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Contemporary Challenges of Agri-Environmental Law

Comparative Legal Aspects

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CONTEMPORARY CHALLENGES OF AGRI-ENVIRONMENTAL LAW-COMPARATIVE LEGAL ASPECTS

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LIST OF ABBREVIATIONS

AECMs	-	agri-environment-climate measures
AKIS	-	Agricultural Knowledge and Innovation System
AMR	-	Antimicrobial resistance
APA	-	Portuguese Environment Agency
Art.	-	Article
ASAE	-	Food and Economic Security Authority of Portugal
CAITI	-	Central Agricultural Inspection and Testing Institute
CAP	-	Common Agricultural Policy
CBD	-	Convention on Biological Diversity
Cf.	-	c*onfare*
Cit.	-	*citatum*
Coll.	-	collection
DGADR	-	Directorate-General for Agriculture and Rural Development
DGAV	-	Directorate-General for Food and Veterinary
DGS	-	Directorate-General for Health of Portugal
DGSAF	-	Directorate General for Animal Health and Veterinary Medicine
DRAP	-	Regional Directorate of Agriculture and Fisheries
e.g.	-	*exempli gratia*
EAFRD	-	European Agricultural Fund for Rural Development
EAGF	-	European Agricultural Guarantee Fund
EC	-	European Commission
ECHA	-	European Chemicals Agency
EEC	-	Treaty establishing the European Economic Community
EFSA	-	European Food Safety Authority
EGD	-	European Green Deal
EMFAF	-	European Maritime, Fisheries and Aquaculture Fund
ENAB	-	National Strategy for Organic Agriculture
ES	-	Ecosystem services
EU	-	European Union
ff	-	and the following pages
FST	-	Fair Transformation Fund
GAECs	-	good agricultural and environmental conditions
GEMS	-	Global Environmental Monitoring Systems
GHG	-	greenhouse gas
GMOs	-	genetically modified organisms
i.e.	-	*id est*
IMPEL	-	Implementation and Enforcement of Environmental Law
INIAV	-	National Institute for Agricultural Research and Veterinary
IT	-	Informatio Technologies
MAES	-	Mapping and Assessment of Ecosystems and their Services
MPB	-	organic production method
MRLs	-	maximum residue levels
MS	-	Member State
NAT	-	Commission for Natural Resources
NC	-	natural capital
No	-	number

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NVZs	-	nitrate vulnerable zones
OC	-	control bodies
OECD	-	Organisation for Economic Co-operation and Development
		of the Council of 18 December 2006 concerning the Registration,
		Evaluation, Authorisation and Restriction of Chemicals
OJ	-	Official Journal
OSOR	-	One substance – one registration
PAN	-	National Action Plan
PEPAC	-	Strategic Plan of the Common Agricultural Policy in Portugal
PES	-	Payment for Ecosystem Services
PPP	-	Plant protection products
RAN	-	National Agricultural Reserve Legal Regime
RDP	-	rural development policy
REACH	-	Regulation (EC) No 1907/2006 of the European Parliament and
REFIT	-	Regulatory Fitness and Efficiency Programme
SDGs	-	Sustainable Development Goals
SIAN	-	National Agricultural Information System
SMEs	-	Small and medium-sized enterprises
SMP	-	skimmed milk powder
SMRs	-	Statutory Management Requirements
SWOT	-	Strengths, Weaknesses, Opportunities, and Threats
TFEU	-	Treaty on the Functioning of the European Union
TML	-	permanent monitoring sites
UN	-	United Nations
UNEP	-	United Nations Environment Programme
UNESCO	-	United Nations Educational, Scientific and Cultural Organization
v.g.	-	*verbi gratia*
WFD	-	Water Framework Directive
WHO	-	World Health Organization
WISE	-	Water Information System for Europe
WMO	-	World Meteorological Organization
WWQA	-	World Water Quality Alliance

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INTRODUCTION (*Izabela Lipińska*)

1. BACKGROUND OF THE STUDY

The subject of this work is the issues concerning selected issues of agri-environmental law. It is not a separate branch of law and thus its norms do not form a certain coherent whole. It consists of a certain pool of peculiar normative solutions that are part of agricultural law and environmental law. Their common denominator is the conduct of agricultural activities, accompanied by certain interference with the environment. It is largely influenced by substantive administrative law, which does not exclude the influence of civil law at the same time. Although this is largely decided by the adopted national legal order.

The concept of agri-environmental issues appears in normative acts, European Union documents and scientific literature. It is also used by the legislator when formulating and implementing the objectives of the Common Agricultural Policy (CAP). Its special interest is in the context of the need to protect the environment in the face of progressive degradation of the environment, among other things, as a result of improper agricultural activity, or the impact on it of external factors over which the producer has no control. These activities have a significant impact on the processes of transformation, including its degradation devastation through the methods of production used by the agricultural producer or the abandonment of their use.

It should be noted that, in broad terms, agriculture has a major impact on shaping the environment, as it directly uses its resources in production processes. For example, intensive production requires the use of industrial inputs such as pesticides. At the same time, their excessive use can cause significant environmental risks. In turn, livestock production produces large amounts of natural fertilizers, including nitrogen and phosphorus, which, if improperly used and stored, can be a source of environmental pollution, including water in particular. Another factor causing negative environmental impacts in livestock production is the faulty use of antibiotics. They can negatively affect animals, causing antibiotic resistance and thus the spread of diseases, as well as humans – the final consumer of meat products.

Today, agricultural producers operate in a rather special market economy. They must produce according to the social needs of achieving food security. At the same time, they

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should maximize production and economic effects, which in a way affects the sustainability of farming. Achieving the indicated production and economic goals is not always conducive to the environment, because agricultural activities are accompanied by the consumption of natural resources (such as air, fossil fuels, etc.) and the far-reaching consumption of the basic factor of production, which is land.

Undoubtedly, not all production methods used have a beneficial effect on the environment. For this reason, the European Commission is proposing a more sustainable use of it through the use of various legal instruments. This is accompanied by the need to protect the environment as a special public good to be enjoyed by future generations as well.

It is worth noting that for more than 20 years the so-called agri-environmental programs have been implemented[1]. They take the form of a financial instrument to encourage farmers to adopt agricultural practices that lead to the greening of production. Their implementation is intended to contribute to the development of the agricultural economy with environmental protection by minimizing negative effects and maximizing positive effects of agricultural activities. In other words, the idea is to implement an environmentally friendly agricultural production system by reducing the negative effects on the environment resulting from the production process.

At present, a very important activity under the CAP is to carry out production within the framework of organic farming, or the implementation of so-called eco-schemes. The latter are intended to implement practices that are beneficial to the environment, climate and animal welfare, which implement all of the CAP's environmental and climate goals of mitigating and adapting to climate change, promoting sustainable development and protecting natural resources such as water, soil and air, and protecting biodiversity.

