has introduced national strategies and laws aligned with these directives, aiming to modernize public transport systems and promote cleaner mobility options.

This analysis explores the interplay between EU regulations and Romanian legislation in shaping urban transport initiatives. It highlights the significance of coherent planning, adequate funding, and effective stakeholder collaboration, particularly among universities, local governments, and private operators. By comparing legislative frameworks and their on-the-ground outcomes, we can identify best practices and ongoing challenges to ensure the successful transition toward more sustainable transportation networks.

The main EU Legislative Framework identified:

a) Clean Vehicles Directive (2009/33/EC, amended by 2019/1161): Encourages public procurement of low- and zero-emission vehicles, pushing cities to adopt greener transportation options such as electric buses, trams, and other sustainable fleets.
b) Alternative Fuels Infrastructure Directive (2014/94/EU): Requires Member States to develop national policy frameworks for electric vehicle charging stations, natural gas (LNG/CNG) stations, and hydrogen refuelling points, particularly in urban areas.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

c) EU Strategy for Sustainable and Smart Mobility (part of the European Green Deal): Sets targets for reducing emissions in the transport sector and enhancing multimodal connectivity in cities.
d) TEN-T Regulation (Trans-European Transport Network): Focuses on improving and developing integrated transport infrastructure across the EU. While it targets larger-scale projects, it also influences local sustainable mobility strategies.

Romanian Legislative Framework:

a) Law No. 215/2001 on Local Public Administration (relevant amendments): Outlines competencies of local authorities, including the organization of public transportation and the development of local transport policies. This provides the legal basis for municipalities to promote sustainable mobility projects.
b) Romanian National Strategy for Sustainable Transport (encompasses various Government Decisions): Sets national objectives to develop efficient and environmentally friendly transportation systems, including investments in infrastructure for electric mobility, public transit upgrades, and congestion reduction measures.
c) Government Ordinances on Low-Emission Zones: Some cities (e.g., Bucharest) have experimented with regulations for restricting polluting vehicles. While not a single national ordinance, various legislative initiatives have been introduced to reduce air pollution and encourage sustainable modes of transport (e.g. Local Council Decision No. 539/2019 in Bucharest).

Comparative Observations on Sustainable Urban Transportation Regulations and Legislation (4.1.2)

Analysis:

Romania's legislative framework for sustainable urban transportation reflects alignment with key European Union directives and strategies, including the Clean Vehicles Directive (2009/33/EC, amended by 2019/1161) and the Alternative Fuels Infrastructure Directive (2014/94/EU). In principle, these directives mandate the adoption of low- and zero-emission public transport fleets, as well as the development of supporting infrastructures such as charging stations and refuelling points for alternative fuels. Although Romania's national strategies and legislation conform to these requirements, the degree of implementation varies by region. Larger cities like Bucharest and Cluj-

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Napoca have started to incorporate electric buses or hybrid vehicles into their public transport fleets, yet broader nationwide application remains uneven, underscoring a continued need for harmonized policy enforcement and consistent funding at multiple levels of government.

Despite the formal transposition of EU directives into Romanian law, tangible implementation of sustainable transport measures encounters challenges in practice. For instance, while local ordinances can create Low-Emission Zones and encourage cleaner vehicles, enforcement mechanisms are often weak or fragmented, leading to limited effectiveness. Administrative hurdles, budgetary constraints, and varying local governance capacities further complicate the roll-out of green transportation initiatives, particularly in small or under-resourced municipalities. This implementation gap highlights the importance of investing not only in sustainable technologies but also in administrative capacity-building, stronger institutional coordination, and public information campaigns that reinforce compliance with new transportation regulations.

Romanian legislation permits and, in some instances, explicitly encourages cooperation between local authorities, universities, and private stakeholders to develop and scale sustainable transport projects. Academic institutions, especially, can offer research expertise and technical guidance for pilot programs on electric mobility or smart traffic management. Meanwhile, private companies—including automotive and tech firms—can introduce innovative solutions for emissions reduction and data-driven transport services. By fostering public-private partnerships and leveraging the specialized resources within universities, municipalities can design comprehensive and evidence-based strategies that align with EU sustainability goals. Strengthening these collaborations is essential for accelerating the shift toward cleaner mobility options and meeting the EU's broader climate commitments.

Public acceptance is a critical factor influencing the success of sustainable transportation initiatives. While initiatives such as Bucharest's „Oxygen" vignette or proposals for other Low-Emission Zones align with EU directives on air quality, they have sometimes met with public scepticism or outright resistance, partly due to concerns about fairness, costs to drivers, and the availability of reliable public transport alternatives. EU funding instruments, including Cohesion Policy funds and the Recovery and Resilience Facility, present significant opportunities for financing more advanced infrastructure and cleaner vehicle fleets. However, effectively accessing and managing

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

these funds can be challenging due to administrative complexities and the need for well-prepared projects. Enhanced transparency, community engagement, and robust project planning can help secure both public trust and the necessary financial resources to implement transformative mobility solutions.

Ensuring ongoing alignment with EU targets for reducing greenhouse gas emissions and improving air quality will require Romania to further refine its legislative framework and strengthen its capacity to enforce sustainable transport measures. Municipalities could benefit from a more standardized national approach to Low-Emission Zones, complemented by locally tailored rules that address specific urban conditions. In parallel, expanding the charging infrastructure network for electric vehicles and improving the overall quality of public transportation will be crucial steps in promoting greener mobility. Enhanced collaboration among national policymakers, local authorities, academic experts, and private-sector innovators can foster a shared understanding of best practices and amplify the impact of sustainable urban transportation initiatives across the country.

4.1.3. Regulations in Municipal Legislation

Local governance plays a pivotal role in translating broader sustainability policies into on-the-ground action, shaping community development through zoning, infrastructure projects, and public services. While European Union directives set overarching goals and standards, municipalities hold the authority to implement specific rules and ordinances that adapt these requirements to local contexts. In Romania, the legal framework grants local councils and mayors the power to introduce localized regulations, ranging from waste management and air quality controls to green space protection and urban design guidelines.

This section explores the intersection of EU policy aims and Romanian municipal legislation, focusing on how cities and towns can deploy tailored strategies to foster sustainable urban development and smarter, more liveable communities. It underscores both the opportunities and the challenges local administrations face in navigating regulatory mandates, securing adequate funding, and engaging diverse stakeholders. Ultimately, strong and coherent municipal governance (underpinned by effective legislation and civic participation) is essential to realizing the vision of greener, more inclusive cities across Romania.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

EU Context for Municipal Governance

a) Subsidiarity Principle (Article 5(3) TEU): Encourages decisions to be taken as close to citizens as possible, giving local authorities a significant role in implementing EU sustainable urban development policies.
b) EU Cohesion Policy (2021–2027): Directs structural funds (ERDF, Cohesion Fund) toward green transition, digital transformation, and integrated territorial development strategies. Municipalities can tap into these funds to address local sustainability challenges.
c) Urban Agenda Partnerships: The EU Urban Agenda promotes partnerships that include cities, Member States, the European Commission, NGOs, and businesses to jointly develop solutions for urban challenges—covering topics like housing, circular economy, and energy transition.

Romanian Municipal Legislation and Regulations

a) Law No. 215/2001 on Local Public Administration: Provides the overarching framework for the powers and responsibilities of local councils and mayors. It allows municipalities to create regulations tailored to their sustainability priorities (e.g., zoning rules, public transport policies, local taxes or incentives for eco-friendly activities).
b) Local Urbanism Regulations (Romanian: Regulamentul Local de Urbanism – RLU): Municipalities develop RLUs to complement national urban planning laws, dictating local building standards, land use, and environmental protection measures, including the maintenance of green corridors and public spaces.
c) Municipal Environmental Protection Regulations: Cities can enact ordinances to manage waste, regulate air quality, control noise pollution, and preserve local green areas, building on the framework set by OUG No. 195/2005.

Analysis:

Under EU principles like subsidiarity, local authorities are empowered to implement sustainable urban development policies tailored to their specific needs. In Romania, the legal framework (most notably Law No. 215/2001 on Local Public Administration) allocates various responsibilities to municipalities, including zoning, infrastructure development, and environmental management. This decentralization mirrors EU objectives of bringing decision-making closer to citizens. However, while larger cities such as Bucharest, Cluj-Napoca, and Timișoara demonstrate a

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

capacity to enact progressive local regulations, smaller municipalities often grapple with limited resources and expertise, resulting in uneven implementation of sustainability measures nationwide.

Municipal regulations in Romania must align with national laws, such as OUG No. 195/2005 on Environmental Protection, and with EU directives mandating environmental impact assessments and territorial planning. This multilevel governance framework offers synergy when local initiatives reinforce broader policy goals, especially regarding climate action, air quality, and circular economy principles. Conversely, discrepancies can arise when local regulations are less stringent or lack the enforcement mechanisms required by EU directives. A robust, well-coordinated approach between local, national, and EU institutions is therefore vital to ensure consistent policy enforcement and the efficient use of resources.

Both EU regulations and Romanian legislation encourage active community involvement in shaping local urban development policies. Public consultations are formally required in municipal decision-making processes, providing citizens and civil society with an avenue to influence proposals ranging from zoning changes to waste management. In practice, however, the effectiveness of these participatory mechanisms can vary significantly. Some Romanian municipalities have adopted more transparent and inclusive procedures (often in collaboration with academic institutions) while others conduct consultations with minimal outreach. Strengthening public participation tools and ensuring that feedback meaningfully informs policy decisions can boost community buy-in and lead to more effective, widely supported regulations.

Municipal legislation alone is not sufficient to achieve ambitious urban sustainability targets; it must be supported by adequate financing and administrative expertise. EU Cohesion Policy funds, the Recovery and Resilience Facility, and other financial instruments offer municipalities opportunities to invest in sustainable infrastructure and pilot programs. Yet effectively accessing these resources requires specialized knowledge of grant-writing, project management, and compliance with EU guidelines. Larger Romanian cities typically possess more robust administrative structures to secure and administer EU funding, while smaller communities may require capacity-building initiatives, potentially in partnership with universities or national authorities, to fully realize local sustainability projects.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Municipal legislation can serve as a catalyst for broad-based partnerships by explicitly promoting collaboration among local government agencies, universities, private businesses, and non-governmental organizations. Such partnerships can accelerate sustainable urban development by pooling resources, expertise, and innovative solutions. In Romania, some cities have already adopted measures encouraging public-private cooperation for smart city initiatives, renewable energy projects, and green space development. However, to scale these efforts and bridge institutional silos, municipalities may need additional legislative guidance or incentives. By integrating cooperation clauses into local regulatory frameworks, cities can pave the way for more inclusive, research-driven, and community-centred approaches to sustainable development.

Conclusion:

The comparative analysis of Romanian and EU legislation in the realm of sustainable urban development and smart cities underscores both significant progress and persistent challenges. Across the three key areas, green infrastructure (4.1.1), sustainable urban transportation (4.1.2), and local regulatory frameworks (4.1.3), Romania has aligned its legal instruments with overarching EU directives, reflecting a commitment to achieving cleaner, greener, and more resource-efficient urban environments.

In terms of **green infrastructure**, Romania's incorporation of EU directives related to environmental impact assessments and strategic environmental assessments has laid a solid foundation for integrating parks, ecological corridors, and other nature-based solutions in urban planning. Nonetheless, many municipalities continue to face hurdles in translating policy into practice due to administrative constraints, funding limitations, and insufficient inter-agency coordination. Addressing these gaps through capacity-building, clearer enforcement mechanisms, and greater stakeholder engagement will be crucial to fully realize the potential of green infrastructure.

With respect to **sustainable urban transportation**, national strategies and local ordinances in Romania echo EU ambitions for low-emission mobility, alternative fuel infrastructure, and modernized public transit. Cities like Bucharest, Cluj-Napoca, and Timișoara are pioneering initiatives, including electric bus fleets and low-emission zones, which demonstrate the feasibility and benefits of cleaner transport systems. However, the lack of consistent nationwide standards and the uneven distribution of resources hinder widespread adoption. Continued policy refinements, enhanced

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

collaboration with universities and private-sector innovators, and improved funding mechanisms can help scale up these localized successes.

Finally, **local regulations** constitute the linchpin for implementing sustainable urban development on the ground. Romanian municipalities possess the legal autonomy to enact and enforce localized policies, yet variations in administrative capacity, stakeholder participation, and financial resources lead to inconsistent outcomes. Municipalities that leverage EU funding and forge strategic partnerships, particularly with academic institutions, tend to showcase more innovative, data-driven solutions. Strengthening legal provisions that facilitate cooperation across sectors and levels of government will better equip local authorities to respond effectively to rapidly evolving urban challenges.

Overall, while Romania has made notable strides in aligning its legislation with EU mandates, further progress depends on closing the implementation gap, fostering cross-sector collaboration, and ensuring equitable access to resources. By building on existing legal frameworks and empowering local actors, especially universities, to catalyse research, innovation, and community engagement, Romanian cities can advance toward the shared European vision of smart, sustainable, and inclusive urban development.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

COLLABORATION OF UNIVESITIES WITH LOCAL ACTORS

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

5.1. Municipality Law (Cooperation with the municipality regarding NGOs)

EU Context and Principles:

a) Subsidiarity and Multi-Level Governance: The EU encourages decision-making at the closest level to citizens, supporting local authorities in engaging with non-governmental organizations (NGOs) and higher education institutions.
b) EU Urban Agenda and Cohesion Policy: Policies emphasize cross-sectoral partnerships to promote sustainable urban development, underscoring the role of local governments in working with academic and civil society entities.

Romanian Legislative Framework:

a) Law No. 215/2001 on Local Public Administration (subsequently amended): Outlines the duties and responsibilities of local government bodies (municipalities, county councils, mayors) and provides legal grounds for collaboration with external actors, including NGOs and universities. Encourages local authorities to engage in partnerships and to co-finance or support initiatives that serve the public interest, such as research projects, community service programs, and cultural events.
b) Law No. 350/2005 on Local Public Finance: Governs the allocation and use of public funds at the local level. Municipalities can use budgetary provisions to support NGO activities or academic research when aligned with community development objectives.

Analysis:

Romanian law grants municipalities the autonomy to collaborate with NGOs and universities, but the extent of this cooperation often depends on local leadership, financial resources, and the perceived value of academic input.

Administrative complexities and limited budgets can hinder sustained engagement. Streamlined procedures and transparent criteria for project selection can help strengthen partnerships between local authorities, universities, and NGOs.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

5.2. Legislation on NGOs

EU Guidelines and Good Practices:

a) European Civil Society Engagement: The EU promotes an active civil society sector, recognizing NGOs as key stakeholders in policymaking, service delivery, and community development. Various EU-funded programs (e.g., Erasmus+, Horizon Europe) allocate grants to NGOs that collaborate with academic institutions.

b) Principle of Participatory Governance: Encourages local authorities and national governments to include NGOs in decision-making processes, reinforcing transparency, inclusivity, and broader community representation.

Romanian Legal Framework:

a) Government Ordinance No. 26/2000 on Associations and Foundations: Defines how NGOs (associations and foundations) are established, registered, and governed in Romania. Provides mechanisms for NGOs to receive funding (both public and private) and partner with public institutions, including universities and municipalities, to carry out projects with societal impact.

b) Fiscal Incentives and Sponsorship Law (Law No. 32/1994): Offers certain tax deductions for corporate or individual donations to NGOs, which can strengthen resource mobilization for joint initiatives with universities (e.g., research, community outreach).

Analysis:

NGOs in Romania increasingly partner with universities on community-driven projects, such as environmental protection, social inclusion, and youth engagement. This collaboration benefits from a legal framework that offers relative freedom for NGO operations and funding.

Capacity-Building Needs

Although NGOs are legally recognized and actively involved in local initiatives, many still face capacity challenges: financial, administrative, and technical. Increased support and training can enhance their collaboration with academic institutions.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

5.3. Higher Education Law

EU Framework and Initiatives

a) European Higher Education Area (EHEA) and Bologna Process: Encourages cooperation among universities, standardizing degree structures and promoting student/staff mobility. Collaboration with local communities and businesses aligns with EHEA's emphasis on societal engagement and knowledge transfer.
b) Horizon Europe: The EU's main research and innovation program (2021–2027) encourages universities to partner with public authorities, private companies, and NGOs to address societal challenges.

Romanian Legislative Framework

a) National Education Law No. 1/2011: Governs Romania's higher education sector, setting standards for university autonomy, governance, and quality assurance. Encourages research, innovation, and community outreach as part of the universities' mission. Universities may establish partnerships with local governments and NGOs for project-based initiatives, shared research, or service-learning programs.
b) Strategic Funding and Accreditation: Universities seeking accreditation or additional state funding are incentivized to demonstrate the societal impact of their programs, including collaboration with local stakeholders. Joint programs with municipalities and civil society can fulfil criteria related to „third mission" activities, beyond education and research, focusing on community engagement and economic development.

Analysis:

The National Education Law grants universities a degree of autonomy to initiate and manage partnerships with local actors. However, public accountability requirements (e.g., quality assurance evaluations) create an impetus for demonstrating tangible outcomes from such collaborations.

By formalizing ties with municipalities and NGOs, universities can serve as hubs for applied research, workforce training, and social innovation. Developing technology transfer centers, incubators, and collaborative research labs fosters regional development and addresses community needs.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Romanian legislation—particularly concerning local administration (Law No. 215/2001), NGO regulation (GO 26/2000), and higher education (Law No. 1/2011)—provides a foundational framework encouraging universities, local authorities, and civil society to collaborate on projects that benefit the broader community.

Although legal mechanisms exist for intersectoral partnerships, securing sustainable funding and navigating administrative procedures remain significant challenges. Streamlining grant processes, offering technical assistance, and encouraging co-financing models can bolster collaborative efforts.

When effectively implemented, these collaborations yield multiple benefits: municipalities gain access to research-based solutions, NGOs tap into academic expertise, and universities can enhance their societal relevance. This synergy can stimulate local development, improve public services, and enrich educational experiences.

Further legislative refinement, such as clearer guidelines for public-private partnerships, expanded incentives for university engagement, and capacity-building for NGOs, could strengthen Romania's innovation ecosystem. By integrating EU guidance, national priorities, and local resources, Romania can solidify the role of universities as catalysts for sustainable and inclusive community growth.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Ecology Awareness of Sustainable Green Development: Collaboration of Universities and Local Actors

2023-1-SK01-KA220-HED-000161639

COUNTRY-BASED LEGAL ANALYSIS

SLOVAKIA

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

GREEN ECONOMY

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

1.1. Environmental Taxes

Environmental taxation in Slovakia plays a pivotal role in addressing ecological challenges and steering the nation towards sustainable development. While the country has made commendable progress in certain areas, there remains substantial room for enhancing the effectiveness of its environmental tax system.