2. PURPOSE AND APPROACH OF THE STUDY

The purpose of this work is to define the essence of agri-environmental law in the face of the challenges posed by the EU legislator in the new CAP. In particular, the aim is to determine its scope, addressees and basic legal instruments affecting it.

[1] Council Regulation (EEC) No 2078/92 of 30 June 1992 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside, OJ L 215/85.

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In addition, the study seeks to answer the question of what normative solutions have been adopted in selected Member States, along with determining whether they meet the expectations placed on them. In this context, it is important to evaluate selected measures adopted by national legislatures in terms of their expediency and effectiveness from the point of view of the needs of agricultural producers and the challenges posed to them regarding environmental protection.

3. RESEARCH METHODS

The basic method used in the monograph and at the same time relevant to the work of a lawyer is the dogmatic analysis of the legal text. It refers to the peculiar conditions occurring in agriculture in conjunction with environmental protection requirements. Therefore, the *de lege lata* study was subjected to the basic legal norms in the field in question. The analysis covered the development of EU legislation in relation to agro-environmental aspects, as well as selected legal issues shaped by national law in selected Member States.

The research conducted also required the use of the historical method. It found justification in discussing the genesis and evolution of the legislature's approach to agri-environmental issues and anchoring the fundamentals with an indication of their subject and object scope. The historical method also made it possible to clarify the current shape and direction of development of agri-environmental law.

Another method used and, at the same time, extremely important from the point of view of the problems of the study is the comparative legal method. It allowed the analysis of EU agri-environmental legislation and legal norms in this area in selected countries of the European Union, i.e. Italy, Poland, Portugal and Slovakia. The use of this method justifies the usefulness of its results from the point of view of certain differences that exist in the countries studied, which take into account their specificities and indicate a certain freedom to adopt certain legal instruments.

The legal considerations undertaken also require taking into account the achievements of other sciences, including, in particular, economic sciences, as well as the assumptions of state policy. This is justified by practical considerations, since without clarification and understanding of the essence of the norms of agri-environmental law, it would not be possible to formulate *de lege ferenda* conclusions.

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4. SCOPE OF THE STUDY

The structure of the study corresponds to the stated purpose and the adopted argumentation. Its brief characterization will make it easier to understand the course of consideration.

The work is divided into three main chapters, within which thematic sections are distinguished Due to the thematic scope, a distinction has been made between general issues of agri-environmental law, the assumptions of the Common Agricultural Policy adopted for 2022-2027, and the indication of selected legal solutions adopted in Italian, Polish, Slovak and Portuguese legislation regarding agri-environmental issues included in the Green Deal.

The starting point for consideration in the monograph is the establishment of the concept and scope of agri-environmental law. Due to the fact that it combines important aspects of agricultural production with the use of the environment, first of all, on the basis of the literature, the concept of protection was outlined, along with the establishment of basic standards in this regard, as well as the definition of certain mechanisms and instruments characteristic of it. It was also necessary to identify the main addressees of the indicated norms. Due to the fact that agricultural production is immanently accompanied by environmental transformations, the study also presents the current challenges posed to the legislator and its addressees.

The Common Agricultural Policy for 2022-2027 is presented in order, starting with its historical perspective, through its basic objectives and the legal solutions assigned to them. Given the scope of the monograph, it was necessary to refer to the also implemented EU strategies that accompany the fulfillment of the CAP. This made it possible to justify the thematic scope of the work.

The third part of the work analyzes selected measures adopted in each country in accordance with their national CAP Strategic Plans. In broad terms, they were determined on the basis of the needs analysis carried out at the level of designing the Plans. Special attention was paid to the solutions adopted in Italy, Poland, Portugal and Slovakia. The selection of individual countries for the analysis of the legal solutions adopted by them is not accidental. Namely, their analysis was prompted by a certain spectrum of legal instruments used in them and the state's approach to agri-environmental issues in practical terms, which fall within the agricultural policy adopted at the EU level and at the same time exhibit peculiar legal solutions. The

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analysis made it possible to identify the determinants of individual instruments and their legal construction, taking into account their determinants with regard to the use of pesticides in crop production and antibiotics in animal production, water quality, organic farming and the so-called eco-schemes. A certain organizational and functional peculiarity of them made it possible to evaluate individual national solutions

The work concludes with a consideration of the formulation of an answer to the question of what normative solutions have been adopted in selected Member States, along with a determination of whether they meet the expectations placed on them. Selected *de lege ferenda* conclusions are presented here as to the prospects of the instruments used so far, the assessment of their effectiveness and the possibility of their changes in the future.

The work takes into account the legal status as of January 1, 2023.

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CHAPTER 1

THE EU AGRI-ENVIRONMENTAL LAW – INTRODUCTORY ISSUES

1. THE CONCEPT OF THE AGRI-ENVIRONMENTAL LAW (*Susana Almeida*)

Food is a basic human need and the right to adequate food is protected under several national instruments and international human rights treaties of universal or regional range.[2] Agriculture and global food systems seek to ensure this right and human need, despite having a huge impact in the environment and therefore raising multiple challenges to decision-makers, farmers, food business operators and consumers worldwide. Additional pressure is generated by the projected population growth and the increase in demand.[3] Agriculture production and land use create indeed serious environmental problems through the use of fertilisers, pesticides, water resources and thus this human activity inevitably affects water, air, soil quality, eco-systems, and biodiversity, besides changing rural landscapes.[4] In particular, agriculture is a significant contributor to global warming due to the release of significant amounts of methane and nitrous oxide, two powerful greenhouse gases.[5] From the opposite perspective, climate change also influences agriculture, as warmer air temperatures affect the length of the growing season and may lead to the proliferation and spreading

[2] See for instance, Article 25.1 of the Universal Declaration of Human Rights (1948), Article 11 of the International Covenant on Economic, Social and Cultural Rights (1966), Article 24 of the Convention on the Rights of the Child (1989), Rome Declaration on World Food Security (1996). For further developments, see Mariagrazia Alabrese and Giuliana Strambi, 'Food sovereignty and food security: concepts and legal framework' (2019) 4 *Rivista di Diritto Agrario* 736-745.

[3] European Environment Agency, 'Agriculture and climate change' (2015) <https://www.eea.europa.eu/signals/signals-2015/Articles/agriculture-and-climate-change> accessed 20 December 2022.

[4] For further developments, see Brian Jack, *Agriculture and EU Environmental Law* (Available from: VitalSource Bookshelf, Taylor & Francis, Routledge, 2016) 21 ff.

[5] On this regard, see John Lynch, Michelle Cain, David Frame and Raymond Pierrehumbert, 'Agriculture's contribution to climate change and role in mitigation is distinct from predominantly fossil CO_2-Emitting Sectors' (2021) *Frontiers in Sustainable Food Systems* <https://www.frontiersin.org/Articles/10.3389/fsufs.2020.518039/full> accessed 20 December 2022. Updated data in this respect may be found at <https://www.fao.org/faostat/en/#data> accessed 20 December 2022.