Slovakia's environmental tax revenue is notably below the European Union (EU) average. In 2017, such taxes constituted 1.76% of the nation's GDP, compared to the EU-28 average of 2.4%. This disparity underscores the potential for Slovakia to leverage fiscal tools more effectively to promote environmental objectives.

Energy Taxation and Carbon Pricing

Energy taxes in Slovakia are primarily governed by the EU Energy Tax Directive of 2003, which sets minimum rates for energy product taxation across member states. Slovakia imposes fuel excise taxes and electricity consumption taxes; however, these rates are relatively low compared to other EU countries. Notably, the country lacks an explicit carbon tax, relying instead on the EU Emissions Trading System (ETS) to price carbon emissions. Approximately 35% of Slovakia's total emissions are covered by the ETS, with the remaining sectors, such as transport and agriculture, facing minimal carbon pricing.

Efforts Towards Green Fiscal Reform

Recognizing the need for a more robust environmental fiscal framework, Slovakia has initiated steps towards green fiscal reform. Proposals include:

- Introducing automatic indexation of environmentally related taxes to maintain their real value over time.
- Differentiating energy tax rates based on the emission intensity of fuels to incentivize cleaner energy sources.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- Broadening tax bases to encompass all emission sources, ensuring a more comprehensive approach to carbon pricing.
- Reforming preferential fiscal treatments, particularly those related to household fuel use, which contribute significantly to local air pollution.
- Increasing landfill taxes and introducing waste incineration taxes to promote waste prevention, composting, and recycling.

Phasing Out Environmentally Harmful Subsidies

Slovakia has historically provided subsidies that inadvertently encourage environmentally detrimental practices. For instance, subsidies for domestic coal production and consumption have been identified as environmentally harmful. The government announced plans to phase out coal subsidies by 2023, aiming to eliminate all such subsidies by 2030.

Challenges and Considerations

Despite these initiatives, several challenges persist:

- **Energy Poverty**: A significant portion of the Slovak population faces energy poverty, with the poorest 40% spending between 20-25% of their annual income on energy costs. This situation necessitates careful consideration to ensure that environmental taxes do not disproportionately burden vulnerable populations.
- **Administrative Capacity**: Implementing and managing new tax structures requires adequate administrative resources and capacity, which may be limited, especially at local government levels.
- **Public Acceptance**: Gaining public support for environmental taxes is crucial. Transparent communication about the purpose and benefits of such taxes can aid in building trust and acceptance among citizens.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Environmental taxes in Slovakia are state-regulated fiscal instruments intended to mitigate environmental degradation and promote sustainable practices. These taxes aim not only to raise public revenues but to influence consumption and production behaviors, internalize environmental externalities, and encourage pollution reduction. The key objectives of environmental taxes in Slovakia include:

1. Reducing greenhouse gas emissions and other forms of environmental pollution
2. Promoting sustainable development and efficient resource use
3. Encouraging behavioral change through financial disincentives for environmentally harmful actions
4. Financing environmental protection projects and climate adaptation measures
5. Harmonizing Slovak tax policy with EU environmental frameworks and targets

In line with the European System of Accounts (ESA 2010), Slovakia classifies environmental taxes according to the impact of the taxable base on the environment. These include:

Energy Taxes

These comprise taxes levied on energy products such as fuels, electricity, and natural gas. Slovakia imposes excise duties on:

Motor gasoline and diesel

Liquefied petroleum gas (LPG)

Natural gas used for heating and transportation

Coal and electricity (in some cases)

CO_2 taxes are integrated into energy taxation, though Slovakia does not currently impose a separate, explicit CO_2 tax outside of the EU Emissions Trading System (EU ETS). Energy taxes are regulated under:

Act No. 98/2004 Coll. on Excise Duties on Mineral Oils

Act No. 609/2007 Coll. on Excise Duty on Electricity, Coal and Natural Gas

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Transport Taxes

These taxes apply to vehicle ownership and usage. Slovakia imposes:

Motor vehicle tax for legal entities and self-employed individuals, based on engine capacity, age, and CO_2 emissions.

Vehicle registration fees, partly emission-based.

Transport-related taxes are primarily regulated under:

Act No. 361/2014 Coll. on Motor Vehicle Tax

Act No. 145/1995 Coll. on Administrative Fees, which includes vehicle registration

Pollution Taxes

Slovakia levies fees on air and water emissions, including:

Charges for air pollutants like sulfur dioxide (SO_2), nitrogen oxides (NO_x), and volatile organic compounds

Fees for the discharge of wastewater into surface waters/

These are governed by:

Act No. 401/1998 Coll. on Charges for Air Pollution

Water Act No. 364/2004 Coll.

Natural Resource Taxes

Fees for the extraction of natural resources include:

Water abstraction fees

Charges for forest and mineral exploitation

Fees for the use of geothermal energy

These are regulated under:

Water Act No. 364/2004 Coll.

Mining Act No. 44/1988 Coll.

Act No. 51/1988 Coll. on Mining Activities

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Legal Basis and Administration

Environmental taxation is administered by the **Financial Administration of the Slovak Republic**, with oversight and policy formulation by the **Ministry of Environment** and **Ministry of Finance**. Proceeds from some environmental fees are directed to the **Environmental Fund**, which supports eco-projects.

1.2. Other Regulations

Slovakia has a comprehensive legal and regulatory framework for environmental protection. Key laws include:

1.7.1. Environmental Protection Act (No. 17/1992 Coll.)

This umbrella legislation provides a general framework for environmental conservation, including pollution prevention, public participation, and environmental impact assessment (EIA). It incorporates principles such as the polluter-pays principle and sustainable development.

1.7.2. Air Protection Act (No. 137/2010 Coll.)

Sets emission limits for air pollutants, establishes air quality zones, and mandates continuous air quality monitoring. Implements EU directives on ambient air quality and emissions from industrial sources.

1.7.3. Waste Management Act (No. 79/2015 Coll.)

Establishes rules for waste collection, separation, recycling, and disposal. It supports the circular economy and introduces obligations for producers (extended producer responsibility - EPR). It prohibits landfilling recyclable waste and promotes waste-to-energy processes.

1.7.4. Water Act (No. 364/2004 Coll.)

Covers water protection, usage rights, wastewater treatment standards, and flood management. Enforces the Water Framework Directive and includes rules for cross-border water cooperation.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

1.7.5. Nature and Landscape Protection Act (No. 543/2002 Coll.)

Regulates biodiversity conservation, protected areas, and ecological networks like Natura 2000. Provides legal instruments for habitat protection, species conservation, and environmental damage liability.

1.7.6. Noise and Vibration Regulation (No. 549/2007 Coll.)

Governs noise limits for industrial, transport, and urban sources. Municipalities can issue additional noise control regulations.

1.7.7. Chemicals and Biocides Act (No. 67/2010 Coll.)

Implements REACH and CLP regulations. Regulates the safe handling, labeling, and distribution of chemicals, pesticides, and biocides.

1.7.8. Light Pollution Act (Draft Law Stage)

Slovakia is currently preparing legislation aimed at limiting light pollution from urban lighting, advertising, and transport infrastructure.

1.7.9. Climate Change Strategy

Slovakia's **Low Carbon Strategy 2050** and **Climate Law (in drafting stage)** aim to set national greenhouse gas reduction targets and pathways in accordance with the EU's Fit-for-55 package and climate neutrality goals.

1.3. Incentives

Slovakia supports the transition to a green economy through various incentive mechanisms:

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

1.8.1. Environmental Fund (EF)

Established under **Act No. 587/2004 Coll.**, the EF co-finances:

- Renewable energy projects (solar, biomass, wind)
- Energy efficiency retrofits in buildings
- Air and water quality improvement measures
- Sustainable urban mobility and public transport
  The EF distributes both national and EU funding (e.g., from the Recovery and Resilience Plan).

1.8.2. State Housing Development Fund

Supports energy-efficient renovations of residential buildings, insulation projects, and installation of green roofs or solar collectors.

1.8.3. Support for Electric Mobility

Through **National Recovery Plan funds**, the government offers:

- Grants for electric and plug-in hybrid vehicles
- Support for EV charging infrastructure
- Reduced registration fees and highway tolls for EVs

1.8.4. Agricultural and Rural Incentives

The **Slovak Paying Agency** provides eco-incentives under the CAP Strategic Plan:

- Organic farming support
- Agroforestry and biodiversity schemes
- Carbon farming pilot initiatives

*1.8.5. **Green Loans and Credit Schemes***

The **Slovak Guarantee and Development Bank (SZRB)** and **Slovenská sporiteľňa** offer green loans with preferential interest rates for energy retrofitting and sustainable entrepreneurship.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

1.8.6. Industrial Decarbonization Grants

Under the **Modernization Fund**, industries can apply for co-financing of carbon reduction technologies, waste heat recovery, and electrification of industrial processes.

1.8.7. Building Renovation Program

Slovakia aims to renovate 30,000 buildings by 2030 under the **Long-Term Renovation Strategy**, supported by EU funds, to meet near-zero energy standards.

1.4. Green Public Procurement

Green Public Procurement (GPP) in Slovakia is recognized as a key policy tool for sustainable consumption and circular economy. Though voluntary for most institutions, GPP has become mandatory in some areas as of 2023.

1.9.1. Legal Basis and Strategy

- **GPP Action Plan 2022–2025** outlines measurable targets for integrating environmental criteria in public tenders.
- Aligned with the **Circular Economy Roadmap** and the **EU Green Public Procurement Criteria**.

1.9.2. Mandatory GPP Requirements

State-funded institutions are required to apply GPP principles for:

- Office paper and printing services
- Energy-efficient IT and lighting equipment
- Clean vehicles under the EU Clean Vehicles Directive
- Construction projects meeting energy and material sustainability standards

1.9.3. EU Ecolabel and Energy Label Criteria

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Products and services bearing the **EU Ecolabel**, **Energy Star**, or **Blue Angel** receive procurement preference. For electronics, only A-class or higher products are accepted, and for construction, at least 30% of building materials must be recyclable or reused content.

1.9.4. Monitoring and Compliance

GPP implementation is monitored via the **Public Procurement Office (ÚVO)**. Reporting is done through the **Electronic Public Procurement System (EKS)**, with annual evaluations submitted to the Ministry of Environment.

1.9.5. GPP Goals

- At least 30% of all public procurement to meet GPP criteria by 2025
- 50% of procured electricity to be from renewable sources by 2026
- 50% of public vehicle fleet to be low- or zero-emission by 2030
- Promote the domestic eco-industry and sustainable SMEs

Slovakia's evolving environmental legislative and policy framework increasingly aligns with EU environmental goals. The country is gradually transitioning from a traditional regulatory model to a balanced approach combining fiscal instruments, market-based incentives, and strategic public procurement. While implementation challenges remain—particularly in administrative capacity and enforcement—Slovakia is positioning itself to leverage EU funding and policy frameworks to strengthen its green transition.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUSTAINABLE GREEN FINANCING AND SOCIAL RESPONSIBILITY

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

2.1. EU Taxonomy for Sustainable Activities

The EU Taxonomy for Sustainable Activities serves as a pivotal framework within the European Union's sustainable finance agenda, aiming to direct investments toward environmentally sustainable economic activities. This classification system delineates specific criteria to ascertain the environmental sustainability of various economic undertakings, thereby facilitating the EU's transition toward a net-zero emissions economy by 2050.

Slovakia's adoption of the EU Taxonomy for Sustainable Activities represents a major strategic pivot in aligning national environmental and economic policies with the European Green Deal and the broader EU sustainable finance agenda. The EU Taxonomy provides a unified classification system for environmentally sustainable activities and is central to directing capital flows towards projects and sectors that contribute meaningfully to climate neutrality and environmental sustainability.

At the national level, the implementation of the EU Taxonomy is coordinated through a multi-agency approach involving:

- **The Ministry of Environment of the Slovak Republic**, which leads the development of environmental criteria and integration of the Taxonomy into environmental permits and climate strategies.
- **The Ministry of Finance**, which supports green budgeting and financial oversight.
- **Národná banka Slovenska (NBS)**, which supervises financial institutions and ensures compliance with disclosure requirements.

The Taxonomy framework classifies economic activities based on their contribution to six environmental objectives:

1. **Climate Change Mitigation**
2. **Climate Change Adaptation**
3. **Sustainable Use and Protection of Water and Marine Resources**
4. **Transition to a Circular Economy**
5. **Pollution Prevention and Control**
6. **Protection and Restoration of Biodiversity and Ecosystems**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

In order to be recognized as sustainable, an economic activity must:

- Make a **substantial contribution** to one or more of these objectives.
- **Do no significant harm (DNSH)** to any of the other objectives.
- Comply with **minimum social safeguards**, such as human rights and labor standards.
- Meet **technical screening criteria** (TSC) set by the EU for each sector and activity.

Slovakia's publicly traded companies, large enterprises, and financial market participants under the scope of the Corporate Sustainability Reporting Directive (CSRD) are now legally required to report the share of their turnover, capital expenditures (CapEx), and operating expenditures (OpEx) that qualify as Taxonomy-aligned. The reporting obligations apply not only to companies based in Slovakia but also to non-EU companies with significant operations within Slovak territory.

Initial national assessments suggest that the sectors most aligned with the Taxonomy criteria include:

- **Energy (renewable electricity generation and distribution)**,
- **Transport (electrification and rail infrastructure)**,
- **Real estate (green building construction and renovations)**,
- **Manufacturing (energy-efficient technologies)**.

To support Taxonomy integration, the Slovak Environment Agency has launched a **technical assistance platform** offering guidance, training, and sector-specific Taxonomy mapping tools for companies and municipalities. Moreover, the government is working on embedding Taxonomy principles into public procurement, infrastructure planning, and the national recovery and resilience plan.

While the framework aims to drive green investment and reduce greenwashing, its implementation presents challenges, especially in data availability, sector-specific know-how, and alignment of business models with Taxonomy criteria. Further development of compliance infrastructure is expected through digital registries and sustainability impact audits by 2026.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

2.2. Guidelines in Sustainable Finance

2.2.1. Sustainability Reporting

Slovakia has undergone a fundamental shift in its corporate reporting obligations with the transposition of the **Corporate Sustainability Reporting Directive (CSRD)**. The CSRD extends the scope of non-financial reporting to a broader set of entities, ensures consistency through the European Sustainability Reporting Standards (ESRS), and introduces mandatory **external audit** of sustainability information.

The Accounting Act of Slovakia was amended in 2023 to reflect these changes. Under the revised framework, large undertakings and public interest entities must disclose:

- Their **sustainability strategy**, policies, and governance.
- The **material sustainability risks and opportunities** they face.
- **Impact metrics** for environmental, social, and governance (ESG) performance.
- Detailed **forward-looking and historical KPIs**.

Additionally, sustainability reports must be:

- **Digitally tagged** using the European Single Electronic Format (ESEF).
- **Audited for limited assurance** initially, progressing toward reasonable assurance over time.
- Published as part of the **annual management report** and accessible to investors and regulators.

Parallel to the CSRD, Slovakia has enforced the **Sustainable Finance Disclosure Regulation (SFDR)** for financial market participants and advisors. The SFDR requires:

- Transparency on how ESG factors are integrated into investment decisions.
- Disclosure of **principal adverse impacts (PAIs)** on sustainability factors.
- Classification of financial products under Articles 6 (non-sustainable), 8 (ESG-promoting), or 9 (sustainable investment objective).

In Slovakia, the central bank (NBS) plays a key supervisory role in enforcing these disclosures. It has established a **Sustainable Finance Unit**, which collaborates with the European Supervisory Authorities (ESAs) to monitor compliance, provide interpretive guidance, and conduct sectoral

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

reviews. The NBS has also developed a **regulatory sandbox** to encourage ESG innovation among fintechs and asset managers.

On a voluntary level, an increasing number of Slovak companies, particularly those with international investors or supply chain exposure, are adopting additional frameworks such as:

- **Global Reporting Initiative (GRI) Standards**,
- **Task Force on Climate-related Financial Disclosures (TCFD)**,
- **SASB Standards**, especially in the energy, manufacturing, and banking sectors.

Nevertheless, implementation barriers persist. Smaller companies and local financial institutions often face resource constraints, lack of internal ESG expertise, and limited access to standardized data. The government is currently developing **capacity-building programs**, especially for SMEs, in cooperation with the Slovak Business Agency and the European Investment Bank (EIB).

2.2.2. Corporate Sustainability Due Diligence (CSDDD)

The upcoming **Corporate Sustainability Due Diligence Directive (CSDDD)** will establish a robust legal obligation for large companies operating in Slovakia to monitor and mitigate adverse impacts across their global value chains. The Directive, set to be transposed into Slovak law by 2026, aims to promote responsible corporate conduct and increase accountability for human rights and environmental violations.

Entities subject to the CSDDD include:

- Slovak and EU companies with more than **500 employees** and global turnover over **€150 million**.
- Non-EU companies doing business in Slovakia with similar thresholds.
- Specific high-impact companies (e.g., textile, agriculture, mineral sectors) with **over 250 employees** and turnover exceeding **€40 million**.

Key due diligence obligations will include:

- **Risk identification and impact assessment** across the company's own operations, subsidiaries, and direct and indirect business relationships.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- **Preventive and corrective measures**, including contractual clauses, codes of conduct, and on-site audits.
- **Public reporting** of due diligence procedures and key findings.
- **Stakeholder engagement**, particularly with affected communities and workers.
- Integration of **sustainability risks into executive remuneration** and corporate strategy.

Slovakia's Ministry of Economy and the Ministry of Justice are jointly preparing the legal transposition, likely involving:

- Amendments to the **Commercial Code** and the **Act on Trade Licensing**.
- The establishment of a **national supervisory authority**, which will have investigatory powers and the ability to impose sanctions or remediation orders.

Though SMEs are not directly subject to the Directive, they will be indirectly affected as downstream suppliers. Large Slovak firms are expected to cascade ESG requirements through **contractual obligations, ESG risk scoring systems, and supply chain audits**.

To ease the transition, the Slovak government plans to offer **legal templates, compliance toolkits, and financial support** for SMEs to implement due diligence measures. Pilot projects with Slovak industry associations (e.g., automotive and electronics) are also underway to establish model ESG supply chain programs.

2.2.3. Slovak National Laws and Regulatory Guidelines

Slovakia's regulatory environment for ESG and sustainable finance is increasingly harmonized with the evolving EU legal landscape. Key national instruments and strategies include:

1. **Amendment to the Accounting Act (2023)** – Implements the CSRD requirements for corporate ESG reporting and introduces third-party assurance for sustainability data.
2. **Act on Financial Market Supervision** – Grants the NBS authority to enforce ESG-related disclosures under SFDR and to coordinate with EU supervisory agencies.
3. **Draft Slovak Climate Law** – A forthcoming legal framework designed to enshrine climate neutrality targets into law and facilitate green investment screening mechanisms.
4. **National ESG Strategy 2023–2030** – A comprehensive policy document developed by the Ministry of Environment outlining ESG priorities, regulatory tools, and transition finance mechanisms.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

5. **Green Bond Framework (2024)** – Issued by the Ministry of Finance, aligned with the EU Green Bond Standard, providing guidelines on eligible green projects, verification, and reporting obligations.