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of some species, such as insects or invasive weeds[6] Besides, water scarcity or extreme weather events, such as floods or heat waves, are also key climate change concerns that will affect agriculture. Almost 50% of the European Union's territory is covered by farmed land[7] and a similar percentage is found at a global level.[8]

Considering this important and inevitable interaction between agriculture production and land use with natural resources and the environment, there has been in the last decades a well-set consensus on the need to reconcile agricultural policies with environmental policies. In this sense, agricultural practice, principles, and legislation must be in tune with the principles of sustainable development and environmental priorities. The European Union has had a paramount role in this regard, creating a holistic, interdisciplinary, and cross-sectored building of policies and legal framework aiming at the outline of sustainable food and agricultural systems in a way that meet the present needs without compromising the needs of the future generations.[9]

This path began with several reforms introduced to the European Union's Common Agricultural Policy (CAP) since 1992, increasingly integrating environmental concerns and fulfilling sustainability purposes.

The CAP is "a set of laws adopted by the EU to provide a unified policy on agriculture in EU countries"[10], developed in 1962 in line with the objectives defined in the Treaty of Rome (EEC) signed on 25 March 1957.[11] In this early-stage, CAP aimed at increasing agricultural production, enhancing farmers' income, stabilising markets, ensuring food supplies and relatively high commodity prices. This intensification of

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[6] European Environment Agency, 'Agriculture and climate change', *cit*.

[7] See: *Sustainable land use (greening)* <https://agriculture.ec.europa.eu/common-agricultural-policy/income-support/greening_en> accessed 20 January 23; according to Eurostat, agricultural land accounted for 39,1% in 2018 (<<https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Land_use_statistics> last accessed 20 January 2023) and 38% in 2020 (<https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Farms_and_farmland_in_the_European_Union_-_statistics> accessed 20 January 2023).

[8] See: <https://data.worldbank.org/indicator/AG.LND.AGRI.ZS> and <https://www.fao.org/faostat/en/#data/RL> accessed 23 December 2022.

[9] In line with the guiding principle drawn by the United Nations in the General Assembly Resolution 42/187, 11 December 1987, Our Common Future: Report of the World Commission on Environment and Development, <http://www.un-documents.net/a42r187.htm> accessed 7 January 2023.

[10] European Council, 'Common Agriculture Policy' <https://www.consilium.europa.eu/en/policies/cap-introduction/>.

[11] On the origin and evolution of CAP, see Brian Jack, *Agriculture and EU Environmental Law, cit*, 1 ff.

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production policy led to intensive agriculture and consequently to serious damages in the environment due to unsustainable use of natural resources.[12]

The need to consider environmental protection requirements in agricultural policies was introduced by the Single European Act in 1986, amending the European Community Treaty. At world level, the European Union played a key role in the development of the United Nations Framework Convention on Climate Change, signed in 1992, following the "Earth Summit" held in Rio de Janeiro, and its Kyoto Protocol of 1997 set out important binding targets to reduce greenhouse gases emissions in all sectors, including in agriculture.[13] Then, the Amsterdam Treaty of 1997 signals the European Union's commitment to sustainable development, while retaining the existing Treaty bases for environmental and agricultural policy. And the European Council at Cardiff in 1998 noted the Commission's efforts to the development of strategies for integrating environmental concerns into the different policies, including agriculture, and the need to evaluate this in individual decisions.[14]

It was in this context that on 30 June 1992 the Community adopted a reform package known as the "MacSharry reforms"[15], followed by the "Agenda 2000" reforms adopted on 17 May 1999.[16] The key elements of these past reforms were the introduction of "financial incentives to farmers to change their practices in line with broader concerns

[12] *Idem* and Hans-Peter Piorr, 'Environmental policy, agri-environmental indicators and landscape indicators' 98 (2003) *Agricultura Ecosystems & Environment* 17-33, 18.

[13] Food and Agriculture Organization of the United Nations, 'World Programme for the census of agriculture 2020. Programme, concepts and definitions' 1 (2017) 17 <https://www.fao.org/3/i4913e/i4913e.pdf> accessed 30 January 2023.

[14] Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions - Directions towards sustainable agriculture /* COM/99/0022 final <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:51999DC0022> accessed 31 January 2023.

[15] See for instance, the Council Regulation 2078/92, (1992) OJ L 215/85.

[16] The integration of environmental objectives into the reforms, under Agenda 2000, was achieved through two important legal acts: Council Regulation 1259/99, (1999) OJ L 160/113 provided three methods by which environmental protection requirements could be integrated into agricultural production policy (implementation of "first CAP pillar" mainly concerned with policy production); Council Regulation 1257/99, (1999) OJ L 160/80 consolidates previous agri-environmental measures and introduces new measures covering the "second CAP pillar" concentrated on sustainable development of rural areas.

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of environmental protection biodiversity conservation, water protection, and, later, climate change protection".[17]

The 2003 "Mid Term Review of the CAP" reform shifted financial assistance for farmers towards direct aids decoupled from production and therefore reducing incentives for intensive production, which entails greater risks for the environment. This decoupled support comes with obligations on farmers to manage their land in sustainable ways. Cross-compliance and modulation become compulsory. Compulsory cross-compliance is based on a system of binding European standards in the fields of environment, food safety and animal health and welfare. The 2008 "CAP Health Check" had also a central role in the protection of biodiversity, managing and protecting water resources and tackling climate change.

The 2013 CAP was adopted, for the first time, under ordinary legislative procedure, where the Council co-legislates with the European Parliament. This reform included the "greening" of farm payments, through the introduction of environmental sound farming practices, more equality in the distribution of support and better targeting of income support to farmers most in need, like farmers in areas with natural constraints.

Finally, the post-2020 reform of the CAP ("fairer, greener and more result-oriented policy") "aims to introduce a new strategic approach, giving Member States the autonomy to put together strategic plans based on their needs and in line with EU-wide goals" and, regarding climate change concerns and environmental challenges, the new CAP "places a special focus on green requirements" (*e.g.,* ew type of support for green measures, the "eco-schemes").[18]

In sum, as the European Commission stresses, the new CAP "has three clear environmental goals, each of which are echoed in the European Green Deal and Farm to Fork Strategy: tackling climate change; protecting natural resources; enhancing biodiversity".[19] These goals are supported by the CAP's promotion of organic farming

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[17] Olivier Aznar, 'Defining environmental services from agriculture to better understand the implementation of European agri-environmental policy' 139 (2023) *Environmental Science and Policy* 22-28, 23.

[18] European Council, 'Timeline – History of CAP' <https://www.consilium.europa.eu/en/policies/cap-introduction/timeline-history/>. For a critical vision of CAP post-2020, see Guy Pe'er et al., 'Action needed for the EU Common Agricultural Policy to address sustainability challenges' (2020) 2 *People Nature*, 305-316 <https://besjournals.onlinelibrary.wiley.com/doi/full/10.1002/pan3.10080> accessed 31 January 2023.

[19] European Commission <https://agriculture.ec.europa.eu/sustainability/environmental-sustainability/cap-and-environment_en>.

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and the responsible management of inputs like pesticides and fertilisers. Additionally, these goals should be achieved "in a way that is socially and economically sustainable for farmers, rural communities, and the EU as a whole".[20]

The European Green Deal (EGD) aims to transform the Europe into the first climate-neutral continent until 2050, providing an action plan that seeks to promote an efficient use of resources through the transition to a circular economy, the restoration of biodiversity and reduction of pollution, leaving no person and no region behind.[21] On this path to the green transition, the EGD presents a package of initiatives that embrace various policy areas, such as agriculture, with a holistic and cross-sectoral approach, namely the EU Biodiversity Strategy for 2030, the Farm to Fork Strategy and the Circular Economy Action Plan. The Farm to Fork and the EU Biodiversity Strategy for 2030 were unveiled in May 2020 and intend to achieve the Deal's goals for the Agri-food Sector.

The Farm to Fork Strategy aims to shift the EU food system towards a fair, healthy and environmentally friendly model. Under this strategy, the sustainable food system should: i) "have a neutral or positive environmental impact"; ii) "help to mitigate climate change and adapt to its impacts"; iii) "reverse the loss of biodiversity"; iv) "ensure food security, nutrition and public health, making sure that everyone has access to sufficient, safe, nutritious, sustainable food"; v) "preserve affordability of food while generating fairer economic returns, fostering competitiveness of the EU supply sector and promoting fair trade".[22]

Under the EGD's Farm to Fork Strategy, the European Commission has set out an Organic Production Action Plan for the EU, aiming to achieve of 25% of agricultural land under organic farming by 2030. This Action Plan foresees three major objectives: i) "stimulate demand and ensure consumer trust"; ii) "stimulate conversion and reinforce the entire value chain"; iii) "organics leading by example: improve the contribution of organic farming to environmental sustainability".[23]

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[20] Ibidem.

[21] European Council, 'European Green Deal' <https://www.consilium.europa.eu/en/policies/green-deal/> accessed 5 January 2023.

[22] European Commission, 'Farm to Fork Strategy' <https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en> accessed 5 January 2023.

[23] European Commission, 'Organic Action Plan' <https://agriculture.ec.europa.eu/farming/organic-farming/organic-action-plan_en> accessed 5 January 2023.

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Plus, one of the basic pillars of the New Consumer Agenda launched in November 2020 by the European Commission is to empower consumer in the green transition[24] and consumers may have an important role in this context as the consumption of organic products will stimulate farmers to convert to organics.

After briefly summarising the evolution of the process of harmonisation of agricultural policies and environmental policies in the European Union and its reflection in the construction of the legal framework in this regard, we are now in conditions of outlining the concept of Agri-environmental Law.

The designation "Agri-environmental Law" ("*Agroenvironmentálne Právo*", "*Prawo rolno-środowiskowe*", "*Droit Agro-environnemental*", "*Direito Agroambiental*", "*Diritto Agroambientale*", "*Agrarumweltrecht*") announces a point of contact between Agrarian Law and Environmental Law.

Agri-environmental Law is a set of norms aiming at the creation of a sustainable system of agriculture, with the combination of social, economic, and environmental approaches. It is a set of norms that seek the "greening" of agriculture, that implement the environmental principles (precaution principle, prevention principle, restitution principle) in agricultural activities and food system.

As briefly Gergely Horváth defines, Agri-environmental Law is a set of "norms of environmental law being against the environmental pollution of the agriculture".[25] This author also puts forward a definition in a wide sense, stating that "it contains the rules of the general part of environmental law (horizontal division, weaving in all special fields of it) and the ones of the special part (with a vertical division) which can be applied in the agricultural sector".[26]

At European Union's level, Agri-environmental Law is European law of primary (*v.g.,* Articles 11 and 38-44 of the Treaty on the Functioning of the European Union) or secondary origin (*v.g.*, Regulation (EC) No 178/2002, laying down the general principles and requirements of food law, establishing the European Food Safety

[24] European Commission, Press Release 'New Consumer Agenda: European Commission to empower consumers to become the driver of transition', November 2020 <https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2069> accessed 30 January 2023.

[25] Gergely Horváth, 'Some legal aspects of agri-environmental efforts in the common agricultural policy' Cofola (2008) 3 <https://www.law.muni.cz/sborniky/cofola2008/files/pdf/evropa/horvath_gergely.pdf> accessed 31 January 2023.

[26] Ibidem.

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Authority and laying down procedures in matters of food safety), binging to all EU Member States. This legal framework seeks to ensure food security, addresses global market fluctuations and price volatility, aims at maintaining thriving rural areas, targets the sustainable use of natural resources and, finally, pursues the mitigation of climate change.[27]

At national level, Agri-environmental Law presents an interdisciplinary character in what relates to economy and law, and it is interdisciplinary as well in the specific legal field, as it encompasses all the norms of public and private law that concern agricultural activities, food system and environment protection.[28] Agri-environmental Law is mainly administrative law, as these rules safeguard the relationships between public authorities and private persons (farmers, food business operators, consumers), as well as between public authorities, and public authorities apply public power (*ius imperium*) to limit or enable certain actions by private persons or public authorities. In this sector we include environmental law rules, but also expropriation law, rules on financial aid, land use regulation, national agriculture policies' rules within CAP, food law rules[29], among others. Nevertheless, we find Agri-environmental Law rules of private nature, such as property law rules, legal framework of rural leases, most of consumer law rules, intellectual property law, contract law, self-regulation, private certification.[30]Additionally, we identify some norms of criminal natural, as national authorities classify certain actions that harm the environment or public health or, in general, the common good as criminal offences.[31]

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[27]European Council, 'Common Agriculture Policy' <https://www.consilium.europa.eu/en/policies/cap-introduction/>.

[28] Carlos Alberto Mota Pinto, António Pinto Monteiro and Paulo Mota Pinto, *Teoria Geral do Direito Civil* (Coimbra Editora 2005) 52.

[29] Although some food law rules present private nature, such as most of consumer law rules or intellectual property rules. According to Ines Härtel and Dapeng Ren, "The term Agri-Food Law represents a generic concept and includes, firstly, Agri-Law in its divers uses, including agri-environmental law/agri-orientated natural resources law, secondly, Food Law including its various differentiations and, thirdly, the specific intersections between Agri-Law and Food Law". Ines Härtel and Dapeng Ren, 'Agri-Food Law: Term, Development, Structures, System and Framework'. See Ines Härtel *Handbook of Agri-Food Law in China, Germany, European Union* (Springer 2018) 1.