Slovakia has also endorsed several cross-border initiatives such as:

- The **OECD Slovakia Green Finance Roadmap**.
- The **CEE ESG Forum**, promoting regional coordination on ESG regulation and disclosure practices.
- The **EU NextGenerationEU Recovery Plan**, allocating a significant portion of funds toward climate and digital objectives.

Table 4. Transposition of key EU ESG instruments

Aspect	EU Regulation	Slovak Legal Instrument
Corporate ESG Reporting	CSRD	Accounting Act (2023 amendment)
Financial Market Disclosures	SFDR	Act on Financial Market Supervision
Sustainable Activities	EU Taxonomy	Ministry of Environment Guidance & NBS Enforcement
Due Diligence	CSDDD	Pending amendment to Commercial Code

2.2.4. Policy Initiatives and Outlook

Slovakia's commitment to sustainable finance and social responsibility is reinforced by various strategic and institutional measures designed to support systemic ESG integration across the economy. Notable policy initiatives include:

- **Slovak ESG Observatory**: A national data platform for ESG indicators, company disclosures, and public transparency tools, managed by the Ministry of Environment and Statistical Office.
- **Green Financing Guarantees**: Operated by **Slovenská záručná a rozvojová banka (SZRB)** to support ESG-aligned projects and innovation in SMEs.
- **Public-Private ESG Task Force**: A coordination mechanism between regulators, investors, and corporations to monitor policy impacts and foster market development.
- **ESG Capacity-Building Hub**: Supported by the EU Technical Support Instrument and delivered through the Slovak Business Agency.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Looking ahead, Slovakia will need to address key implementation bottlenecks, such as:

- The **limited ESG literacy** among SMEs and local authorities.
- The need for **standardized ESG data infrastructure** and digital compliance tools.
- **Cross-border ESG risks**, especially in complex supply chains.

Despite these challenges, the outlook remains positive. ESG integration in Slovakia is gaining momentum due to investor pressure, regulatory imperatives, and growing awareness among stakeholders. Strategic ESG alignment is likely to become a core component of business resilience, access to finance, and international competitiveness for Slovak enterprises over the next decade.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

GREEN ENVIRONMENT AND AGRIFOOD

3.1. Water Governance

Climate change has a major impact on the quantity and quality of water for agriculture, energy, industry, population and ecosystems. The solution to water problems must therefore be comprehensive, based on the cooperation of ministries, relevant institutions, universities and research institutes with the inclusion of farmers, the population, municipalities, and the energy sector. The aim of week 3 dedicated to water governance is to explain the importance of strong, integrated, sustainable and inclusive water management and need for inclusion all key stakeholders and decision-makers.

Water is a finite resource that is critical to the well-being of people, ecosystems, and economies. There are multiple stakeholder groups that are involved in the formulation of policies, laws, governance, management and use of water as a resource for various services and activities. Engagement with stakeholders, both formal and informal becomes crucial when the resource needs to be shared with various sectors competing for the same resource. Apart from the basic need of water for human consumption, some key sectors that are increasingly competing for water are energy, food and ecosystems (WEFE). It is important to recognize that WEFE Nexus is a multi-stakeholder process.

Water governance and management is a global issue. The OECD has been developing its Water Governance Programme (WGP) since 2009, with the aim to help governments at all levels identify and fill critical gaps in the design and implementation of their water governance. To do so, the WGP relies on economic analysis, policy dialogues, commonly accepted standards, and international best practices. This programme stands on the premises that water management should not be confined to the limits of a sectoral or environmental issue, but it must be approached as a crucial economic issue for sustainable and inclusive growth, territorial development and well-being at large.

To cope with current and future water challenges, the OECD argues that policy responses will be viable only if they are coherent, if stakeholders are properly engaged, if well-designed regulatory frameworks are in place, if there is adequate and accessible information, and if there is sufficient

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

capacity, integrity and transparency. Furthermore, policy responses should be adapted to territorial contexts, recognizing that optimal governance solutions respond to context-specific circumstances.

Based on these considerations, OECD developed a set of twelve principles on water governance to support effective, efficient and inclusive water policies, and thus improve the 'water governance cycle' from policy design to implementation. They are articulated around three mutually reinforcing and complementary dimensions of water governance, namely effectiveness, efficiency, and trust and engagement. These dimensions apply across different water management functions, water uses, and set-ups of water management, resources and assets. The resulting OECD Principles on Water Governance were adopted in 2015 by the 35 OECD member countries.

Principles 1 to 4 target water governance effectiveness, improving coordination by defining clear goals and targets, specifying roles and responsibilities, managing water at appropriate scales, and encouraging coherence and sufficient capacity. Principles 5-8 focus on the efficiency of implementation processes and stimulate continuous improvement in order to maximise the benefits at the least cost to society. Principles 9-12 emphasize the roles of different actors, as well as the importance of trust and engagement, through more transparency and better communication. These can indeed enhance democratic legitimacy and fairness for society.

The OECD Principles on Water Governance[1]:

Enhancing the effectiveness of water governance

Principle 1 Clearly allocate and distinguish roles and responsibilities for water policymaking, policy implementation, operational management and regulation, and foster co-ordination across these responsible authorities

Principle 2 Manage water at the appropriate scale(s) within integrated basin governance systems to reflect local conditions, and foster co-ordination between the different scales

Principle 3 Encourage policy coherence through effective cross-sectoral co-ordination, especially between policies for water and the environment, health, energy, agriculture, industry, spatial planning and land use

[1] https://www.oecd.org/en/topics/sub-issues/water-governance/the-oecd-principles-on-water-governance-and-implementation-strategy.html

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Principle 4 Adapt the level of capacity of responsible authorities to the complexity of water challenges to be met, and to the set of competencies required to carry out their duties

Enhancing the efficiency of water governance

Principle 5 Produce, update, and share timely, consistent, comparable and policy-relevant water and water-related data and information, and use it to guide, assess and improve water policy

Principle 6 Ensure that governance arrangements help mobilise water finance and allocate financial resources in an efficient, transparent and timely manner

Principle 7 Ensure that sound water management regulatory frameworks are effectively implemented and enforced in pursuit of the public interest

Principle 8 Promote the adoption and implementation of innovative water governance practices across responsible authorities, levels of government and relevant stakeholders

Enhancing trust and engagement in water governance

Principle 9 Mainstream integrity and transparency practices across water policies, water institutions and water governance frameworks for greater accountability and trust in decision-making

Principle 10 Promote stakeholder engagement for informed and outcome-oriented contributions to water policy design and implementation

Principle 11 Encourage water governance frameworks that help manage trade-offs across water users, rural and urban areas, and generations

Principle 12 Promote regular monitoring and evaluation of water policy and governance where appropriate, share the results with the public and adjust when needed

Water governance in the EU

EU water policy is one of the priorities set out in the European Green Deal. The European Commission works closely with the member states to help achieve the objectives of preserving, protecting and

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

improving the quality of water resources EU-wide. The water situation in each Member State is monitored by set of water indicators[2].

EU water policy main instruments are the Water Framework Directive and its associated directives, the Floods Directive, the Drinking Water Directive, the Bathing Water Directive, the Nitrates Directive, the Urban Wastewater Treatment Directive and the Marine Strategy Framework Directive (MSFD).

The main findings from the 2022 Environmental Implementation Review covering all EU member states and water regulation are as follows:

1. Implementation of the Water Framework Directive objectives continues but, although the assessment of the 3rd river basin management plans (RBMPs) is pending, it can be said that progress towards achieving good status for water bodies is generally slow, even though the 2027 deadline is drawing near. This is due to a mix of factors, including failure to set reference conditions for the characterization of water bodies and incomplete assessment of pressures, insufficiencies in the monitoring of water, meaning that the status of water bodies is unknown, assessments of the impact of activities on water bodies are incorrectly performed, and the exemptions invoked are not sufficiently justified.

2. The EIR country reports present the latest information on the percentage of water bodies not achieving good ecological and chemical status, the abstraction of water per sector as well as the water exploitation index. Increased investments are essential if objectives are to be met, and EU funding continues to support the implementation efforts by EU member states, mainly through the cohesion policy, the Recovery and Resilience Facility, and Horizon Europe.

3. The Commission has shared its findings on the 2nd RBMPs with the Member states in question, and expects to see the shortcomings addressed when the 3rd RBMPs are submitted. The Commission is also verifying how the national systems (e.g. permits and inspections) ensure that the Water Framework Directive is correctly applied on the ground by each member state as regards abstraction of water, point source and diffuse pollution. The member states were due to report to the Commission their 3rd RBMPs and 2nd flood risk management plans (FRMPs) by 22 March 2022.

[2] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Water_statistics#Water_as_a_resource

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

4. The 1998 Drinking Water Directive is well implemented overall in the EU. However, it is a cause for concern in a few countries. By 12 January 2023, all member states have to transpose the recast Directive in order to comply with the revised quality standards and the Commission is providing support in order to ensure the timely and correct transposition of the new rules.

5. Overall, the Bathing Water Directive shows high rates of excellent or good performance in the EU. However, there are some differences between member states.

6. In many cases, despite sometimes well-defined and specific obligations such as those in the Nitrates Directive and the Urban Waste Water Treatment Directive, implementation on the ground has been very slow, due to planning and organisational flaws and a lack of funding and prioritisation.

7. Many member states have problems in relation to the implementation of the Nitrates Directive and should step up their efforts to further reduce nitrates pollution from agriculture in groundwater and eutrophication by designating all nitrates-vulnerable zones and by including appropriate measures in their action plans.

8. Despite a degree of progress, urban wastewater is still not collected and treated as it should be in many member states, which is why several of them are facing infringement proceedings and a few have been subjected to financial penalties.

Current trends and the future agenda of EU water policy

EU water governance has evolved over the years, mainly based on lessons learned with the implementation of the water-related legislation in the EU member states.

Overall, the following trends in EU water governance can be identified:

Rise of multi-level and multi-sector governance;

Increased attention for policy integration and coherence;

Emergence of innovative governance approaches where public actors share responsibilities with private actors (e.g. multi-stakeholder partnerships);

Emergence of new concepts and arrangements (e.g. water footprint, water justice, river contracts, rivers as legal persons);

Citizen engagement and participation have become more and more important; and

Increased attention for co-creation processes of policy makers together with stakeholders.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Based on a recent analysis of water governance diversity across Europe, there is a need to implement a hybrid approach to water governance and WFD implementation. Such an approach should combine elements of centralised and decentralised governance. Decentralisation (discretionary) is needed to ensure collaboration and engagement of stakeholders at the local level, whereas a centralised (mandatory) governance and regulatory system should enable national environmental standards to be set and enforced. They conclude that such a hybrid approach may provide the best of both worlds (bottom-up involvement of stakeholders meeting top-down goal achievements) and is worthy of further research.

EU water policy is still in flux. In recent years, new initiatives have been introduced and existing ones integrated for example under the umbrella of the European Green Deal and the Farm to Fork and Biodiversity Strategies, zero pollution ambitions and European Climate Law. In the years to come,

Water Resources Management and Regulation in Slovakia

Slovakia is endowed with substantial water resources, including numerous rivers, groundwater reserves, and lakes, making it one of the countries with relatively abundant freshwater availability in the European Union. The territory of Slovakia lies within the Danube River Basin, one of the largest in Europe, with the major rivers including the Danube, Váh, Hron, and Hornád. The country's hydrological network plays a crucial role not only in water supply and energy production but also in ecosystem health, agriculture, flood management, and recreation.

The management of water resources in Slovakia is centrally governed by the **Ministry of Environment of the Slovak Republic**, in cooperation with various national bodies, such as the **Slovak Water Management Enterprise (Slovenský vodohospodársky podnik – SVP)**, which is responsible for the maintenance of watercourses and water structures. Additionally, the **Slovak Hydrometeorological Institute (SHMÚ)** oversees monitoring and research, while the **Public Health Authority** plays a role in safeguarding drinking water quality.

Slovakia's water governance is based on a well-developed legal and strategic framework that seeks to balance environmental protection with water use for economic and public needs. Key legal documents and regulations include:

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Water Act (Act No. 364/2004 Coll. on Water, as amended) – This is the principal legislation governing water protection and management in Slovakia. It sets the legal status of water, defines water bodies and their usage, regulates water quality protection, determines water abstraction rights, and outlines flood protection measures. The Act also incorporates the principles of integrated water resources management in line with EU legislation, including the Water Framework Directive (2000/60/EC).

Act No. 305/2018 Coll. on Waters of the Slovak Republic – Strengthens aspects of sustainable water use, introduces new water pollution controls, and provides for ecosystem-based management of watercourses.

Flood Protection Act (Act No. 7/2010 Coll., as amended) – Establishes responsibilities for flood risk assessment and management, outlines floodplain mapping, early warning systems, and cooperation with neighboring countries in shared river basins.

Government Decree No. 269/2010 Coll. on Indicators and Limits for Surface Water and Groundwater Quality – Defines specific environmental objectives and sets out parameters for the chemical and ecological status of water bodies, aligned with the EU Water Framework Directive.

National River Basin Management Plan (NRBMP) – Updated regularly in accordance with the Water Framework Directive. It presents strategic objectives for water management, identifies pressures on water bodies, and outlines the program of measures for improving or maintaining the status of waters. The current cycle covers the years 2022–2027.

Operational Programme Quality of the Environment (OPQE) – Funded by EU Cohesion Policy, it supports investment in water infrastructure, including wastewater treatment plants, flood mitigation, and water-saving technologies. It also supports adaptation to climate change and implementation of nature-based water management solutions.

Regulation on Water Fees (Decree No. 221/2005 Coll., amended 2022) – Specifies the calculation and collection of fees for surface and groundwater abstraction, wastewater discharge, and related environmental services. Revenues from these fees support investments in water infrastructure and environmental protection.

Regulation on Concessions for Water Use (Act No. 136/2010 Coll.) – Establishes procedures for granting and supervising concessions for hydropower, irrigation, commercial abstraction, and other significant uses of water resources.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

National Adaptation Strategy to Climate Change – Includes specific chapters addressing water management, emphasizing drought preparedness, water retention in landscapes, ecological restoration of rivers, and the construction of sustainable urban drainage systems (SUDS).

In addition to legal instruments, Slovakia actively engages in regional and international cooperation on water issues through the **International Commission for the Protection of the Danube River (ICPDR)** and bilateral commissions with Hungary, Austria, Czechia, and Poland. These platforms promote data sharing, joint risk assessment, and harmonized flood management and water quality measures.

Slovakia is also committed to supporting sustainable water use in industry and agriculture. The **Ministry of Economy**, in cooperation with the **Environmental Fund**, provides subsidies and tax incentives for businesses that invest in technologies for water recycling, greywater use, and efficient cooling systems. Water-saving practices are particularly encouraged in energy-intensive industries and food processing.

European Union Biodiversity Regulation

The **European Union (EU) Biodiversity Regulation and Policy Context** form a comprehensive and evolving framework aimed at halting biodiversity loss, restoring natural ecosystems, and integrating nature protection into wider policy areas. This framework operates under the broader goals of the European Green Deal and the EU Biodiversity Strategy for 2030, complemented by numerous legislative instruments, funding mechanisms, and international commitments.

The EU's biodiversity policy is rooted in a growing recognition of the ecological, economic, and social value of nature. Biodiversity — the variety of life on Earth — underpins ecosystems that provide vital services such as food, water, pollination, climate regulation, and disease control. However, biodiversity in the EU has been in steep decline for decades due to habitat loss, pollution, overexploitation, climate change, and invasive species.

To address these challenges, the EU has developed a robust legal and strategic policy framework. Adopted in May 2020 as a central part of the **European Green Deal**, the Biodiversity Strategy for 2030 aims to reverse biodiversity loss and build Europe's ecological resilience. It outlines key targets to be achieved by 2030, including:

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Legally protecting at least 30% of the EU's land and sea area, with one-third of these areas under strict protection.

Restoring degraded ecosystems through legally binding nature restoration targets.

Reducing the use and risk of **pesticides by 50%**.

Planting **at least three billion trees** across the EU.

Restoring at least **25,000 kilometers of free-flowing rivers**.

Halting and reversing the decline of pollinators.

Promoting sustainable agriculture and forestry practices.

The strategy also aims to integrate biodiversity considerations across all EU policies, particularly in agriculture, fisheries, trade, and climate policy, and emphasizes nature-based solutions to address environmental challenges.

Legislative Instruments

The EU has a suite of legal acts that form the backbone of its biodiversity policy:

A. Birds Directive (Directive 2009/147/EC)

First adopted in 1979 and updated in 2009, the Birds Directive aims to protect all wild bird species naturally occurring in the EU. It establishes Special Protection Areas (SPAs), which are part of the Natura 2000 network, and requires the maintenance of habitats to ensure the survival and reproduction of birds.

B. Habitats Directive (Directive 92/43/EEC)

Adopted in 1992, this directive aims to ensure the conservation of a wide range of rare, threatened, or endemic species and habitats. Together with the Birds Directive, it forms the legal basis of the **Natura 2000** network — the largest coordinated network of protected areas in the world.

C. EU Regulation on Nature Restoration (proposed 2022)

This is the first major legislative initiative to explicitly require legally binding nature restoration targets for all Member States. It sets restoration obligations for degraded habitats and ecosystems, including peatlands, grasslands, wetlands, marine environments, and urban green spaces. The proposed regulation mandates:

Restoration of at least 20% of EU's land and sea areas by 2030.

Specific ecosystem-based restoration targets by 2050.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Monitoring and reporting obligations for Member States.

The regulation is part of a growing shift from protection-only measures toward proactive ecological restoration.

Natura 2000 and Protected Areas

The **Natura 2000 network** lies at the heart of EU biodiversity policy. Comprising over 27,000 sites, it covers more than 18% of EU land and 9% of its marine territory. It ensures the long-term survival of Europe's most valuable and threatened species and habitats.

Sites are designated under the Birds and Habitats Directives, and Member States are responsible for ensuring their effective management. While not strictly prohibiting human activities, Natura 2000 promotes sustainable land use, including eco-tourism, organic farming, and traditional practices that support conservation goals.

Mainstreaming Biodiversity into Other Sectors

One of the major challenges in biodiversity conservation is aligning other policy areas with biodiversity goals. The EU addresses this through cross-sectoral integration:

A. Common Agricultural Policy (CAP)

The CAP has historically been a driver of biodiversity loss due to intensive farming. However, recent reforms aim to better align agricultural subsidies with environmental and biodiversity objectives through "eco-schemes" and conditionality on biodiversity-friendly practices.

B. Common Fisheries Policy (CFP)

The CFP sets rules for the sustainable use of marine resources. Biodiversity goals are advanced through catch limits, marine protected areas, and measures to protect sensitive species and habitats.

C. EU Forest Strategy

This strategy promotes sustainable forest management and protection of primary and old-growth forests, supporting the EU Biodiversity Strategy's goals.

D. Climate and Energy Policies

The EU emphasizes **nature-based solutions** as key to climate adaptation and mitigation. Peatland restoration, afforestation, and preserving blue carbon ecosystems (e.g., seagrass beds) are examples where biodiversity and climate goals align.

Monitoring and Enforcement

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Biodiversity conservation efforts are only effective if monitored and enforced. The **European Environment Agency (EEA)** provides regular assessments, such as the **State of Nature in the EU** report. The European Commission oversees implementation, with the power to initiate infringement proceedings against Member States that fail to comply with biodiversity laws.

The **Biodiversity Information System for Europe (BISE)** and tools like **Copernicus** (EU's Earth observation program) support data collection, transparency, and public access to biodiversity information.

Funding Mechanisms

Biodiversity conservation in the EU is supported by several funding instruments:

LIFE Programme: The EU's flagship fund for environment and climate action, including nature and biodiversity projects.

Horizon Europe: Supports research and innovation on biodiversity and ecosystem services.

CAP and European Agricultural Fund for Rural Development (EAFRD): Fund eco-schemes, agri-environmental measures, and landscape restoration.

European Regional Development Fund (ERDF) and **Cohesion Fund**: Support biodiversity-friendly green infrastructure.

NextGenerationEU: The recovery plan includes funds for green transition, including nature restoration and ecosystem resilience.

Challenges and Outlook

Despite its ambitious framework, the EU faces several challenges:

Implementation gap: Many Member States lag in translating EU biodiversity laws into national action.

Funding shortfalls: Conservation remains underfunded relative to other sectors.

Data gaps and enforcement: Reliable data and effective enforcement mechanisms are uneven across Member States.

Pressure from economic sectors: Agriculture, infrastructure, and energy sectors often conflict with biodiversity goals.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

However, growing public awareness, climate urgency, and recognition of nature's economic value offer momentum for progress. The **EU Nature Restoration Law**, if adopted and implemented effectively, could be a transformative step toward a nature-positive economy.

The EU's biodiversity regulation and policy context represent one of the world's most comprehensive approaches to nature conservation and restoration. Grounded in strong legal instruments, supported by funding and science, and aligned with global goals, it offers a model for biodiversity governance. The key to its success lies in ambitious implementation, cross-sectoral integration, and sustained political will to place nature at the heart of Europe's future.

3.2. Agriculture and Biodiversity

Slovakia's approach to agriculture and biodiversity conservation reflects the principles of sustainability, resilience, and alignment with EU Green Deal priorities. The agricultural sector is a key land user and has significant influence on biodiversity. To address environmental challenges, Slovakia has adopted a series of strategies and regulations that aim to reduce the ecological footprint of agriculture while promoting the conservation of ecosystems and genetic diversity.

The **Slovak Agricultural and Food Strategy to 2030** and the **Strategic Plan of the Common Agricultural Policy (CAP) 2023–2027** serve as the primary national frameworks for transforming agriculture into a climate-resilient, environmentally friendly, and economically viable sector. These strategies set goals for reducing emissions, enhancing biodiversity, improving soil health, and supporting small farms and organic producers.

- **Act No. 220/2004 Coll. on the Protection and Use of Agricultural Land** – This law regulates land use, prohibits degradation of agricultural land, and introduces soil conservation measures. It supports land consolidation and sustainable land-use planning practices, helping to preserve landscape features vital to biodiversity.
- **Act No. 405/2011 Coll. on Organic Farming** – Provides rules for organic production, processing, labeling, and certification. It encourages the use of traditional breeds and varieties, rotational grazing, and biodiversity-friendly practices. Organic farming areas in Slovakia are growing steadily, supported by national and EU subsidies.
- **Nature and Landscape Protection Act (Act No. 543/2002 Coll., as amended)** – This is the cornerstone of biodiversity protection in Slovakia. It defines protected areas, regulates

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

activities in Natura 2000 sites, and establishes biodiversity-friendly land management obligations. The law includes provisions for ecological networks, green infrastructure, and landscape connectivity.

- **National Biodiversity Strategy 2020–2030** – This strategic document outlines actions to halt biodiversity loss, enhance ecological corridors, and integrate biodiversity into all sectors, especially agriculture, forestry, and spatial planning. It is aligned with the EU Biodiversity Strategy and the Convention on Biological Diversity.
- **Decree No. 24/2003 on the Establishment of Protected Sites** – Defines management regimes and zoning within national parks and nature reserves. It also facilitates cooperation with farmers for agri-environmental measures in buffer zones.
- **Program for the Conservation and Sustainable Use of Genetic Resources in Agriculture (2021–2027)** – This program ensures the preservation of Slovak autochthonous breeds, landraces, and heritage crop varieties. It supports gene banks, seed-saving programs, and on-farm conservation through subsidies and education.
- **CAP Eco-schemes and Agri-environmental Measures (AEMs)** – Slovakia provides financial support for farmers who apply biodiversity-friendly practices, such as buffer strips, field margins, flowering meadows, reduced pesticide use, or habitat restoration. These payments are conditional on environmental outcomes and monitored through GIS and satellite imagery.
- **Green Infrastructure Strategy and Landscape Revitalization Program** – Encourage the integration of natural elements into agricultural landscapes, including wetland restoration, hedgerow planting, and riparian buffer zones. The programs contribute to biodiversity, flood prevention, and pollination services.
- **Slovak Climate Adaptation Strategy** – Identifies agriculture and biodiversity as priority sectors for climate resilience. It supports traditional grazing practices, landscape water retention, and carbon sequestration through sustainable farming.

Slovakia also maintains a network of **protected areas and Natura 2000 sites**, covering over 29% of the national territory. The management of these areas involves coordination between the Ministry of Environment, municipalities, NGOs, and landowners, including farmers. Public-private partnerships play a key role in implementing conservation actions.

To promote public awareness and education, the **Slovak Environment Agency** and the **Ministry of Agriculture** organize training, demonstration farms, and biodiversity monitoring involving schools, research institutions, and citizen science initiatives.

Slovakia has created a comprehensive legal and strategic environment for harmonizing agriculture and biodiversity conservation. While considerable progress has been made, further efforts are needed to strengthen enforcement, scale up eco-schemes, and integrate biodiversity into all phases

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

of agricultural planning. By enhancing cooperation between sectors and leveraging EU resources, Slovakia can ensure the long-term health of its ecosystems and sustainable food systems for future generations.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUSTAINABLE URBAN DEVELOPMENT AND SMART CITIES

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

1.1. Sustainable Urban Development in Slovakia

Sustainable urban development in Slovakia is framed by both EU-level directives and national policies aimed at promoting environmental protection, social inclusion, and economic resilience in urban settings. As an EU Member State, Slovakia integrates European environmental and urban policies into its national legislative framework, while also addressing specific domestic challenges such as regional disparities, post-industrial urban transformation, and demographic shifts.

Slovakia's regulatory and strategic approach to sustainable urban development is shaped by the following EU and national instruments:

1. **European Union Cohesion Policy and Urban Agenda for the EU**: Under the EU Cohesion Policy (2021–2027), sustainable urban development is a mandatory investment priority, with at least 8% of the European Regional Development Fund (ERDF) allocated to integrated urban strategies. The Urban Agenda for the EU further promotes better regulation, funding, and knowledge sharing to support sustainable urban growth.
2. **European Green Deal and Fit for 55 Package**: Slovakia aligns with EU climate goals, including achieving carbon neutrality by 2050. Sustainable urban development is integral to this transition, through actions such as improving energy efficiency in buildings, investing in green mobility, and enhancing air quality in cities.
3. **Slovak National Development Plan 2021–2030**: This strategic document outlines Slovakia's long-term development vision, including commitments to sustainable urbanization, digital transformation, and environmental resilience. It integrates sustainable mobility, renewable energy, circular economy principles, and smart urban planning as cross-cutting priorities.
4. **Integrated Territorial Investment (ITI) and Integrated Strategies for Sustainable Urban Development (SUDs)**: Under EU-funded Operational Programmes (e.g., OP Slovakia 2021–2027), Slovak urban areas are required to adopt Integrated Strategies for Sustainable Urban Development (IÚSD). These strategies are co-developed by urban authorities and stakeholders, ensuring place-based approaches tailored to local contexts.

Legal Framework and Planning Instruments

The legal basis for sustainable urban development in Slovakia is established through several key laws:

1. **Act on Spatial Planning and Building Code (Building Act) No. 200/2022 Coll.**: This comprehensive reform of Slovakia's spatial planning framework strengthens the integration of sustainability principles in land use decisions. It mandates climate adaptation, environmental protection, and efficient use of space in urban development processes.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

2. **Act No. 539/2008 Coll. on Regional Development Support**: This law underpins the preparation and implementation of regional development programs, including urban regeneration projects and sustainable infrastructure development, especially in less developed regions.
3. **Environmental Impact Assessment Act (EIA Act) No. 24/2006 Coll.**: Urban development projects in Slovakia are subject to environmental review processes that assess their impact on biodiversity, air quality, and local ecosystems. The law promotes early integration of environmental considerations in project planning.
4. **Act on Nature and Landscape Protection No. 543/2002 Coll.**: This act ensures the integration of green infrastructure, such as urban parks and ecological corridors, into spatial planning, reinforcing the biodiversity and climate resilience of urban areas.

Strategic Urban Development Initiatives

Slovak cities and metropolitan regions are increasingly adopting strategic initiatives aimed at sustainable development:

- **Bratislava Sustainable Urban Development Strategy**: As the capital city, Bratislava has implemented a 2030 strategy prioritizing climate adaptation, low-emission mobility, energy-efficient buildings, and the protection of natural resources. The city is also a signatory to the Covenant of Mayors for Climate & Energy.
- **Košice Urban Innovation Agenda**: Košice's development strategy emphasizes post-industrial transformation through culture, digital innovation, and green urbanism. Projects include sustainable housing development, green corridors, and smart waste management.
- **Urban Green Infrastructure Pilot Projects**: Funded through EU cohesion and LIFE programmes, several Slovak cities have piloted the introduction of urban wetlands, rooftop gardens, and permeable surfaces to address urban heat islands and stormwater management.

Despite the policy progress, Slovakia faces several challenges in implementing sustainable urban development:

- **Fragmentation of urban governance**: Slovakia's municipal structure (with over 2,900 municipalities) leads to difficulties in regional coordination and integrated planning.
- **Capacity constraints**: Many municipalities lack sufficient expertise and resources to develop and implement complex sustainable urban strategies.
- **Legacy infrastructure**: Post-socialist urban areas often struggle with outdated housing stock, car-dependent urban design, and insufficient green public spaces.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Nonetheless, EU structural and recovery funding, combined with digital and environmental innovation, presents an opportunity to transform Slovak urban centers into more resilient, inclusive, and sustainable living environments.

4.2. Regulatory Framework for Smart Cities in Slovakia

As a member of the European Union, Slovakia aligns its national policies with EU-wide initiatives for digital transformation, climate neutrality, and sustainable urban development. The Slovak government has progressively developed legal and strategic frameworks to foster smart urban growth, focusing on digital infrastructure, environmental sustainability, and quality of life.

Slovakia's regulatory approach is significantly shaped by several key EU frameworks:

1. **Smart Cities Marketplace**: Slovakia participates in this EU platform that facilitates collaboration between municipalities, investors, and innovators to implement solutions in areas such as sustainable mobility, digital governance, and clean energy.
2. **European Green Deal**: Slovakia supports the EU's goal of achieving climate neutrality by 2050. Slovak urban policy increasingly integrates digital tools and green technologies to reduce emissions and improve urban resilience.
3. **Digital Decade Policy Programme**: This directive guides Slovakia in setting measurable targets for digital transformation by 2030, focusing on secure digital infrastructure, public e-services, and digitally empowered citizens.

Slovak National and Local Initiatives

At the national level, Slovakia has adopted several strategic documents to align with EU standards while tailoring its policies to local challenges:

1. **Smart Cities Concept (Concept of Smart City Development in the Slovak Republic, 2020)**: This foundational document introduces Slovakia's vision for smart cities. It emphasizes integrated solutions in transport, energy, environment, and data management. The document promotes inter-municipal cooperation and the use of EU structural funds to pilot smart city projects.
2. **Digital Transformation Strategy of Slovakia 2030**: Adopted by the Ministry of Investment, Regional Development, and Informatization, this strategy outlines a roadmap for a digital society. It supports the development of e-governance tools, data-driven public administration, and digital infrastructure across cities.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

3. **National Recovery and Resilience Plan (NRRP)**: Funded by the EU's Recovery and Resilience Facility, Slovakia's NRRP allocates substantial investment to digital innovation and urban sustainability. Among its components are smart transport systems, energy-efficient public infrastructure, and green public procurement.

Slovakia's approach is characterized by strong alignment with EU policies but also grapples with localized barriers, including fragmented municipal governance, disparities in broadband coverage, and limited technical capacities in smaller towns.

Integration of Green Infrastructure in Urban Development Laws

Green infrastructure is increasingly embedded in Slovakia's urban planning legislation as a tool to address environmental degradation, heat island effects, and urban sprawl.

1. **Act No. 50/1976 Coll. on Land Use Planning and Building Order (Building Act)**: This foundational law includes provisions that require the inclusion of green spaces in urban development. Urban plans must incorporate green areas as functional zones, and larger developments are mandated to maintain a minimum proportion of permeable or vegetated surfaces.
2. **National Spatial Development Perspective of the Slovak Republic (2021)**: This strategy emphasizes the integration of green and blue infrastructure in all levels of planning. It promotes the restoration of ecological corridors, urban forests, and green belts.
3. **Slovak Environmental Strategy 2030**: This document explicitly recognizes green infrastructure as a nature-based solution to climate adaptation. It calls for increasing green coverage in cities and integrating water management systems such as retention basins, green roofs, and permeable pavements.
4. **Local Implementation – Bratislava and Košice**: Major cities have started to incorporate green infrastructure into local strategies. Bratislava's "Adaptation Strategy to Climate Change" promotes green corridors, tree planting, and sustainable drainage systems. Similarly, Košice has implemented projects under the EU's URBACT and LIFE programs to enhance urban greenery and biodiversity.

Although Slovakia has adopted significant measures, implementation remains uneven across municipalities, highlighting the need for greater coordination, funding, and technical support at the local level.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

4.3. Traffic Management Legislation

Slovakia's transport regulation provides a legal backbone for managing urban mobility in smart and sustainable ways:

1. **Act No. 8/2009 Coll. on Road Traffic**: This law governs traffic safety, the behavior of road users, and the rights and responsibilities of transport authorities. It allows municipalities to implement intelligent traffic systems (ITS), low-emission zones, and traffic-calming measures.
2. **Act No. 135/1961 Coll. on Roads (Road Act)**: Regulates the construction and use of roads, including the provision for special lanes (e.g., for public transport or bicycles) and smart signage. It enables local governments to regulate vehicle access and implement modern traffic technologies.
3. **National Transport Development Strategy of Slovakia (2021–2030)**: Emphasizes smart mobility and digitalization in urban transport. It encourages the deployment of ITS, development of integrated ticketing systems, and real-time traffic data platforms.
4. **Act No. 56/2012 Coll. on Road Transport**: Regulates public passenger transport, including the licensing and quality standards for urban and intercity transit services. The act allows municipalities to introduce digital tools for fare collection, schedule planning, and mobility-as-a-service (MaaS) systems.

Public Transport Investments and Legal Provisions under Transportation Policy

The legal and financial framework for public transport in Slovakia supports sustainability and modernization:

1. **National Programme for the Development of Public Passenger Transport (2023)**: Focuses on increasing the attractiveness of public transport through digitalization, vehicle electrification, and multimodal integration. It prioritizes environmental efficiency and inclusivity.
2. **EU Cohesion Funds and NRRP**: Major public transport investments are co-financed through the EU's Structural and Investment Funds and the NRRP. Projects include:
    - Electrification and modernization of regional railways.
    - Purchase of electric buses and trams.
    - Development of intermodal terminals and park & ride facilities.
3. **Act No. 513/2009 Coll. on Railways**: Governs rail infrastructure, safety, and operation. Recent amendments enable the co-financing of smart technologies and support for climate-resilient infrastructure.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

4. **Integration of Transport Systems**: Cities like Bratislava and Košice are working to integrate different modes of transport under unified regional operators, supported by digital platforms for ticketing and real-time information. These initiatives align with the EU's Sustainable and Smart Mobility Strategy.
5. **Maritime and Air Transport**: While not a major component in urban areas, Slovakia's legal framework (e.g., Act No. 143/1998 Coll. on Civil Aviation) includes provisions for low-emission ground services and the use of digital air traffic management systems. Inland waterway transport, regulated by the **Act No. 338/2000 Coll.**, is being considered in the context of sustainable freight logistics.

Slovakia's approach to smart cities is a multi-level legal and strategic effort guided by EU directives and supported by national initiatives. The framework includes:

- Integration of digital and green infrastructure.
- Legal support for intelligent traffic systems.
- Strategic investment in public and low-emission transport.
- Local adaptation strategies, particularly in major urban centers.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

COLLABORATION OF UNIVESITIES WITH LOCAL ACTORS

5.1. NGO-Municipality Cooperation

The collaboration between universities and local actors in Slovakia plays an increasingly important role in fostering regional development, innovation, and knowledge transfer. As the country navigates complex socio-economic transformations—ranging from digitalization and decarbonization to demographic shifts and urban regeneration—higher education institutions (HEIs) are emerging as key partners in local and regional governance. This collaboration is particularly significant in addressing place-based challenges, supporting smart specialization strategies, and promoting sustainable urban and rural development.

In recent years, Slovak universities have expanded their traditional roles in education and research to become active agents in their communities. Through partnerships with municipalities, regional development agencies, non-governmental organizations, and local businesses, universities co-develop applied research projects, public policy strategies, and innovation ecosystems. Initiatives such as living labs, technology transfer offices, and urban innovation hubs have facilitated hands-on collaboration in fields like smart mobility, climate adaptation, circular economy, and cultural heritage preservation. Notable examples include the University of Žilina's leadership in smart transport solutions and Comenius University's work in social inclusion and health policy.