[30] See: Bart Wernaart, Bernd van der Meulen and Menno van der Velde, 'Introduction to law', Bernd van der Meulen (ed) *EU Food Law Handbook* (Wageningen Academic Publishers 2014) 64; Máte Julesz 'Interdisciplinary fields of environmental law and new branches of civil law' *Journal of Legal Theory* 3 (2003) <http://jesz.ajk.elte.hu/julesz15.html> accessed 31 January 2023.

[31] See: Bart Wernaart, *cit.* 65.

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In sum, Agri-environmental Law is an interdisciplinary and functional part of law that combines parts of several branches of public and private law aiming at the regulation of agricultural activities with the common and global goal of the protection of the environment and safeguard of right to adequate food and human dignity.

2. AGRI-ENVIRONMENTAL POLICY COMPONENTS AND POLICY MECHANISMS (*Cátia Marques Cebola*)

Agri-environmental policy includes a set of measures adopted by States or organizations, such as the European Union or Member-States, aiming to achieve certain objectives considered strategic or vital in view of the guiding principles or political programme of that State or organization.

The agri-environmental policy is based on the consensus that is needed to reconcile agricultural policy and environment. In the post-World War II period, marked by uncertainty in food production, the European policies aimed to increase productivity in the agricultural sector and ensuring the availability of food for the population. These were, therefore, the main purposes of the Common Agricultural Policy (CAP) in the early days of its implementation in the European area. Nevertheless, the agriculture intensification has generated environmental problems through the excessive use of fertilisers, pesticides and water resources. Thus, since 1992, when both a reform of the Common Agriculture Policy was agreed and the EU Fifth Action Programme was adopted, the aim has been to integrate the EU agriculture and environmental policies.[32] Currently, given the ODS of UN, it can be also added sustainability goals.

The European Green Deal is an example of a current agri-environmental policy that establishes an action plan with specific initiatives to be adopted by the European Commission with the aim of making the European Union (EU) climate neutral in 2050. This action plan aims "to boost the efficient use of resources by moving to a clean, circular economy and to restore biodiversity and cut pollution".[33] For example, to reduce net EU greenhouse gas emissions to 55% below 1990 levels by 2030, the

[32] Michele Giuseppe Salvan, Danilo Bertoni, Daniele Cavicchioli, Stefano Bocchi, 'Agri-Environmental Indicators: A Selected Review to Support Impact Assessment of New EU Green Deal Policies' (2022) 12 *Agronomy* 798 and also <https://ec.europa.eu/environment/archives/action-programme/env-act5/chapt1-4.htm> accessed 6 October 2022.

[33] See: The EU Green Deal – a roadmap to sustainable economies <https://www.switchtogreen.eu/the-eu-green-deal-promoting-a-green-notable-circular-economy/>.

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European Commission's Directorate-General for Climate Action is responsible for presenting legislative proposals to achieve that goal. Agri-environmental policy includes, therefore, the instruments and mechanisms to achieve a sustainable agriculture and environment.

2.1. AGRI-ENVIRONMENTAL POLICY COMPONENTS

According to the OECD[34], the policy components in a specific sector depend on context in which they are designed and implemented However, given the literature on agri-environmental policy, the following components can be point out as integrating the policy cycle:

– *Policy design*: This component considers the problems to be solved in order to define, in first place, the general goals or lines of action (usually with political nature) and, then, the specific operational aims, which should achieve, in turn, the general goals outlined and solve the problems identified This component also includes the selection and specification of a particular policy mechanism (or suite of mechanisms) to achieve the goal(s) defined and to promote the specific operational aims;

– *Preliminary step on enrolment in the policy mechanism*: Before implementing a particular policy mechanism or mechanisms, it should be promoted a process of raising awareness and enrolling participants. "Depending on the design of the mechanism, this may consist of informing the regulated community of requirements; registering programme participants in a database; collecting baseline information; conducting preliminary eligibility checks; establishing a process for accepting proposals or auctions, etc.";[35]

– *Implementing policy mechanism or mechanisms:* The implementation of agri-environmental policies depends on the type and category of mechanisms selected For example, if a regulatory instrument is chosen, its implementation can be achieved through the definition of environmental standards, or activity prohibitions. But if, instead, economic-financial instruments are elected, the measures to be implemented may involve the establishment of environmental taxes or environmental subsidies;

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[34] OECD, *Guidelines for Cost-effective Agri-environmental Policy Measures (*OECD Publishing Paris 2010) <http://dx.doi.org/10.1787/9789264086845-en> accessed 6 October 2022.

[35] See: Annex A. Agri-environmental policy components and policy mechanisms <https://www.oecd-ilibrary.org/sites/4651e299-en/index.html?itemId=/content/component/4651e299-en> accessed 6 October 2022.

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– *Monitoring and enforcement (if necessary) of the policy mechanism or mechanisms: T*his component aims to certify that the instruments are being complied with, which may include enforcement measures through inspection bodies, imposing fines or penalties in the event of non-compliance;

– *Policy evaluation*: This component involves monitoring the results and achievements of the policy mechanism(s). Two parameters should be measured: on the one hand, its *effectiveness*, that is, the level of achievement of the defined goals, and, on the other hand, its *efficiency* in terms of comparing the implementation costs with the results achieved;

– *Communication the policy results*: Finally, the results achieved should be shared with the public and feedback from interested stakeholders should be sought. Depending on the policy cycle, communication with the public and stakeholders can take place during all components, either to get feedback or to engage the public in meeting the objectives.

2.2. AGRI-ENVIRONMENTAL POLICY MECHANISMS

Agri-environmental policy mechanisms are the instruments used to achieve the goals established, that can be divided in three main categories: regulatory, economic and hybrid mechanisms.

Regulatory mechanisms use regulations as a way to prevent or stimulate environmental behaviors, as well as to set environmental standards, or even as a way to rule property rights. As regulatory instruments can be point out:

– Environmental standards used to set quality criteria for agricultural products on the market, for example by banning the presence of chemicals or setting limits for pesticide use. They are also used to regulate pollution emissions and to limit industrial effluents in order to avoid water pollution, and

– Activity prohibitions, establishing permanent bans on undertaking an activity that is harmful to the environment in an agricultural area, for example by prohibiting the aerial spraying of pesticides.

While economic instruments are such as: taxes, subsidies, tradeable allowances or extension services. These mechanisms are based on the application of financial resources to encourage certain behaviors or to create the conditions for achieving the intended goals. In this category it can be point out:

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– "Agri-environmental payments" that are "voluntary programmes providing incentives (payments) to farmers to adopt specific farming practices with positive environmental effects and/or providing public goods (such as landscape, biodiversity, etc.)".[36] These payments can exist also for conversion of agricultural land to wetlands or forest or to support organic farming; and

– Environmental taxes and charges in order to avoid or create a reduction effect of certain practices such as the use of certain pesticides.