This growing collaboration is reinforced by European and national funding instruments, including the Horizon Europe programme, the Slovak Recovery and Resilience Plan, and the Operational Programme Slovakia 2021–2027. These frameworks emphasize the importance of the quadruple helix model, where academia, government, industry, and civil society co-create knowledge and innovation. Moreover, Integrated Territorial Investments (ITIs) and Smart Specialisation Strategies (RIS3 SK) actively encourage the involvement of academic institutions in regional planning and development.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Legislative Acts on NGO-Municipality Cooperation

1. Act No. 369/1990 Coll. on Municipal Establishment

This foundational law outlines the competencies of municipalities, including the authority to support and collaborate with NGOs. It empowers local governments to issue generally binding ordinances and to engage in activities that promote the welfare of their communities.

2. Act No. 83/1990 Coll. on Association of Citizens

This act governs the establishment and operation of civic associations, providing the legal basis for NGOs in Slovakia. It ensures the freedom of association and outlines the procedures for registration and operation of NGOs.

It's important to note that recent legislative changes in Slovakia have introduced stricter regulations for NGOs, including increased reporting requirements and potential penalties for administrative infractions. These developments have raised concerns among civil society organizations and international observers regarding the potential impact on NGO operations and cooperation with local governments.

3. Act No. 523/2004 Coll. on Budgetary Rules of Public Administration

This legislation regulates the financial management of public funds, including provisions for municipalities to allocate resources to NGOs. It sets the framework for transparent and accountable financial cooperation between local governments and NGOs.

4. Act No. 343/2015 Coll. on Public Procurement

While primarily focused on procurement processes, this act allows NGOs to participate in public tenders, enabling them to provide services or implement projects in partnership with municipalities.

5. Act No. 406/2000 Coll. on Energy Efficiency

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

This act encourages municipalities to collaborate with NGOs on projects aimed at improving energy efficiency and environmental protection, reflecting a commitment to sustainable development.

6. Act No. 282/2008 Coll. on Support of Youth Work

This legislation promotes the involvement of NGOs in youth work, providing a framework for municipalities to support youth organizations and initiatives.

7. Act No. 448/2008 Coll. on Social Services

This act defines the provision of social services and allows municipalities to contract NGOs for delivering such services, fostering partnerships in social welfare.

8. Act No. 308/1991 Coll. on Freedom of Religious Belief and the Position of Churches and Religious Societies

This law recognizes the role of religious organizations, many of which operate as NGOs, and outlines their cooperation with municipalities in various community activities.

9. Act No. 34/2002 Coll. on Foundations

This act governs the establishment and operation of foundations, providing a legal framework for their collaboration with local governments on philanthropic and community development projects.

10. Act No. 147/1997 Coll. on Non-Profit Organizations Providing Public Benefit Services

This legislation defines non-profit organizations that offer public benefit services, facilitating their cooperation with municipalities in areas such as education, culture, and social services.

5.2. Legislation on NGOs – Slovakia

The legal framework governing non-governmental organizations (NGOs) in the Slovak Republic is primarily based on the **Act No. 83/1990 Coll. on the Association of Citizens**, as amended. This law

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

outlines the conditions for the establishment, registration, operation, and dissolution of civic associations (a common form of NGOs in Slovakia), as well as their rights and responsibilities.

According to this law, an association is defined as a **voluntary association of individuals or legal entities**, formed to achieve goals that are not for profit and that align with constitutional and legal norms. NGOs may be established for a wide range of purposes, including the **protection of human rights and freedoms, environmental protection, education, social care, science and research, cultural and community development**, and more.

Core Legal Principles:

- **Voluntary nature**: Participation is open and based on the free will of individuals or legal entities.
- **Independence**: NGOs are self-governed, determine their internal structure, objectives, and activities independently.
- **Non-profit orientation**: NGOs must reinvest any potential income into the fulfillment of their mission and cannot distribute profits.

Other Related Laws:

Slovakia recognizes several **legal forms of non-profit organizations**, each governed by a specific law:

- **Act No. 147/1997 Coll. on Non-Profit Organizations Providing Public Benefit Services**
- **Act No. 34/2002 Coll. on Foundations**
- **Act No. 213/1997 Coll. on Civic Associations**
- **Act No. 35/2002 Coll. on Churches and Religious Societies**
- **5.3 Act No. 111/2001 Coll. on Public Benefit Organizations**

Each of these acts provides a different structure and operational framework, depending on the NGO's specific mission and form of registration.

Focus Areas and Strategic Roles

Slovak NGOs are active in numerous areas:

- **Environmental protection**
- **Social services and welfare**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- **Human rights and civil liberties**
- **Cultural heritage and minority rights**
- **Youth, sports, education, and lifelong learning**
- **Health promotion**
- **Community development and rural revitalization**

NGOs play a key role in **advocacy, monitoring public policy**, and **providing services** in sectors where public institutions may not have sufficient reach.

Collaboration with Public Institutions and Universities

Slovak law encourages **cooperation between NGOs and public institutions**, including municipalities, ministries, and universities. Forms of collaboration include:

- **Public tenders and procurement** for services of general interest (regulated by **Act No. 343/2015 Coll. on Public Procurement**)
- **Joint research projects**, particularly in environmental and social innovation fields
- **EU and nationally funded programs**, which require partnerships between NGOs and academia (e.g., through Horizon Europe or the Slovak Research and Development Agency)
- **Community engagement programs** driven by civil society and universities, focusing on democratic participation, inclusion, and innovation

The **Office of the Government Plenipotentiary for Civil Society Development** acts as a key coordinating body between NGOs and public administration.

Financial and Institutional Support

NGOs in Slovakia may apply for funding from:

- **State budget grants**
- **EU structural funds**
- **Norwegian and Swiss grants**
- **Municipal support programs**
- **Private and corporate donations**
- **1% or 2% income tax assignments from individuals and companies (unique to Slovakia)**

This mechanism allows taxpayers to redirect a portion of their taxes to an NGO of their choice, providing essential and predictable support to civil society organizations.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Challenges and Criticism

Despite a generally enabling legal environment, NGOs in Slovakia face several ongoing challenges:

- **Regulatory complexity**: Particularly for small or emerging NGOs, navigating compliance and reporting obligations can be burdensome.
- **Financial instability**: Many NGOs rely on project-based funding with little core or administrative support.
- **Political pressure and public distrust**: Certain political narratives have at times portrayed NGOs negatively, undermining public trust.
- **Legislative tightening**: As of 2024–2025, Slovakia has introduced more stringent NGO reporting requirements, prompting concerns among watchdogs and international observers about possible restrictions on civic space.

5.3. Higher Education Law – Slovakia

In the Slovak Republic, the legal framework for higher education institutions (HEIs) is established by **Act No. 131/2002 Coll. on Higher Education Institutions**, as amended (most recently in 2024). This law governs the **status, organization, funding, autonomy, and responsibilities** of universities and other higher education entities. Although the **direct role of universities in cooperating with NGOs and municipalities** is not always explicitly stated, the law supports engagement with society through principles and objectives related to **public accountability, research application, and knowledge transfer**.

Key Legal Provisions

Article 1–3: Fundamental Principles

- HEIs are recognized as **autonomous institutions of public interest**, expected to contribute to **education, science, culture, and the economy**.
- HEIs are obliged to ensure that **teaching, scientific research, and artistic activities are in harmony with ethical standards and societal needs**.
- A key principle is **academic freedom**, but this is balanced with an **expectation of responsibility to the public and cooperation with stakeholders**.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Article 4-5: Social Mission and Autonomy

- Universities possess **academic, scientific, administrative, and financial autonomy**.
- Autonomy includes the **freedom to define their own strategic goals**, which increasingly include **engagement in regional development**, participation in **EU innovation projects**, and collaboration with **civil society**.
- The law mandates HEIs to **develop partnerships** with institutions in Slovakia and abroad, indirectly supporting cooperation with NGOs and municipalities.

Article 54+: Study Programs and Student Development

- Curricula are expected to develop **critical thinking, civic responsibility, and ethical judgment**, aligning with principles of **sustainable development and public service**.
- HEIs must include elements of **practical experience and social relevance** in programs, preparing students for societal engagement.

Strategic Role in Regional and Societal Development

While not always directly stated in the Higher Education Law, **strategic policy documents complement the legal mandate**, such as:

- The **National Strategy for Research, Development and Innovation (RDI) 2021–2030**
- The **Smart Specialisation Strategy (RIS3 SK)**
- The **Plan for the Recovery and Resilience of the Slovak Republic**

These documents support the **integration of higher education into regional development**, with a focus on:

- **Research excellence and international cooperation**
- **Public-private-academic partnerships**
- **Socio-economic impact and innovation transfer**

HEIs are encouraged to act as **engines of regional innovation**, linking with **local governments, NGOs, and the private sector**.

Partnerships with NGOs and Local Communities

Although cooperation with NGOs is not always formalized through legislation:

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- **Universities may enter into public-private or public-civic partnerships** to implement social projects, particularly in **healthcare, sustainability, inclusion, and digitalization**.
- Via **project funding (EU, national grants, or civic contracts)**, universities can act as project partners with **municipalities and NGOs** in fields like:
    - Community development
    - Cultural heritage and tourism
    - Environmental protection
    - Social innovation

Some Slovak universities also maintain **institutional frameworks for civic engagement**, such as:

- Centers for Service Learning
- University-wide volunteer programs
- Research-to-community transfer centers

Smart Specialisation and Innovation

Slovakia's Smart Specialisation Strategy (RIS3 SK) outlines a **vision for the integration of HEIs in innovation ecosystems** by:

- Supporting **smart, sustainable, and inclusive growth**
- Fostering **technology transfer**, particularly in digital, green, and industrial modernization sectors
- **Bridging gaps between academia, industry, and civil society**, emphasizing local needs and territorial cohesion

The RIS3 strategy encourages HEIs to:

- Actively include **students and young researchers** in innovation ecosystems
- Serve as hubs for **digital skills, circular economy, and applied science**
- Contribute to **entrepreneurship education and start-up incubation**, often in partnership with NGOs or public agencies

Challenges and Opportunities

While the Slovak Higher Education Law creates space for civic and community engagement:

- The **implementation of socially oriented missions is uneven** across institutions.
- Some universities lack **dedicated units or funding** for sustained cooperation with NGOs or municipalities.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- **Administrative burden and short-termism** in funding pose challenges for long-term civic-university partnerships.

However, with increasing emphasis on **regional innovation platforms** and **EU program participation**, the opportunity for meaningful collaboration between **HEIs, NGOs, and local government** is steadily growing.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Ecology Awareness of Sustainable Green Development: Collaboration of Universities and Local Actors

2023-1-SK01-KA220-HED-000161639

COUNTRY-BASED LEGAL ANALYSIS

TURKEY

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

GREEN ECONOMY

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

1.1. Environmental Taxes

In response to the escalating environmental pollution driven by societal habits and unsustainable economic activities, numerous international initiatives have been undertaken to encourage environmentally conscious economic practices and behavioral changes. Turkey actively engages with these global efforts and strives to align its environmental policies and legislation with those of the European Union, particularly in the context of its EU accession negotiations. In this regard, and in line with the European Green Deal, Turkey's Ministry of Trade introduced the Green Deal Action Plan in 2021. This plan establishes a framework for achieving a green and circular economy through the implementation of various economic instruments aimed at environmental protection and sustainable growth. Among these instruments, fiscal policies are particularly emphasized due to their cost-effectiveness in promoting sustainability. Accordingly, Turkey seeks to integrate environmental considerations into its tax policies, utilizing fiscal measures as a mechanism to support the transition to a circular economy. However, despite these efforts, Turkey lacks a comprehensive environmental tax framework explicitly designed for environmental protection and pollution prevention. The Environmental Cleaning Tax (ECT) remains the primary regulatory instrument in this domain, serving as the principal environmental tax currently in effect.

1.1.1. Environmental Cleaning Tax

Environmental Cleaning Tax, which is the only environmental tax levied directly for the protection of the environment in Turkey, is a pollution (waste) tax regulated under the Law No. 2464 on Municipal Revenues. According to this regulation, it is levied on 'residential, business and other buildings located within the municipal boundaries and neighbouring areas and benefiting from the environmental cleaning services of the municipalities'. The taxpayer of the tax is those who use these buildings.

In terms of its subject matter, ECT consists of two basic taxes: solid waste and wastewater. Tax on solid waste is levied on the provision of garbage collection service by the municipality, while tax on wastewater is levied on the provision of sewerage service by the relevant municipalities (Pirler, 1994:

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

35, 39; Çelikkaya, 2011: 113). The ECT for residential buildings is calculated as 3.30 TL for metropolitan municipalities and 2.40 TL for other municipalities per cubic metre based on the amount of water consumption as of 2025. The ECT for workplaces and other buildings used for other purposes is calculated based on monthly tariffs determined according to building groups and grades, and this tariff is applied with a 25% increase in metropolitan areas (BGK, Repeated Art. 44). The amounts determined for dwellings, workplaces and buildings used for other purposes are applied with a 50% discount for municipalities in priority regions for development and municipalities with a population of less than 5,000, except for those located within the borders of metropolitan municipalities (Art. 5 of the General Communiqué No. 56 of the ISC).

Although ECT is introduced for the purpose of protecting the environment in general and preventing waste in particular, it is taxed according to the amount of water consumption in residences, and according to building groups and grades in workplaces and other buildings. Therefore, since there is no direct relationship between the tax and the amount of waste, the tax burden does not have any effect on waste generation. Therefore, the environmental effectiveness of ECT is limited since it cannot be associated with the amount of waste and only covers the costs of waste collection and disposal (Çelikkaya, 2011: 113).

1.2. Other Regulations

In Turkey, apart from the environmental cleaning tax directly introduced for the protection of the environment, there are various taxes and fees scattered in various tax laws, as well as fees and administrative fines levied in accordance with the Environmental Law, and there are limited regulations for the protection of the environment, prevention of pollution and making polluters pay for pollution (Gülşen, 2021: 39). These regulations can be classified under three headings: taxes collected by the central government, taxes, fees and contribution shares to expenditures collected in accordance with the Law on Municipal Revenues, and regulations introduced in accordance with the Environmental Law. Practices other than the ECT and the fees or administrative fines levied pursuant to the Environmental Law are regulations enacted to generate revenue by prioritizing the potential

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

impacts on the environment and the financial purpose, rather than directly serving the purpose of protecting the environment (Aydın and Deniz, 2017: 449).

1.2.1. Taxes Collected by the Central Government

Although some taxes collected by the central administration are enacted for fiscal purposes, they indirectly have a positive impact on the environment. These taxes consist of value added tax, special consumption tax and motor vehicles tax.

Value Added Tax

Value added tax is a consumption tax levied on the delivery of all kinds of goods and services. In this context, since it is based on the deliveries of goods and services, VAT is a regulation enacted for the purpose of generating revenue, not for the protection of the environment. On the other hand, VAT can be used as a policy tool in protecting the environment, even indirectly, by discouraging the consumption of environmentally harmful products by taxing environmentally harmful products at a higher rate and/or encouraging the consumption of environmentally beneficial products by taxing them at a lower rate, not including them in the tax base or exempting them from taxation. For example, in Turkey, the ammunition subject to refund is excluded from the tax by being counted among the items not included in the tax base according to the VAT Law (Şenyüz et al., 2022: 274). At the same time, the exemption of 'delivery of metal, plastic, tyre, rubber, paper, glass scraps and wastes and garment trimmings' from tax under Article 17/g-4 of the VAT Law is important in terms of encouraging the recycling of such environmentally harmful products (Aydın and Deniz, 2017: 452).

Special Consumption Tax

Special Consumption Tax (SCT) is a consumption tax levied on the goods listed in the tables annexed to the law. Schedule I of the Law covers petroleum and petroleum products, Schedule II covers motor vehicles, Schedule III covers tobacco products and cola sodas, and Schedule IV covers white goods

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

and luxury consumer goods. Although the purpose of SCT is to tax the consumption of the goods included in these lists, especially the petroleum and petroleum products included in lists I and II and motor vehicles cause negative effects on the environment by emitting wastes such as lead and particulate matter. In SCT, the tax base is determined by taking into account the sales prices and lump sum tax amounts together with measurements such as kilograms, cubic metres, kilocalories according to the lists (Article 11 of SCT Law). Therefore, there is no relationship between the tax base and environmental pollution. Although the purpose of SCT is not to protect the environment, the prices of such products can be increased by increasing the tax burden on such products. Thus, by changing the behaviour of users in a way to reduce the consumption of such products, the negative effects on the environment can be reduced (Gülşen, 2021: 139).

Motor Vehicle Tax

MTV is a tax levied on motor vehicles included in the tariffs numbered I, II and IV attached to the law. Motor vehicles may cause negative impacts on the environment by emitting carbon dioxide, greenhouse gases and carbon emissions. Therefore, in order to eliminate the effects of motor vehicles on the environment, it is necessary to apply motor vehicles tax in a way to reduce the amount of carbon dioxide emissions, greenhouse gases and carbon emissions (Gürsoy, 2021: 3; Gürdin, 2017: 42). In Turkey, the MTV base is determined as fixed or proportional amounts based on the age, engine displacement or electric power and prices of motor vehicles in tariff I, the type, age, weight and seat of the motor vehicle and electric power (kW) in electric vehicles in tariff II, and the age and weight of the motor vehicle in tariff IV (MTV Law Art. 5-6). Since the MTV does not include emission amount, greenhouse gas or carbon emissions among the elements that constitute the tax base, it can be said that there is no direct relationship between MTV and environmental protection.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

1.2.2. Taxes, fees and contributions to expenditures levied in accordance with the Law on Municipal Revenues

Regulations pursuant to the Law on Municipal Revenues consist of electricity and air gas consumption tax, fees and participation shares in expenditures and solid waste fees. These regulations are not directly aimed at protecting the environment but indirectly have a positive impact on the environment.

Electricity and Gas Consumption Tax

No. 2464 is a tax collected by municipalities in accordance with the Municipal Income Law. Although the purpose of this tax is not directly environmental protection, it is accepted as an indirect environmental tax that can be considered within the scope of energy taxes. According to the Law on Municipal Revenues, this tax is levied on electricity and air gas consumption costs. In this context, the tax is collected with the sales price by the organisations distributing electricity and gas and paid to the municipality by these organisations. Electricity and Gas Consumption Tax is applied as 5% of the sales price of gas and 1% of the electricity sales price.

Solid Waste Fee

Domestic solid waste collected by municipalities in Turkey from water subscribers through water collection receipts. Regarding the regulation of the municipal solid waste fee in 2010. The Regulation on the Procedures and Principles to be followed in Determining the Tariffs of Wastewater Infrastructure and Municipal Solid Waste Disposal Facilities was put into force in 2010. In the relevant regulation, it is stated that the purpose of collecting solid waste fee is to realise the activities of wastewater infrastructure facilities and municipal solid waste disposal facilities.

Fees and Expenditure Participation Fee Collected Pursuant to the Municipal Law

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Fees and participation share to be collected by municipalities are listed in the Law No. 2464 on Municipal Revenues. Although there are no regulations directly related to the protection of the environment among these fees and contribution to expenditures, there are various fees and contribution to expenditures, the main purpose of which is to generate revenue and which are also considered to contribute to the protection of the environment, albeit indirectly. An example of such fees is the spring water fee. Examples of expenditure participation fees are sewerage and water expenditure participation fees.

1.2.3. Regulations to the Environmental Law

Administrative Fines Imposed Pursuant to the Environmental Law

Pursuant to Article 8 of the Environmental Law titled 'prohibition of pollution', it is prohibited to carry out activities that will directly or indirectly harm the environment in violation of the standards and methods set out in the relevant regulations. In order to enforce these prohibitions, the Environmental Law imposes several material and formal obligations on individuals and institutions regarding the protection of the environment and the elimination of pollution. Failure to comply with these obligations is considered as a misdemeanour under the Environmental Law and administrative fines are imposed. Article 20 of the Environmental Law stipulates administrative fines in different amounts for a wide range of different offences.

Environmental Pollution Contribution Fee

In Turkey, with the amendment of the law in 2006, the 'environmental pollution prevention fund' was abolished and replaced by environmental pollution contribution share. The purpose of the environmental pollution contribution fee is stated in the relevant law as preventing environmental pollution, improving the environment and supporting environmental investments. For this purpose, environmental pollution contribution fee is levied at the rate of one per cent of the CIF value of fuels and wastes subject to control permitted for import and five per cent of the CIF value of scrap. In

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

addition, one percent of the water and wastewater removal fee collected by metropolitan municipalities water and sewerage administrations is collected as environmental contribution fee. (Environmental Law Art. 18).

Recycling Participation Fee

Plastic material is used in many areas of people's daily lives. However, most of the plastic materials produced are used in the production of disposable products. This situation causes an increase in the number of plastic materials in nature and causes significant harmful effects on the environment (Turna, 2021: 248). Unlike other wastes, the spontaneous extinction time of plastic bags in nature is quite long, and the fact that they are broken into pieces and added to the soil, water and food chain can have significant harmful consequences for all living things in nature. For this reason, many countries prefer taxing, charging or banning single-use plastic products in order to minimise the harmful effects on nature by reducing the use of plastic products (Ertekin and Dam, 2020: 76-77; Şahin, 2020: 112). In this context, in Turkey in 2018, with the 'Law on Amendments to the Environmental Law and Certain Laws', additional article 11 was added to the Environmental Law and the practice of charging plastic products and environmentally harmful products under the name of 'recovery participation fee' was started to be implemented as of 2019.

Plastic bags, batteries, mineral and vegetable oils, electrical and electronic equipment, pharmaceuticals and packaging are covered by the recycling participation fee. The recycling participation fee is to be paid 'from the points of sale for plastic bags among the products in the list (1), and from the marketers or importers for other products. Points of sale, marketers or importers fulfil their obligations by paying a certain amount per unit. These lump sum amounts are applied each year by increasing the previous year's lump sum amount by the revaluation rate. Recycling participation fees are declared to the tax office to which the relevant persons are affiliated in terms of income or corporate tax until the end of the twenty-fourth day of the month following the date the product is placed on the market or imported, and by those who are not liable for income or corporate tax, to the tax office to be determined by the Revenue Administration and paid until the end of the same month (Environmental Law, additional article. 11). Regarding the recovery

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

contribution fee, those who are found to have not paid the recovery contribution fee in violation of the Environmental Law will be subject to an administrative fine of 20% of the contribution fee. In addition, those who do not comply with the procedures and principles determined by the ministry are subject to administrative penalties in accordance with the Environmental Law (Art. 20/z of the Environmental Law).

Bag Fee

In addition to charging a fee under the recovery participation share to those who market plastic bags, to manage resources efficiently and prevent environmental pollution caused by plastic bags, additional article 13 of the Environmental Law requires users who buy plastic bags from points of sale to pay a bag fee. The bag fee has been introduced only for plastic bags among the products covered by the recycling contribution share. It can be concluded that the legislator's inclusion of only plastic bags within the scope of the fee aims to 'limit the use of individual plastic bags due to the fact that the harmful effects of plastic wastes on the environment are increasing day by day as people frequently use plastic bags in their daily activities, whether necessary or unnecessary'. As a matter of fact, with this regulation, plastic bag sales points can reflect some or all of the recovery contribution fee they pay to the consumer. The base fee for plastic bags is determined by a commission to be established by the Ministry of Environment and Urbanisation and is updated every year. For the year 2025, the base bag fee for the user or consumer is determined as 50 kurus, while the bag sales points in 2025 will pay 86 kurus recovery participation fee. Therefore, bag sales points will collect 50 kurus of the 86 kurus recovery participation fee from consumers or users, while they will bear the remaining 36 kurus bag cost themselves. In addition, the Environmental Law stipulates that those who sell plastic bags free of charge or produce plastic bags contrary to the standards determined by the Ministry will be subject to administrative fines in accordance with the Environmental Law (Article 20/z-bb of the Environmental Law).

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Environmental Labelling

Environmental labelling is one of the regulations introduced to protect the environment, human, health, climate and natural life. In line with sustainable environmental targets, it refers to a label that shows that the negative effects of a product or service on the environment are reduced throughout the entire life cycle of the product or service from the raw material procurement process to the disposal of the product or service. In simpler terms, it is the label that shows that the product or service is environmentally friendly (Karaca, 2019: 73). With the environmental labelling application, it is aimed to raise awareness about environmentally sensitive products by providing accurate and scientifically based information to citizens, and to encourage environmentally sensitive enterprises by considering low carbon emissions, waste prevention, energy efficiency, water saving and harmful chemicals in products and services. Since the application is voluntary and covers the product and service groups determined by the Ministry, enterprises are not obliged to use environmental labels.

Deposit

With the regulation introduced by the additional article 12 of the Environmental Law, those who carry out the sales of products covered by the deposit are obliged to participate in the deposit application collection system for packaging and products to be determined by the Ministry. Producers, importers and marketers of the products subject to mandatory deposit application and wholesale or retail sales units that offer the products covered by the deposit to consumers/users are obliged to fulfil their administrative, financial and technical obligations for the establishment, operation and monitoring of the deposit system. Those who fail to fulfil these obligations are subject to administrative fines in accordance with the Environmental Law (Article 20/z-ee of the Environmental Law).

Motor Oils

To eliminate the impact of waste oils on environmental pollution and to ensure the reuse of waste oils, it is obligatory to change motor oil by the places authorised by the Ministry of Environment and

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Urbanisation or to deliver waste motor oils to these places. Those who do not comply with this obligation are subject to administrative fines in accordance with the Environmental Law (Art. 20/z-dd of the Environmental Law).

1.3. Incentives

In Turkey, there are incentive mechanisms scattered in various laws for environmental protection. These incentive mechanisms generally consist of tax incentives, incentives for energy efficiency and emission trading. However, since tax incentives are explained under the heading of other regulations as regulations that indirectly have positive effects on the environment, they are not mentioned here.

1.3.1. Energy Saving and Efficiency and Renewable Energy Incentives

Energy efficiency is the reduction of energy consumption per unit or per product quantity without leading to a decrease in the standard of living and quality of service in buildings and the quality and quantity of production in industrial enterprises.

Energy efficiency policies are one of the areas that need to be handled sensitively due to its direct link with the sustainability of economic growth and social development targets and its critical role in reducing greenhouse gas emissions. In this context, energy saving and efficiency policies in Turkey are one of the basic building blocks of national climate and energy policies. The realisation of energy saving and efficiency policies has various objectives such as ensuring Turkey's energy supply security, reducing external dependency, protecting the environment and achieving the 2053 net zero target.

Productivity Enhancing Project (VAP) Support Program

It is a program covering the support of energy efficiency implementation projects of real and legal persons in all sectors from energy production to final consumption over the investment amounts. Projects on increasing energy efficiency through methods such as replacement of energy-consuming

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

inefficient equipment (fans, pumps, boilers, furnaces, compressed air systems, steam traps, electric motors, etc.), rehabilitation and process regulation, heating and cooling systems, waste energy recovery, cogeneration systems where heat and electricity are produced simultaneously, and heat generation based on renewable energy sources are within the scope of the support program.

Energy and Carbon Reduction (EKA) Support Program

This program covers the support of energy expenses for the year specified in the criteria if the applicants reduce one of the energy intensity, carbon intensity or specific energy consumption criteria compared to the current situation within the framework of the criteria determined by the Ministry.

Fifth Region Incentives

In order to encourage long-term investments of industrialists, energy efficiency investments designed to save at least 15% of energy compared to the current situation, to be realized in existing manufacturing industry facilities with a minimum annual energy consumption of 500 TOE, based on the project approval to be given by the Ministry of Energy and Natural Resources, will benefit from the incentives provided for investments to be made in the fifth region, regardless of the region where they will be made. The incentives to be benefited from are value added tax exemption, customs duty exemption, tax reduction, insurance premium employer's share support, interest support and allocation of investment space.

Renewable Energy Incentives

To increase the share of renewable energy resources in total electricity generation and resource diversity, incentive mechanisms such as the Renewable Energy Support Mechanism (YEKDEM), support for domestically manufactured components used in facilities generating electricity from renewable energy resources (Domestic Components) and Renewable Energy Resource Areas (YEKA)

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Model incentive mechanisms were used. These incentives are explained by the Ministry of Energy and Natural Resources of the Republic of Turkey as follows:

YEKDEM: As in many European countries, YEKDEM is a support mechanism that has emerged to support renewable energy production in order to reduce fossil fuel energy production in the short term and to bring it to a point close to completion in the long term. The renewable energy generation sources that are considered within the scope of YEKDEM in Turkey are HEPP (Hydroelectric), GPP (Geothermal), WPP (Wind), SPP (Solar) and BES (Biogas and Biomass).

Domestic Component: refers to the support given to the components and/or integrative parts that make up the components used in facilities that generate electricity from renewable energy sources by being manufactured domestically. The conditions for this support are regulated by the Regulation on Supporting Domestic Components Used in Facilities Generating Electrical Energy from Renewable Energy Sources.

Yeka Model: These are special areas allocated for renewable energy projects, the characteristics and critical elements of which are determined by law. It is the effective and efficient use of renewable energy resources by creating large-scale renewable energy resource areas (YEKA) on public and treasury immovables and privately owned immovables, and the rapid realization of investments by allocating these areas to investors.

1.3.2. Green Transformation Support Program

A green transformation support program was established in 2023 to support resource-efficient and low-carbon investments that are compatible with the circular economy approach, conserve natural resources and contribute to climate and sustainability goals. This program covers capital companies resident in Turkey, production facilities and auxiliary units operating in the manufacturing industry, and priority investments. Accordingly, support is provided for land-land purchase, building-construction expenditures, machinery, equipment, technology, software and hardware purchases, measurement, survey, testing and consultancy services for one or more of the green transformation

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

practices. In addition to tax reductions, interest or profit share support and insurance premium employer's share support are also provided.

1.3.3. Emission Trading System

The Emissions Trading System is a trading system where carbon emission rights given to businesses can be traded through the cap-and-trade system. In Emission Trading Systems, businesses can trade carbon with each other. Emission trading systems are operated on a market basis, not on a project basis. Emissions Trading System can be briefly defined as trading carbon emissions through barter. In the emission trading system, the trade is made over carbon allowances. The purpose of emission trading systems is to reduce greenhouse gas emissions caused by energy-intensive enterprises. This system is used by governments and international organizations as part of their environmental policies. The ETS gives companies the right to emit a certain amount of carbon and aims to achieve environmental goals by making it possible to trade these rights.

As a result of the emission limitations imposed on countries by the Kyoto Protocol, countries have started to establish the Emissions Trading System. The purpose of the emission trading system is to ensure that countries do not exceed the limit set by the United Nations. If countries exceed the emission limit, the allowance to be transferred to the United Nations climate change fund will be provided from the emission trading system. Turkey's Emissions Trading System is among the Emissions Trading Systems in the establishment phase. The target date for the commissioning of emission trading in our country is 2025. "Draft Regulation on Turkish Carbon Markets" was published for the first time in relation to the Turkish Emissions Trading System.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUSTAINABLE GREEN FINANCING AND SOCIAL RESPONSIBILITY

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

2.1. EU Taxonomy for Sustainable Activities

Turkey is in the process of developing a regulatory framework like the EU Taxonomy for sustainable activities. The Draft Regulation on Türkiye's Green Taxonomy[3], published in October 2024, aims to establish a comprehensive framework for identifying and promoting environmentally sustainable economic activities. This initiative seeks to align Türkiye's sustainability efforts with international standards, particularly the European Union's Green Taxonomy, and to support the country's transition to a low-carbon economy.

This draft regulation defines the Green Taxonomy as a classification system establishing principles and criteria for economic activities that contribute to climate finance mobilization and combat climate change, aligning with environmental goals. It identifies six environmental objectives:

1. Reduction of greenhouse gas emissions
2. Climate change adaptation
3. Sustainable use and protection of water and marine resources
4. Transition to a circular economy
5. Pollution prevention and control
6. Protection and restoration of biodiversity and ecosystems

For an economic activity to be considered sustainable under this taxonomy, it must make a substantial contribution to at least one of these objectives, do no significant harm to the others, adhere to minimum social safeguards, and meet specific technical screening criteria.

This initiative is part of Türkiye's broader efforts to align with international sustainability standards and promote green finance. The Green Taxonomy aims to provide a common language and clear criteria to identify environmentally sustainable investments, supporting economic activities aligned with sustainable development goals, promoting green finance, ensuring market transparency, and advancing harmonization with the EU Taxonomy.

[3] For further information on Draft Regulation on Türkiye's Green Taxonomy (in Turkish), please look at: https://tls.tc/U8JpZ

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

As of March 2025, the Draft Regulation has been published for public consultation, and stakeholders are encouraged to provide feedback to refine and finalize the framework. Once implemented, this regulation will serve as a cornerstone in Türkiye's transition to a sustainable economy, guiding investments and economic activities towards environmental sustainability.

Scope and Objectives

The Draft Regulation applies to entities required to conduct sustainability reporting under Türkiye's Sustainability Reporting Standards (TSRS). Its primary objectives include supporting economic activities aligned with sustainable development goals, promoting green finance, ensuring market transparency, and preventing greenwashing.

Criteria for Taxonomy Compliance

For an economic activity to be considered taxonomy-compliant, it must meet the following criteria:

1. **Substantial Contribution**: The activity must make a significant contribution to at least one of the six environmental objectives, mentioned above.
2. **Do No Significant Harm (DNSH)**: The activity must not significantly harm any of the other environmental objectives.
3. **Minimum Social Safeguards**: Compliance with social security measures and human rights principles, as outlined in international declarations and guidelines, is required.
4. **Technical Screening Criteria**: The activity must meet specific technical criteria established for each environmental objective.

Eligible Economic Activities

The Draft Regulation outlines various sectors considered eligible for taxonomy compliance, including:

- Forestry
- Environmental protection and restoration
- Manufacturing
- Energy
- Water supply, sewerage, waste management, and remediation

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- Transportation
- Construction and real estate
- Information and communication
- Agriculture
- Tourism
- Arts, entertainment, and recreation
- Financial and insurance
- Human health and social work

These sectors are detailed in Appendix-1 of the Draft Regulation.

Reporting and Verification Requirements

Entities obligated under the TSRS must annually report their taxonomy-aligned economic activities. This involves:

- **Reporting**: Submitting verified information about compliant economic activities from the previous year to the Directorate of Climate Change's online taxonomy system, alongside their sustainability reports.
- **Verification**: Ensuring that reported information is validated and accurate through internal and external verification processes. [4]

Failure to fulfill these reporting obligations may result in administrative fines in accordance with Environmental Law No. 2872.

Implementation Timeline

The reporting obligation is set to commence on January 1, 2027. However, entities may opt for voluntary reporting until December 31, 2026.

[4] "Preparation of Guidelines for Reporting and Identification of Users and Beneficiaries of Green Taxonomy in Türkiye, " Republic of Türkiye Ministry of Environment, Urbanization and Climate Change, Directorate of Climate Change, (Accessed from: iklim.gov.tr)

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

By establishing clear criteria and reporting mechanisms, the Draft Regulation aims to facilitate the identification of environmentally sustainable investments, promote green finance, and enhance market transparency in Türkiye.

2.2. Sustainability reporting

The evolution of sustainability reporting in the EU has progressed through several key legislative steps:

1. **2001 – EU Sustainability Strategy**: The EU introduced its first sustainability policy framework, encouraging corporate social responsibility (CSR) and voluntary sustainability reporting.
2. **2014 – Non-Financial Reporting Directive (NFRD) (Directive 2014/95/EU)**: Large companies (500+ employees) were required to disclose non-financial information on environmental, social, and governance (ESG) matters.
3. **2022 – Corporate Sustainability Reporting Directive (CSRD) (Directive (EU) 2022/2464)**: Expanded reporting requirements to 50,000+ companies, including SMEs and non-EU firms with significant EU operations. Introduced the European Sustainability Reporting Standards (ESRS) for standardized disclosures.
4. **2024 – Corporate Sustainability Due Diligence Directive (CSDDD) (Directive (EU) 2024/1760)**: Imposed mandatory due diligence obligations on large EU and non-EU companies regarding human rights and environmental impacts across value chains.