Last of the above, hybrid instruments, combine different mechanisms to achieve the defined operational objectives and it can include:

– Environmental Cross-compliance through which farmers are encouraged to comply with high standards for public, plant, and animal health and welfare;

– Technical assistance, provided by public entities in order to induce voluntary changes in farming practices to improve environmental outcomes.[37]

3. KEY ACTORS (*Izabela Hasińska*)

The modern European Union is a grouping of countries characterized by different sizes, different population and economic potential, and different political and economic histories. Therefore, each country has formed a specific agrarian structure, which is the resultant of many different factors of a natural (e.g., landform, climate), economic or political nature. This heterogeneity is also reflected in the aspect of the main basic actors operating in the broader agrarian market.[38] The diversity of farm models that form a certain structure in each country is a certain historically formed fact. As already mentioned, they are subject to constant evolution, guided, among other things, by intentional political factors.

Thus, in the countries of the European Union, there is a large internal differentiation of entities operating in the field of agriculture, manifested in different production potential and different directions of production of farms. Specialization of agricultural production involves reducing its assortment diversity or increasing the production of

[36] Vaclav Vojtech, 'Policy Measures Addressing Agrienvironmental Issues' (2010) No 24 *OECD Food, Agriculture and Fisheries Papers OECD Publishing Paris* 7.

[37] According with the OECD Guidelines for Cost-effective Agri-environmental Policy Measures (2012).

[38] Maja Klun, Renata Erker, 'Perceived Development of Sustainable Agriculture' (2012) No 2 *Administration* 49.

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a selected article, accompanied by maintaining the volume of production of other articles at the current level.

The typical common division of traditional agribusiness entities includes the division into:

– Small farms, which are treated by their owners as a place to live and (or) as a capital investment, rather than as an entity of commodity agricultural production;

– Intensive farms, which are characterized by a growing area, the development of production through investment, among other things, and a high degree of integration with the market;

– Large-scale farms, characterized by simplified large-scale production that is easy to mechanize.

Traditionally, agricultural activity has been identified with farm labor, with land and capital at its core in addition to labor. Nevertheless, this traditional view has become somewhat outdated Currently, the farm is becoming the elementary production unit in the field of agriculture, that is, it includes that sphere of material human activity in which food products and some raw materials for industry are produced Due to the dynamic development of the agri-food sector, a transformation in the field of domestic agriculture is evident. This development is also stimulated by various types of financial support instruments that provide an incentive for greater activity of the entities involved in this area. It should be noted that a new dimension is also being acquired by the phenomenon known as "corporate agriculture" or "enterprise agriculture," which essentially combines those forms of organization of agricultural production for which the priority objective is speculative-type profits. The framework in which corporate agriculture operates serves in some way to organize agricultural activities, for it was introduced to distinguish family farming from farming based on the ownership of various types of companies. The term itself derives from the vocabulary of representatives of the humanities and social sciences, for whom new structures for organizing agricultural production were of interest. This term describes as a company a new form of exercise of the profession of a farmer and a unit of organization of agricultural production, moving away from the family model and acquiring more and more characteristics of enterprises existing in other branches of the economy.

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In addition to the indicated classical, traditional division, a variety of economic entities in terms of organization, capital and ownership operate on the agribusiness plane. Among these entities are also units and institutions.[39] At their core remains ensuring food safety. This is a common task for all participants in the "field to table" chain. It also includes regulatory institutions, bodies that create and apply laws, officials at the national and international levels.[40] Thus, today, the interaction of the private, state and cooperative sectors is evident in the food production process.

The totality of units found in the agro-environmental sector is usually divided into two types. Thus, the first includes organizational units that directly produce food products, while the second is co-created by units that participate in servicing the production process of farms and enterprises. Also distinguished are organizational units that are exclusively food producers, as well as those engaged in service activities for agriculture.[41] EU policy strives for a modern, competitive, resilient and diversified agricultural sector, benefiting from high-quality production and resource efficiency, and ensuring long-term food security within a competitive and productive agri-food sector, while protecting the family farm model. Characteristically, in order to ensure a common approach at the EU level, a framework definition of the term, "active farmer" has been established with the most important elements. In their strategic plans, Member States should determine on the basis of objective conditions which farmers are considered economically active farmers. In order to reduce the administrative burden, Member States should have the option to grant direct payments to small farms that also contribute to rural vitality, and to establish a negative list of non-agricultural activities, compared to which agricultural activities tend to be marginal. The negative list should not be the only way to determine the definition, but should be used as a complementary tool to help identify such non-agricultural activities, without prejudice to the ability of the persons concerned to prove that they meet the definition of an active farmer.

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[39] Zbigniew Brodziński,, 'The process of formation of agribusiness companies in rural areas of western and eastern Poland' (2006) No 514 *Zeszyty Problematowe Postępu Nauk Rolniczych* 91-92.

[40] Katarzyna Rybińska, *Food safety management – innovations, in Managing the enterprise towards modern technological, social and environmental challenges*, (ed) A. Walaszczyk, M. Koszewska (Łódź 2021) 78.

[41] Krzysztof Firlej, *Development of the agri-food industry in the agribusiness sector and its determinants* (Kraków 2006) 10 ff.

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In order to ensure better incomes, strengthen the socioeconomic structure of rural areas or achieve related goals, the definition of an economically active farmer should not exclude the granting of support to farmers with agricultural and non-agricultural activities or part-time farmers who engage in non-agricultural activities in addition to agricultural activities.

With this in mind, Regulation (EU) 2021/2115 of the European Parliament and of the Council of December 2, 2021 laying down provisions on support for strategic plans drawn up by Member States under the common agricultural policy (CAP strategic plans) and financed by the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulations (EU) No 1305/2013 and (EU) No 1307/2013 [42] introduces unifying definitions at the European level for defining typical actors in the agri-food sector.

Thus, the term, "farmer" means a natural or legal person or a group of natural or legal persons, regardless of the legal status of such a group and its members under national law, whose farm is located within the territorial scope of application of the Treaties, as defined in Article 52 of the Treaty on European Union in conjunction with Articles 349 and 355 of the Treaty on the Functioning of the European Union, and who carry out agricultural activities as defined by the Member States in accordance with Article 4 (2) of this Regulation. In turn, the term, "farm" means all components used for agricultural activities and managed by the farmer, located on the territory of the same Member State.

And, "beneficiary" within the meaning of the aforementioned regulation means: a public law entity or a private law entity, an entity with or without legal personality, a natural person or a group of natural or legal persons responsible for the very initiation or initiation and implementation of operations. In turn, in the context of state aid programmes: an enterprise that receives aid. In the context of financial instruments: an entity that implements a management fund or, in cases where there is no management fund structure, an entity that implements a specific fund, or, in cases where a financial instrument is managed by a managing authority, a managing authority In turn, "intermediary entity" means any public law entity or private law entity, including regional or local entities, regional development entities or non-governmental

[42] Official Journal of the EU L 435/1, 1 et seq.

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organizations, for which a national or regional managing authority is responsible or which performs duties on behalf of such an authority or body.