The Corporate Sustainability Due Diligence Directive (CSDDD), officially known as Directive (EU) 2024/1760, is the latest European Union (EU) regulation which aims to ensure that companies operating within the EU integrate human rights and environmental considerations into their operations and value chains. This directive amends Directive (EU) 2019/1937 and Regulation (EU) 2023/2859.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

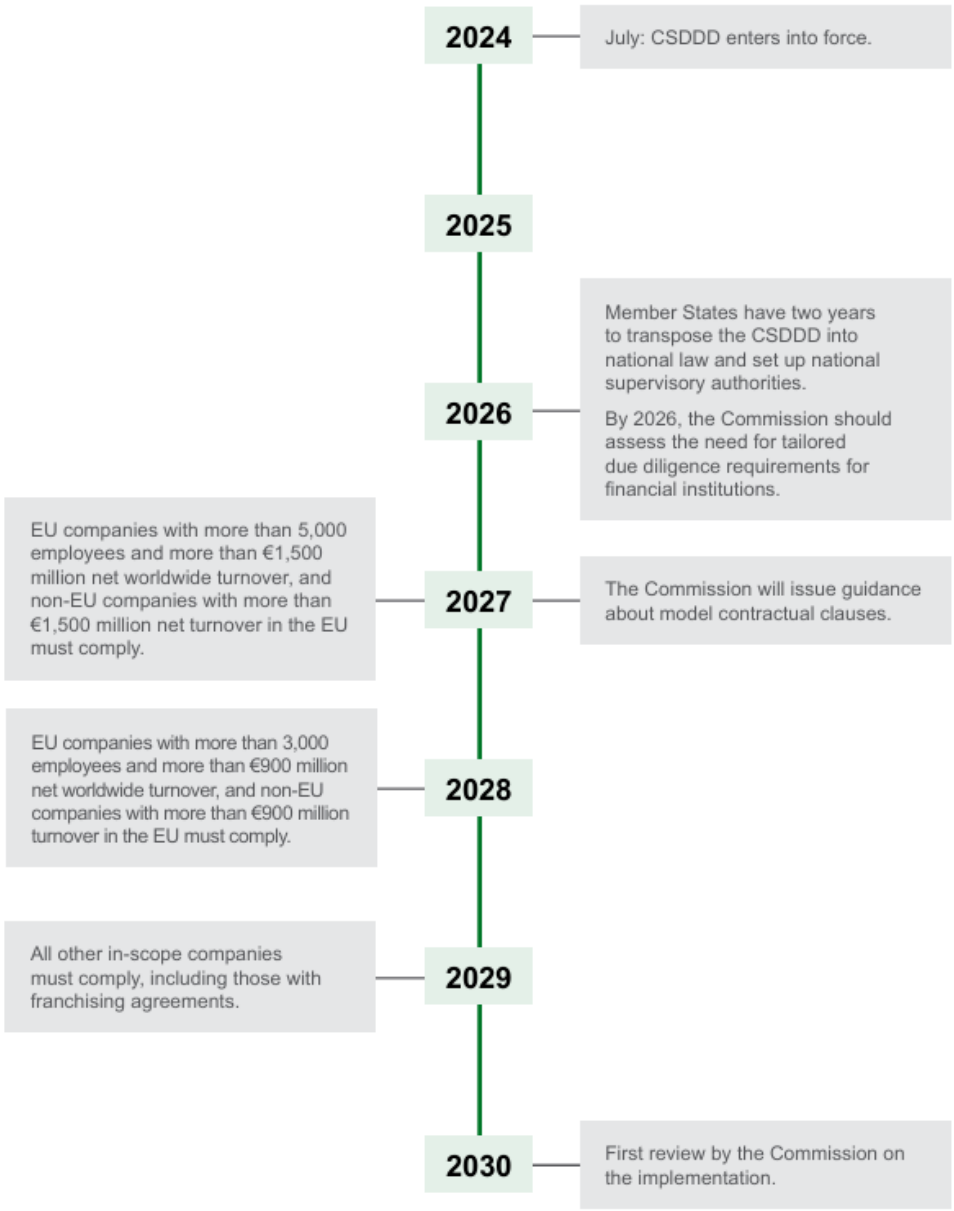
Table 5. The Scope of CSDDD

	Employee Threshold	Turnover Threshold
EU Companies	More than 1,000 employees average	More than €450 million turnover worldwide
Non-EU Companies	N/A	More than €450 million turnover in the EU
Franchised Companies (EU)	More than 1,000 employees average	More than €80 million net worldwide turnover, and generating royalties of more than €22.5 million
Corporate Due Diligence	N/A	More than €80 million net turnover in the EU, and generating royalties of more than €22.5 million in the EU

The EU's Corporate Sustainability Due Diligence Directive (CSDDD) introduces significant obligations for companies to ensure responsible business conduct and sustainability. This directive's extra-territorial scope means it also affects non-EU countries like Türkiye, particularly those with strong economic ties to the EU market. The CSDDD requires companies in Türkiye with substantial operations in the EU to identify, prevent, and mitigate adverse human rights and environmental impacts across their supply chains. Chart 1. below indicates the implementation timeline of CSDDD with the expanded scope of companies and sectors.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Chart 1. The Implementation Timeline of the CSDDD



Source: Latham & Watkins (LLP), "The EU's Corporate Sustainability Due Diligence Directive — Obligations for Companies" (2024) https://www.lw.com/admin/upload/SiteAttachments/The-EUs-Corporate-Sustainability-Due-Diligence-Directive-Obligations-for-Companies.pdf

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Türkiye's Compliance with Corporate Sustainability Reporting

Given the EU's influence on global sustainability reporting and due diligence obligations, some companies operating in Türkiye will be directly subject to CSRD, while others will be indirectly impacted due to their commercial relationships with EU businesses (e.g., as part of supply chains). Companies in Türkiye supplying EU-based firms may be required to provide sustainability data to facilitate compliance with CSRD reporting obligations.

To align with global sustainability reporting frameworks, Türkiye has taken significant steps toward developing its own national sustainability reporting standards. With the amendment to the sixth paragraph added to **Article 88 of the Turkish Commercial Code No. 6102** with the amendment made by the Official Gazette dated June 4, 2022 and numbered 31856, the Public Oversight Accounting and Auditing Standards Authority (KGK) was granted the authority to establish and publish Türkiye's Sustainability Reporting Standards (TSRS). The latest updates and detailed information regarding these standards are accessible via KGK's official website.[5]

In this context, the KGK has translated and adopted the International Sustainability Standards Board's (ISSB) IFRS S1 (General Requirements for Disclosure of Sustainability-related Financial Information) and IFRS S2 (Climate-related Disclosures) into Turkish. Furthermore, Türkiye has incorporated International Auditing and Assurance Standards Board (IAASB) guidance on sustainability-related assurance engagements, including ISAE 3410 (Assurance on Greenhouse Gas Statements) into its regulatory framework.

Following the formal licensing agreement signed between KGK and ISSB in June 2023, Türkiye finalized the adoption of these sustainability disclosure standards through **the Official Gazette Decision No. 32414**, **dated December 29, 2023**, which outlines the scope of Türkiye's Sustainability Reporting Standards (TSRS) implementation.

"Sustainability Reporting" has been made mandatory as of 01/01/2024 for companies that exceed the threshold values of at least two of the following criteria in two consecutive reporting periods.

Threshold values determined within the scope of TSRS:

- Number of employees 250 people

[5] https://www.kgk.gov.tr/Home

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- Total assets: 500 Million Turkish Lira
- Annual net sales revenue: 1 Billion Turkish Lira

Although not mandatory, out-of-scope entities may also voluntarily report in accordance with the TSRS, and in-scope entities are obliged to report their sustainability performance in more detail and to present information in accordance with TSRS standards. This regulation aims to encourage more transparent and comprehensive reporting on sustainability by institutions that have a significant impact in terms of financial size, income level and number of employees.

In addition, with **the Decree published in the Official Gazette dated September 5, 2024 and numbered 32653**, assurance audits on sustainability reporting became mandatory and it was decided that assurance audits will start with limited assurance in order to increase the reliability and international validity of sustainability reports. Currently, sustainability assurance audits are conducted **under GDS 3000** (Assurance Engagements Other than Independent Audits or Review Engagements of Historical Financial Information) and **GDS 3410** (Assurance Engagements on Greenhouse Gas (GHG) Disclosures), which serve as interim standards until the publication of **SGDS 5000**, Türkiye's official sustainability assurance standard.

Current Assurance Standards

1. GDS 3000 – Assurance Engagements Other than Independent Audits or Review Engagements of Historical Financial Information

- This standard provides a framework for assurance engagements beyond traditional financial audits.
- It applies to sustainability reports, ESG disclosures, and other non-financial corporate reporting.
- It ensures the credibility and reliability of sustainability data presented by companies.

2. GDS 3410 – Assurance Engagements on Greenhouse Gas (GHG) Disclosures

- This standard specifically addresses the verification and assurance of corporate GHG emissions reports.
- It ensures compliance with national and international GHG accounting frameworks.
- It enhances transparency and accountability in reporting climate-related impacts.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Türkiye is in the process of developing **SGDS 5000**, an official national standard for sustainability assurance audits. Once enacted, it will provide a unified and comprehensive framework tailored to Türkiye's regulatory environment, ensuring consistency in sustainability assurance practices across industries. Until **SGDS 5000** is officially implemented, corporate sustainability assurance in Türkiye will continue to follow **GDS 3000** and **GDS 3410** standards. This evolving framework reflects Türkiye's commitment to enhancing corporate transparency, environmental accountability, and compliance with global sustainability assurance practices.

2.3. Guidelines in Sustainable Finance

Key guidelines and regulations in sustainable finance in Türkiye are:

1. Sustainability Principles of the Banking Sector (2021) – BRSA

Issued by the **Banking Regulation and Supervision Agency (BRSA)**, these principles set out the sustainability framework for banks operating in Türkiye.

- Encourages banks to integrate ESG risks into their risk management strategies.
- Requires financial institutions to develop sustainable lending policies.
- Supports the financing of green and sustainable projects.

2. Green Bond and Sustainable Debt Instrument Guidelines (2022) – CMB

Published by the **Capital Markets Board (CMB)**, this guideline regulates the issuance of **green, social, and sustainability-linked bonds** in Türkiye.

- Defines eligibility criteria for sustainable debt instruments.
- Establishes transparency and reporting requirements for issuers.
- Aligns with the **International Capital Market Association (ICMA) Green Bond Principles**.

3. Türkiye's Sustainable Banking Strategy (2021) – TBB

The **Banks Association of Türkiye (TBB)** issued this roadmap to encourage sustainable banking practices.

- Recommends integrating climate risks into financial decision-making.
- Promotes financing mechanisms for renewable energy and low-carbon projects.
- Supports ESG reporting and risk management among financial institutions.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

4. Environmental and Social Risk Management (ESRM) Framework for Banks

- Encourages banks to conduct environmental and social risk assessments in their lending decisions.
- Introduced by **BRSA** and **TBB** to align with **IFC Performance Standards**.

5. Türkiye Green Taxonomy (Draft – Expected in 2024-2025)

- Modeled after the **EU Taxonomy**, this framework will define green and sustainable economic activities.
- Aims to prevent greenwashing and standardize sustainable investments.

6. Green Economy Action Plan (2021)

- Developed by the **Ministry of Treasury and Finance**, this plan aims to strengthen sustainable finance policies.
- Encourages **green public-private partnerships (PPPs)** and sustainability-linked lending.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

GREEN ENVIRONMENT AND AGRIFOOD

3.1. Water management

Water management in Türkiye is governed by a complex legal framework, with various national ministries and executive bodies overseeing its implementation. While some legislation dates back to the early years of the Republic, growing water demand and diminishing supply have necessitated new regulations and reforms. A **Draft Water Law** is currently pending approval, aiming to provide a more comprehensive and modern approach to water governance, addressing sustainability and efficiency challenges.

Key Water Regulations are;

Law on Groundwater (Law No. 167) – Regulates the extraction and conservation of groundwater resources.

Regulation on the Protection of Wetlands – Establishes sustainable water use principles, particularly in agriculture.

Regulation on Water Pollution Control (2004) – Defines measures to prevent agricultural water pollution.

Regulation on Irrigation Unions (2017) – Governs the management of irrigation systems to ensure efficient water use.

National Water Strategy and Policy Developments

During the 3rd National Water Council Meeting, Ministry of Agriculture And Forestry highlighted the increasing threat of climate change on water resources, emphasizing that access to clean water has become a national security issue. Türkiye is implementing critical initiatives to enhance water efficiency across multiple sectors, including agriculture, industry, energy, and tourism.

Key strategic actions include:

Water-centered agricultural production planning

Expansion of modern irrigation systems

AI-supported irrigation automation

Drought forecasting and early warning systems

Flood hazard and risk mapping

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Flood forecasting and early warning systems

3.2. Agriculture and Biodiversity

Türkiye is implementing a range of legal and policy measures to harmonize agriculture with green sustainability principles, focusing on biodiversity protection, mitigating the negative impacts of intensive agriculture, and adapting to climate change. The **National Agricultural Strategy Plan** and **Türkiye's National Biodiversity Strategy and Action Plan (NBSAP)** outline the country's vision for sustainable agriculture, biodiversity conservation, and rural development. These strategic plans align with global sustainability goals and aim to ensure food security while preserving the country's rich natural resources.

In line with international commitments such as the Paris Agreement and the European Green Deal, Türkiye is working towards transitioning to a smart, sustainable, competitive, and resilient agricultural sector. The **Strategic Plan of Türkiye's Agriculture and Rural Development 2021-2025** supports climate action, protection of natural resources, and biodiversity enhancement while strengthening the socio-economic fabric of rural communities.

Key Regulations and Laws

- **Agriculture Law (Law No. 5488)**: Defines sustainable agricultural production, rural development, and food security policies.
- **Organic Agriculture Law (Law No. 5262)**: Regulates organic farming standards, production, certification, and incentives for organic agriculture.
- **Environmental Law (Law No. 2872)**: Provides a legal framework for biodiversity conservation, pollution control, and environmental impact assessment.
- **Law on Soil Conservation and Land Use (Law No. 5403)**: Ensures sustainable land use and soil protection to prevent erosion and degradation.
- **Seed Law (Law No. 5553)**: Regulates the production, certification, and trade of seeds, including conservation of genetic diversity.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- **Pasture Law (Law No. 4342)**: Governs the management and use of pastures for sustainable livestock grazing.
- **Law on Veterinary Services, Plant Health, Food and Feed (Law No. 5996)**: Establishes hygiene, food safety, and environmental standards in agricultural production.
- **Fisheries Law (Law No. 1380)**: Regulates sustainable fisheries management and marine biodiversity protection.
- **Water Law** (Draft under discussion): Aims to provide an integrated approach to water resource management, including irrigation and agricultural water use.

Biodiversity Protection and Conservation

Biodiversity protection is anchored in the **Environmental Law (Law No. 2872)** and the **Biodiversity Strategy and Action Plan**, which provide a legal framework for conserving natural ecosystems, protecting endangered species, and ensuring sustainable resource management. Türkiye is also part of the **Convention on Biological Diversity (CBD)** and has integrated biodiversity conservation into its agricultural policies.

Additional regulations include:

- **Regulation on the Protection of Wetlands (Official Gazette No. 25818, 2005)**: Protects wetlands as critical habitats for biodiversity.
- **Regulation on the Identification, Registration, and Monitoring of Genetically Modified Organisms and Their Products (Official Gazette No. 27533, 2010)**: Controls the use of GMOs in agriculture.
- **National Forestry Program (2020-2034)**: Supports reforestation, sustainable forest management, and biodiversity conservation.
- **Regulation on Nature Protection Areas (Official Gazette No. 30281, 2017)**: Establishes protected areas and defines management rules for biodiversity conservation.

Climate Change and Sustainable Agriculture

To further enhance environmental resilience, Türkiye is implementing the **National Climate Change Strategy and Action Plan**, which includes cross-sectoral measures such as reforestation, sustainable

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

land use practices, and support for climate-smart agriculture. The strategy also emphasizes genetic diversity conservation through the **National Plant Gene Bank** and related programs aimed at preserving indigenous plant varieties.

Key regulations supporting climate adaptation include:

- **Regulation on Good Agricultural Practices (Official Gazette No. 27778, 2010)**: Encourages sustainable farming techniques that reduce environmental impact.
- **Climate Change Action Plan (2011-2023)**: Provides sector-specific measures to adapt agriculture to climate change.
- **National Adaptation Strategy and Action Plan (2011)**: Focuses on water resources, soil conservation, and biodiversity protection.

Sustainable Rural Development

Türkiye's efforts to enhance rural sustainability are guided by the **Rural Development Strategy (2021-2027)** and supported by funding mechanisms such as:

- **IPARD (Instrument for Pre-Accession Assistance for Rural Development)**: Provides financial support for sustainable agriculture projects.
- **Regulation on Rural Development Supports (Official Gazette No. 32061, 2023)**: Defines incentives for organic farming, irrigation efficiency, and eco-friendly agricultural practices.

Overall, Türkiye's legal and policy framework for agriculture and biodiversity aligns with international and regional sustainability standards. The country continues to strengthen its integrated management approach to effectively protect its rich biological diversity and ensure long-term ecological resilience for future generations.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUSTAINABLE URBAN DEVELOPMENT AND SMART CITIES

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

4.1. Regulatory Framework for Smart Cities

For the European Union (EU), the development of smart cities, their sustainability, digital updates and the integration of citizens into smart cities are important. Although Turkey is not an EU member country, it is a European country that has applied for full membership to the EU and has fulfilled many EU acquis for the completion of its membership. In this context, Turkey has initiated a digital transformation for its cities, with a particular focus on smart cities and sustainability.

In Turkey, the policies of the central government and local governments have gained importance for the realization of the smart city vision, and legal grounds have been created for the implementation of these policies. For example, the Ministry of Environment, Urbanization and Climate Change (formerly the Ministry of Environment and Urbanization) established the Department of Smart Cities and Geographical Technologies within the General Directorate of Geographical Information Systems, giving smart cities an institutional structure and policy ownership in Turkey (T.C. Ministry of Environment and Urbanization, n.d.). Considering that smart cities and sustainability are mutually supportive practices in terms of their goals, the Sustainability Standards Department was established in Turkey. The mission of the Department is to increase confidence, comparability and transparency in sustainability reporting by developing and promoting internationally recognized reporting and assurance standards. The Department is legally based on the Decree Law on the Organization and Duties of the Public Oversight, Accounting and Auditing Standards Authority and the amendment to the Turkish Commercial Code (Public Oversight Authority, n.d.).

4.1.1. Constitution of the Republic of Turkey 1982

Article 56 under the title of Social and Economic Rights and Duties in Chapter 3 of the Constitution of the Republic of Turkey, directly commands health services and environmental protection. In this context, Article 56 states that everyone has the right to live in a healthy and balanced environment and that it is the duty of the state and citizens to improve the environment, protect environmental health and prevent environmental pollution (Turkish Constitution, 1982).

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

4.1.2. Energy Efficiency Law No. 5627

One of the objectives of the Law is the protection of the environment. In this context, Article 1 of the Law states that "the purpose of this law is to increase efficiency in the use of energy resources and energy in order to use energy effectively, prevent waste, alleviate the burden of energy costs on the economy and protect the environment". Smart cities come to the forefront especially in terms of energy saving (Official Gazette, 2007/ Number: 26510). The implementation of this law is seen with the Smart Street Lighting Application in Smart Cities. Thanks to this application, it is aimed to make lighting covering large areas such as ring roads, avenues, boulevards, streets, parks, open or closed parking lots, campuses and shopping malls more efficient and economical by controlling them with a central system (Republic of Turkey Ministry of Environment, Urbanization and Climate Change, 2024). Within the scope of energy efficiency, Turkey has adopted the "Energy Efficiency 2030 Strategy and II. National Energy Efficiency Action Plan (2024-2030)" (Republic of Turkey Ministry of Energy and Natural Resources, 2024). It takes its legal basis from the Energy Efficiency Law No. 5627 (Republic of Turkey Ministry of Energy and Natural Resources, 2024:11). During the implementation period of the I. National Energy Efficiency Action Plan covering the period between 2017-2023, it was stated that the energy savings achieved in the transportation sector was provided to local governments within the scope of the construction of bicycle paths, green walking paths, environmentally friendly streets and noise barriers, and it was also stated that the number of smart stops in 30 metropolitan municipalities exceeded 11 thousand and the length of existing bicycle paths exceeded 2 thousand km (Republic of Turkey Ministry of Energy and Natural Resources, 2024: 35). Plan II, on the other hand, focused on energy efficiency, especially in the transportation sector, within the scope of the smart city.