The EU regulation also defines the term, "agricultural activity" "to mean an activity that makes it possible to contribute to the provision of private and public goods through one or more of the listed activities, i.e.: the production of agricultural products including activities such as animal husbandry or cultivation, including through the use of peatlands – with agricultural products meaning products listed in Annex I to the TFEU, with the exception of fishery products – as well as cotton and short-rotation coppice, or the maintenance of agricultural land in a condition that makes it suitable for grazing or cultivation, without the need for preparatory activities beyond the use of normal agricultural methods and normal agricultural equipment. On the other hand, "economically active farmer" is defined in such a way as to ensure that support is granted only to natural or legal persons or groups of natural or legal persons engaged in agricultural activities at least at a minimum level, while not necessarily excluding from support farmers engaged in agricultural and non-agricultural activities or part-time farmers. In determining who, in turn, is an "active farmer," Member States shall apply objective and non-discriminatory criteria, such as income testing, farm labor input, the object of the enterprise, and the inclusion of their farming activities in national or regional registers. Such criteria may be introduced in one or more forms chosen by the Member States, including a negative list excluding the recognition of a farmer as an active farmer. If Member States recognize as active farmers those farmers who have not received direct payments in excess of a certain amount in the previous year, this amount may not be higher than 5,000 EUR.

Characteristically, the "young farmer" is defined in such a way as to include an upper age limit of between 35 and 40 years; the condition of being "in charge of the farm"; the relevant training or skills required as determined by the Member States. In turn, a, "new farmer" shall be defined so that the term refers to a farmer other than a young farmer and other than a "farm manager" for the first time. Member States shall determine other objective and non-discriminatory requirements for adequate training and relevant skills.

It should be added that at the agro-environmental level, many entities are referred to as enterprises. The terms economic entity or business unit are used interchangeably. When attempting to qualify or divide enterprises that operate in the market, it should be

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pointed out that this can be done using various criteria. Among them, it is necessary to point out the form of business conducted, the size of the enterprise, the nature of the business conducted In terms of, "ownership" in the private sector the owners are individuals, civil partnerships or cooperatives, and in the public sector there are enterprises owned by the State Treasury, municipal enterprises and of a mixed nature. Taking into account the criterion of the organizational form of the enterprise in the national structure, it is possible to distinguish individual farms (peasant), private units outside agriculture, enterprises formed after large-scale farms, partnership enterprises, cooperatives and joint stock companies.[43]

It is characteristic that the issue of recognizing a farmer as an entrepreneur is the subject of dispute in the doctrine of law.[44] Today, however, more and more farms run by an individual farmer have the characteristics of a private enterprise, which is a business entity with the goal of providing goods and services to potential buyers and maximizing profit.[45] A significant number of enterprises are private entities, operating outside of agriculture, and formed as a result of privatization transformations, which belong to the agribusiness sector – but outside of agriculture. Among such enterprises, one can point to private business entities providing services such as transportation, construction, catering, consulting or other services. Among enterprises in the agribusiness sector there are also cooperatives, which are voluntary associations of an unlimited number of people, with variable membership and a variable share fund. It is also necessary to point out the functioning of entities that operate in the form of a company.

Cooperatives are another group of entities of significant importance to the agri-environmental sector. They operate at various stages of business, from the stage of purchasing inputs, through the use of agricultural machinery, the sale of crops, consulting, to processing. A distinctive division of such cooperatives is the following:

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[43] Krzysztof Firlej, *Adapting Polish enterprises of the agribusiness sphere to the requirements of the European Union,* In *Sources of competitive advantages of enterprises in agribusiness*, (ed) D. Niezgoda (Lublin 2003) 42-49.

[44] Roman Budzinowski, *The concept of a farm in agricultural law* (Poznan 1992) 26-27.

[45] Krzysztof Firlej, *Determinants of the activity of agribusiness enterprises in the conditions of the process of globalization and European integration*, In *Managing restructuring of enterprises in the process of globalization of the economy* (Warszawa-Kaków 2005) 134-143.

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agricultural production cooperatives, involved in the operation of a common farm and in activities for the benefit of members of individual farms; cooperatives of agricultural circles (agricultural services), which provide services for agriculture and the rural environment; labor cooperatives, whose object is to run a common enterprise based on the personal labor of members; labor cooperatives of folk and artistic handicrafts, creating new and cultivating traditional values of material culture.[46] According to another division, cooperatives from the sphere of agribusiness can be divided into: manufacturing (production) cooperatives; trade and service cooperatives; consumer cooperatives and user cooperatives.[47]

According to another division, cooperatives from the sphere of agribusiness can be divided into: manufacturing (production) cooperatives; trade and service cooperatives; consumer cooperatives and user cooperatives.

Among the entities occurring in the agribusiness sphere there are also partnerships and commercial capital companies. The former are based on the personal element and the involvement of the partners themselves in the operation of the company, while in capital companies, capital is of primary importance. A certain alternative for European business entities whose intention is to consolidate in a single legal organizational form is the European Economic Interest Grouping. The sources of law applicable to the Grouping are: Council Regulation No 2137/85 of July 25, 1985 on the European Economic Interest Grouping and the Law of March 4, 2005 on the European Economic Interest Grouping and the European Company.[48] Characteristically, this form facilitates the free movement of capital and other means of production. In the traditional view, the grouping is intended to combine the qualities of capital commercial companies with those of partnerships unavailable to medium-sized and larger companies. [49] Characteristically, this form facilitates the free movement of capital and other means of production. In the traditional view, the grouping is intended to combine the qualities of capital commercial companies with those of partnerships unavailable to medium-sized and larger companies.

[46] Ibidem.

[47] Ibidem.

[48] Official Journal EC L 199, 1 et seq.

[49] Journal of Laws No. 62, item 551 as amended.

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4. CURRENT CHALLENGES OF EU AGRI-ENVIRONMENTAL LAW (*Damian Puślecki*)

The European Green Deal is a development strategy to transform the European Union into a climate-neutral area. It is a response to the climate crisis and strong environmental degradation processes. With regard to the economy, it is to have characteristics such as modernity, resource efficiency and environmental friendliness. The main objectives of the European Green Deal, with regard to agriculture, include, inter alia, the protection of biodiversity and ecosystems**,** the reduction of air, water and soil pollution, the transition to a closed loop economy and the improvement of waste management.[50]

The European Union has set itself the main goal of achieving climate neutrality by 2050. The EGD will have an impact on many key areas of the economy. The Infrastructure and Environment Programme 2014-2020 and its successor, in the new financial perspective 2021-2027, will contribute to the implementation of the main elements of the European Green:

- Providing clean and safe energy;
- Implementing a circular economy;
- Buildings with lower energy requirements;
- Accelerating the transition to sustainable and intelligent mobility;
- Protection and restoration of ecosystems and biodiversity;
- Adapting to climate change;
- Health protection.