4.1.3. Sustainability and Smart City in the Development Plans of the Republic of Turkey

The Tenth Development Plan covering the years 2014-2018 directly emphasized the smart city concept. Article 656 of the Plan states that "urbanization and urban transformation will be handled

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

in an integrated manner with the manufacturing industry. In this framework, production and export capacity will be increased in areas such as smart buildings, building materials, public transportation vehicles and signalling systems", emphasizing the procurement of the necessary equipment for the creation of smart cities (Republic of Turkey Ministry of Development, 2013: 90). Article 731 under the heading of Information and Communication Technologies states that "the use of smart applications, especially in areas such as health, transportation, building, energy, disaster and water management, will be expanded. Cities will be supported to transform into smart cities by increasing their infrastructure, capacity and skill levels in the field of information and communication technologies" (Republic of Turkey Ministry of Development, 2013: 97). Article 841 under the heading of Logistics and Transportation deals with the traffic problem. The relevant article refers to the smart transportation component of the smart city in traffic control by stating that "The use of Traffic Electronic Control Systems will be expanded in an integrated manner with Intelligent Transportation Systems in line with the target of reducing the deaths due to traffic accidents by 50% in the Road Traffic Safety Strategy and Action Plan" (Republic of Turkey Ministry of Development, 2013: 111). For example, according to the situation analysis of this implementation, in many cities, especially metropolitan cities, infrastructure investments such as underpasses, overpasses, tunnels and bridges that increase highway vehicle mobilization and smart transportation and traffic management models such as Traffic Electronic Supervision System (TEDES) have increased average vehicle speeds on main arteries (Republic of Turkey Ministry of Development, 2013: 130). Likewise, Article 987 determines the policy of the smart city in the transportation dimension with the statement "information technologies and intelligent transportation systems will be effectively utilized in traffic management and public transportation services in urban transportation" (Republic of Turkey Ministry of Development, 2013: 131). It emphasized that smart bicycle networks should be established to increase energy efficiency in transportation and smart building technologies should be used to encourage domestic and innovative production in urban transformation (Republic of Turkey Ministry of Development, 2013: 177-197).

The Eleventh Development Plan, which covers the years 2019-2023, includes policies based on legal foundations for the smart city. Article 99 directly states that the National Smart City Strategy and Action Plan prepared in Turkey is a roadmap for local governments to become smart cities (Presidency

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

of the Republic of Turkey Strategy and Budget Directorate, 2019:13). Although not under the heading of city, Article 384 states that importance will be given to the development of critical technologies such as smart mobility, which can be considered as one of the smart city components that help regulate mobility in the city, albeit indirectly (Presidency of the Republic of Turkey, Presidency of Strategy and Budget Directorate, 2019: 85). Regarding energy, Article 493.1 states that smart grid applications will be increased and 493.3 states that the use of technological systems such as smart meters and remote reading will be expanded and inspections will be increased (Presidency of the Republic of Turkey, Presidency of the Republic of Turkey, Strategy and Budget Directorate, 2019: 113). Article 511.5 under the heading of logistics and transportation states that "the architecture related to Intelligent Transportation Systems (ITS), which ensure energy and time savings, traffic safety, and efficient use of road capacity on the road network, will be completed and put into practice in a way to include local governments" and refers to cooperation with local governments within the scope of the smart transportation component of the smart city (Presidency of the Republic of Turkey, Presidency of Strategy and Budget Directorate, 2019: 118). Under the Urbanization heading of the Plan, smart cities and local governments are emphasized more frequently. In this context, Article 683 states that "local governments will be encouraged to prepare smart city strategies and road maps to be followed, smart city projects will be selected and implemented by taking into account the areas and capabilities prioritized at the national level, and the development of domestic production for smart city applications will be supported". Article 683.1 emphasizes that the National Smart City Strategy and Action Plan will guide local governments in the creation of a smart city (Presidency of the Republic of Turkey Strategy and Budget Directorate, 2019: 160). 683.2 assessment and resource allocation constraints; 683.3. states that the use of domestic technology in smart city applications will be supported; and Article 683.4. emphasizes governance by stating that the smart city ecosystem will be analyzed and the stakeholders of the sector such as entrepreneurs, system developers and technology providers will be brought together on the digital platform to be created (Presidency of the Republic of Turkey, Presidency of Strategy and Budget, 2019: 160).

The vision, main objectives and principles of the current Twelfth Development Plan covering the years 2024-2028 include creating disaster-resilient living spaces and civilization-based smart, sustainable cities (Presidency of the Republic of Turkey Strategy and Budget Directorate, 2023: 51). The objective

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

under the heading of urbanization is described as “to create smart, safe, sustainable cities and settlements that are resilient to climate change and disasters, have qualified residential areas in harmony with their historical and cultural background, provide accessible urban services for all, have a high quality of life, and are based on green and digital technologies” (Presidency of the Republic of Turkey Strategy and Budget Directorate, 2023: 206). It is also stated under the heading that the use of smart cities will be expanded according to the unique character of each city, local governments will shape smart city applications according to local needs, the capacities of local governments to implement smart city applications will be increased, intelligent transportation systems (ITS) will be developed and ITS-compatible applications will continue to be installed with dynamic passenger, driver and pedestrian information systems and participatory national intelligent transportation system (Presidency of the Republic of Turkey, Strategy and Budget Directorate, 2023: 215).

4.2. Action Plans Implemented within the Scope of Smart Cities

The Smart City Project Fiche and Feasibility Study Guide (Republic of Turkey Ministry of Environment, Urbanization and Climate Change General Directorate of GIS, 2020) contains information on how to prepare smart city project applications. In the guide, it is emphasized that sustainability is important in making the application, and it is pointed out that the technologies used in smart cities should be sustainable in the environmental impact analysis (Republic of Turkey Ministry of Environment, Urbanization and Climate Change General Directorate of GIS, 2020:42). In addition, it was mentioned that applications that help keep the environment clean such as energy, conservation applications, garbage and irrigation automation should be integrated with the smart city within the framework of sustainability (Republic of Turkey Ministry of Environment, Urbanization and Climate Change General Directorate of GIS, 2020:42).

In the Integrated Urban Development Strategy and Action Plan, 2010-2023, it is stated that the need to increase innovation capacity in cities in line with sustainable urbanization, giving importance to inventiveness by taking advantage of technological developments and contributing to local development are among urbanization policies. To increase innovative urban capacity based on sustainable urbanization, it is emphasized that urban organizations and institutional structure should

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

be established for learning information and producing information and technology at all levels (Republic of Turkey Ministry of Environment, Urbanization and Climate Change, 2010: 10). The Plan includes a series of actions for the creation of smart cities. For example, Action 5.5.2. aims to increase the service quality and technological level of public transportation systems and identifies municipalities as responsible institutions (Republic of Turkey Ministry of Environment, Urbanization and Climate Change, 2010: 26). Action 5.5.3. emphasizes the adoption of environmentally friendly technologies in the selection of fuel and vehicle types used in public transport systems and again points to municipalities as the responsible institution (Republic of Turkey Ministry of Environment, Urbanization and Climate Change, 2010: 27). Action 5.5.4. states that arrangements will be made for the effective use of information technologies in urban transportation and again identifies municipalities as the responsible institution for the realization of the action (Republic of Turkey Ministry of Environment, Urbanization and Climate Change, 2010: 27).

National Intelligent Transportation Systems (ITS) Strategy Document and Action Plan 2020-2023, The Plan, organized under the auspices of the Ministry of Transport and Infrastructure of the Republic of Turkey, defines the vision of Turkey's intelligent transportation systems as creating a "human and environment-oriented transportation system in Turkey with advanced information technologies" (Ministry of Transport and Infrastructure of the Republic of Turkey, 2020: 12). The mission of the Plan is defined as "to create an efficient, safe, effective, innovative, dynamic, environmentally friendly, value-added and sustainable smart transportation network in Turkey that is integrated to all modes of transportation, uses up-to-date technologies, utilizes domestic and national resources" (Republic of Turkey Ministry of Transport and Infrastructure, 2020: 12). Within the framework of the stated vision and mission, the Plan sets five strategic objectives: developing ITS infrastructure, ensuring sustainable smart mobility, ensuring road and driving safety, creating a livable environment and conscious society, and ensuring data sharing and security (Republic of Turkey Ministry of Transport and Infrastructure, 2020: 12).

Integrated Traffic Management Application: The Ministry of Environment, Urbanization and Climate Change of the Republic of Turkey has prepared a guideline as a roadmap for organizations that want to implement Integrated Traffic Management Application, one of the smart city applications (Republic of Turkey Ministry of Environment, Urbanization and Climate Change, 2024a). The application is

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

defined as a smart traffic system that quickly collects and analyzes data from different traffic systems, identifies potential traffic congestion and takes measures to reduce congestion (Republic of Turkey Ministry of Environment, Urbanization and Climate Change, 2024a).

2020-2023 National Smart Cities Strategy and Action Plan; The vision of the 2020-2023 National Smart Cities Strategy and Action Plan of the Republic of Turkey Ministry of Environment, Urbanization and Climate Change is “Livable and Sustainable Cities that Add Value to Life”. The Action Plan aims to produce solutions by anticipating the problems and needs in cities as a result of Smart City policies, to provide urbanization services in a better quality and faster manner and thus to increase satisfaction with their services and to increase the quality of life as the ultimate goal (T.R. Ministry of Environment, Urbanization and Climate Change, 2019: 39).

The Action Plan includes actions that combine sustainable urban development and smart city. Within the scope of the action plan, which defines the preparation and implementation of smart city maturity development programs and guidance mechanism, it is aimed to establish the Sustainable Smart Cities Guidance Program (Republic of Turkey Ministry of Environment, Urbanization and Climate Change, 2019: 103). Action 15.2. is organized as “Maturity of Smart Environment Component will be Increased”. It is defined as “In order to increase the maturity of the Smart Environment component, which is determined by Smart City Maturity Assessment practices in order to ensure the Smart City transformation of cities by utilizing the Smart City Technology Portfolio and the National Smart City Solution Portfolio; environmental management will be carried out by taking into account waste, air, water, land, effective fight against climate change and management of protected assets, ensuring the sustainability of the environment and nature and green city planning” (Republic of Turkey Ministry of Environment, Urbanization and Climate Change, 2019: 298).

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

COLLABORATION OF UNIVERSITIES WITH LOCAL ACTORS

5.1. Municipality Law (Cooperation with the municipality regarding NGOs)

Municipal laws also refer to the smart city and provide a legal basis for municipalities to create smart cities by prioritizing sustainability.

5.1.1. Metropolitan Municipality Law No. 5216

The third chapter of the Law on Metropolitan Municipality, where the duties, powers and responsibilities of the municipality are determined, is important in terms of smart city. In this context, subparagraph (h) of Article 7 obliges metropolitan municipalities to establish geographical and urban information systems (Official Gazette, 2004/ Number: 25531). Subparagraph (aa) of Article 7 assigns duties related to the planning, design, construction and maintenance of bicycle paths and lanes, bicycle and electric scooter parking and charging stations, pedestrian paths and noise barriers, including sustainability and smart city components (Official Gazette, 2004 / Issue: 25531).

5.1.2. Municipality Law No. 5393

Several provisions in the sixth part of the Municipal Law have been amended with additions appropriate to the present day. Article 73 covers urban transformation and development. In this context, it states that the municipality can implement urban transformation policies to create technology parks with the decision of the municipal council (Official Gazette, 2005 / Issue: 25874). Civil society organizations are also counted among the stakeholders of smart city implementation projects carried out by some municipalities. Some of the projects are;

- Antalya – Matchup Project (URL 1).
- Edirne Municipality – Sustainable Energy Action Plan, Climate Change Adaptation Plan and Greenhouse Gas Inventory Studies (URL 2).
- Gaziantep – E-Climate Game Project (URL 3).
- Kütahya – Hope for Stray Paws Project. (URL 4).

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

- Izmir – Duraktayım – A Digital Solution for Accessible Transportation in Izmir Municipal Buses. (URL 5).

5.2. Legislation on NGOs

Civil society organizations working on smart city and sustainability themes in Turkey are as follows.

- AUS Turkey - AUSDER (Intelligent Transportation Systems Association of Turkey) carries out activities on technological solutions and smart systems in transportation. It aims to realize sustainable transportation by using information and communication technologies (AUS Turkey, n.d.).
- Informatics Foundation of Turkey (TBV); works on digital transformation and smart city technologies (TBV, n.d.).
- Fark Labs is an organization that aims to raise awareness on urban mobility in Turkey through the EIT Urban Mobility RIS Hub Turkey movement and includes smart city and infrastructure in its mobility verticals (Fark Labs, n.d.).
- The Urban Transformation and Urbanism Foundation (KENTSEV) is a foundation working on sustainable and smart city issues. In this context, it organized webinars on “financing urban transformation and smart cities”, “transportation and geographical information systems applications in smart cities”, “smart contracts and blockchain system applications in smart cities” and “the importance of determining strategies and road maps in smart cities” (KENTSEV, n.d.).

5.3. Higher Education Law

Subparagraph (c) of Article 4 of the Law No. 2547 on Higher Education states that “higher education institutions have the duty to conduct scientific studies and research at a high level, to produce knowledge and technology, to publish scientific data, to support development and improvement in the national field, to cooperate with domestic and foreign institutions...” (Official Gazette, 1981/ Number: 17506).

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

In the Law, subparagraph (e) of Article 12, which specifies the duties of higher education institutions, is stated as “to conduct teaching and research on problems concerning the scientific, cultural, social and economic progress and development of the country, in cooperation with other institutions, by making recommendations to public institutions, to present the results for the benefit of the society, and to report their opinions and suggestions by concluding the examinations and researches to be requested by public institutions” (Official Gazette, 1981/ Number: 17506). With this article, a legal basis has been established for cooperation on the specified issues.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

CONCLUSIONS AND RECOMMENDATIONS

Most elements of the legal systems in the countries studied make them similar, the most important reason for which is the desire of EU member states to adopt relevant directives and other regulations. In terms of environmental aspects, the Turkish legal system also repeatedly attempts to integrate with it. The most significant similarities are in the most established elements of the legal system. This is probably why the highest similarities can be seen in the legal provisions of water protection, which were introduced and coordinated by international regulations at the earliest in the countries studied. These similarities regarding nature conservation and biodiversity protection provisions can also be seen strongly.

Although fewer similarities between the systems can be seen in taxation systems, the difference is due more to classification and terminology than to the substance of the system. In the countries studied, we see similarities here, where the basic tax is on resource exploitation and emissions of pollutants, or CO2, into the atmosphere. Other taxes are on transportation and energy efficiency. However, these two groups are more likely to be identified as the reliefs for pro-environmental activity.

In doing so, the taxation system in each country is rather complicated. It is also often ineffective regarding pro-environmental goals, acting more as a revenue source than a stimulus for desired behaviour. It is probably due to the inertia of legal systems, similar to the countries studied – it is more challenging to introduce legal “game changers” than to modify existing systems. However, these modifications do not always have the desired effect. In this context, we recommend a different approach focused on fundamental behavioural change to the environment. It should be less calculative and bet on greater empowerment of the environment. It could be served by a more realistic valuation of environmental services and, following the example of the first such efforts in Canada or New Zealand, granting legal personality to natural assets.

The legal systems also appear susceptible to changes in the direction of a better environment and sustainable development. Political reluctance in this regard seems justified, especially since past changes in legal systems (including taxation) have often hit relatively less wealthy residents and entrepreneurs, causing justifiable discontent. Meanwhile, what is needed is a taxation of the most

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

affluent players and those who are transnational. It, in turn, requires more far-reaching intergovernmental cooperation as well as a more thorough analysis not of the background of the provisions of the law and strategy (these are by their nature declarative as input) but of the financial effects of the changes introduced both on the side of the budgets fed (tax revenues) and the impact of these changes on the actual behaviour of households, businesses and entire communities (the real causality of the legal instruments as an output).

The system of green public procurement in the jurisdictions studied is more varied. While every country has already adopted legislation either promoting or encouraging such public procurement, in practice – due to its novelty and complication – it is unevenly implemented and, in some countries, not even realistically functioning. It applies to both green procurement and the protection and further development of blue and green infrastructure in legal systems, which are seen as a key element of urban planning, where national law integrates city plans in all countries and their legal systems. Also included is sustainable urban transportation, identified in numerous documents as a key element in creating greener cities by modernising public transit and promoting cleaner mobility options. A key challenge, however, is translating the provisions of this law into reality. Their practical implementation and enforcement vary from country to country, as does the enforcement and provision of adequate resources for implementation and monitoring. The situation looks best regarding the relatively smooth implementation of the EU taxonomy for its application in corporate reporting, where we expect the fastest progress and convergence of regulations between the countries surveyed. In contrast, we see particular shortcomings around biodiversity protection.

We also recommend shifting from the technological to a more human aspect of smart cities. It is about making the impact of digital technologies on urban social, economic and political processes more inclusive rather than exclusionary. Many environmental changes can be implemented at the municipal government level, providing many examples of using digital technologies to include a broader range of local stakeholders. Free from the tech giants, it may begin at this very level by sharing local data, technology education in elementary and secondary schools, supporting local, socially responsible tech start-ups, or using digital smarts to consult city decisions.

Likewise, the human aspect must be considered in promoting sustainable development in cooperation between many groups of local actors, with academia having the competence, resources

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

and willingness to share ecologically favourable solutions and ways to achieve the goal. In each of the legal systems studied, the provisions on public participation in local government and NGO operation appear – although different – to be sufficient to undertake a wide range of constructive activities, giving voice to ordinary residents to implement abstract pro-environmental solutions more concrete. Involving residents in stimulating sustainable green development through various forms develops particularly intensively precisely at the local level – the closest to citizens. These processes can support decision-makers in resolving key development issues. The space of local government should be open to experimenting with new solutions for strengthening a viable, inclusive, green democracy. Testing social innovations in the spirit of human smart cities is then a manifestation of putting the achievements of science and pro-environmental social innovations into practice.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

ECOUNITY

www.ecounityeu.com

Co-funded by the European Union

SUA Slovak University of Agriculture in Nitra

UNIVERSITY OF LODZ

UNIRI

SOS/BirdLife SLOVENSKO

MELLIS

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.