Within the framework of the EGD³, the first ever European Climate Law is being developed It is envisaged that the effects of the European Climate Law will include:

- Reduction of emissions;
- Greenhouse gases by 2050;

[50] See: <https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal> accessed 17 December 2022.

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– Guarantee of irreversibility of the transition to climate neutrality;

– Creating a predictable business environment for industry and investors, indicating what needs to be done and how quickly.

The European Green Deal is an opportunity to move towards a low carbon economy and away from an economy that consumes non-renewable natural resources. The energy transition represents a significant challenge for individual members, but is also the direction in which the European Union is moving.[51] In many European countries, decarbonising the economy will focus on areas such as the energy system, buildings, industry, transport, agriculture and households, among others.

As far as the European Green Deal is concerned, we should talk about the so-called Just Transition. It is based on three pillars. Pillar I – the Fair Transformation Fund (FST) will provide funding primarily in the form of grants. The thematic scope of FST support is broad, covering areas such as entrepreneurship, research and development, energy, transport, digitalisation, environment, labour market and social services. Pillars II and III will be implemented through InvestEU and the European Investment Bank Loan Facility. The Facility will enable investments to be made to help the territories and regions most affected by the transition to a climate-neutral economy, prioritising those with less capacity to cope with the costs.[52]

Residents of the most affected regions will be able to benefit from: employment in new and transitioning sectors, vocational retraining and job search assistance, improved energy efficiency of buildings and investment in the fight against fuel poverty land regeneration and decontamination, land remediation and land use change, better access to cleaner, cheaper and safer energy, the development of digitalisation and digital connectivity, the transition to a closed economy, including waste prevention, reduction, resource efficiency, reuse, repair and recycling, the introduction of cleaner forms of public transport at the local level, including in cities. Alongside

[51] Tomasz Młynarski, 'The European Union in the Energy Transition', (2019) Vol 1 *Krakow International Studies* 31-44.

[52] See: Społeczny Fundusz Klimatyczny: pomysły Parlamentu na sprawiedliwą transformację energetyczną <https://www.europarl.europa.eu/news/pl/headlines/economy/20220519STO30401> accessed 17 December 2022.

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climate law, integral parts of the Green Deal are the Renewal Wave for Europe – greening buildings, creating jobs, improving quality of life.

The Biodiversity Strategy 2030 aims to strengthen protected areas in Europe, restore ecosystems and increase areas of organic agriculture. The need to increase nature's role in human life was the reason for the restoration of biodiversity. It creates the conditions for increasing resilience and preventing the spread of diseases in the future. Crop biodiversity helps to ensure food security in the European Union and around the world.[53]

The impetus for a climate-neutral economy, in turn, is the EU's strategy for energy system integration. Energy system integration means creating a model in which the energy consumption of each sector is combined and planned The strategy includes 38 actions consisting of inter alia: review of legislation, financial support, research and implementation of new technology and the successive phasing out of fossil fuel subsidies.

The European industrial strategy is designed to ensure that, despite the transformation, European companies continue to realise their ambitions and compete at international level. The strategy is based on calls for a greener industry, a digitally enhanced industry, a closed-loop industry.

The EU Strategy for Sustainable and Smart Mobility sets out a plan to steer European transport firmly towards a sustainable and intelligent future. Implementation of the policy measures set out in this strategy could lead to a 90% reduction in emissions from the transport sector by 2050.

Key from the point of view of the European Green Deal are measures for nature. This primarily concerns the protection of endangered species and natural habitats, the development of planning documents for Natura 2000 areas and national parks, and environmental education.

The Farm to Fork strategy was constructed for a fair, healthy and environmentally friendly food system. The EU food system is now the cornerstone of the European Green Deal. The strategy is designed to address the challenges of providing Europeans

[53] See: Strategia na rzecz bioróżnorodności 2030 <https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_pl> accessed 20 December 2022.

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with healthy, affordable and sustainable food, while taking into account fair returns in the food chain and protecting biodiversity. The strategy calls for a reduction in the use of pesticides, antibiotics and fertilisers and an increase in organic farming.[54]

The strategy comprehensively addresses the challenges of sustainable food systems and emphasises the importance of the links between human health, community health and the health of the planet. The strategy sets very ambitious goals, such as reducing the use of pesticides, antibiotics and fertilisers, increasing the share of organic farming. Achieving these objectives will require multiple technological adaptations, mainly of an investment nature, requiring extensive transfer of new knowledge and, above all, high adaptation costs. It aims to address the challenges of providing Europeans with healthy, affordable and sustainable food, while taking into account fair returns in the food chain and biodiversity conservation. The strategy involves reducing the use of pesticides, antibiotics and fertilisers and increasing the share of organic farming.

This strategy must be understood in a broad sense. The EU indicates that it intends to support consumers in making healthy and sustainable food choices, wants to tackle food waste, and to encourage food processors and retailers to produce and sell more varied and sustainable food.

The following objectives, described by the EC as 'ambitious', have been set as part of the Farm to Fork strategy:

– Reduce the use of and risks from chemical pesticides by 50% and the use of hazardous pesticides by 50% by 2030;

– Reduce nutrient losses by at least 50%, while ensuring that soil fertility has not deteriorated This will reduce fertiliser use by at least 20% by 2030;

– Reduce sales of antimicrobials for farmed animals by 50% by 2030;

– Dedicating at least 25 % of agricultural land to organic farming by 2030.[55]

[54] Justus Wesseler, 'The EU's farm-to-fork strategy: An assessment from the perspective of agricultural economics' (2022) Vol 44 *Applied Economic Perspectives and Policy* 1826-1843.

[55] See: Farm to Fork strategy <https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en> accessed 10 December 2022.

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The Farm to Fork strategy is a comprehensive modernisation programme for the agri-food sector. It aims to adapt it to changing economic, social and climatic conditions. The strategy sets ambitious targets for sustainable agricultural production and food processing, natural resource management and climate protection, a sustainable supply chain and fair distribution of market participants' profits, guarantees of food security, and sustainable consumption and reduction of food waste.[56]

The Coronavirus 2019 crisis has highlighted the importance of a robust and resilient food system that works in all circumstances and is able to ensure that citizens have access to a sufficient supply of affordable food. The pandemic has also made very clear the interconnectedness of our health, ecosystems, supply chains, consumption patterns and planetary constraints. It is clear that much more needs to be done in this regard to live a healthy life on a healthy planet. The COVID-19 pandemic is just one example. The increasing incidence of droughts, floods, forest fires and new pests is a constant reminder that the European food system is at risk and needs to become more sustainable and resilient. Through both regulatory and non-regulatory initiatives, the strategy will seek to guide the food industry towards practices that make it easier for consumers to make healthy and sustainable food choices. Voluntary commitments will be supported through an EU Code of Conduct on responsible business and marketing practices.

In addition, in order to encourage the food industry to offer healthy and balanced food products, the Commission proposes to introduce mandatory nutrition labelling and will launch initiatives to encourage reformulation of products,[57] including through nutritional profiling, in order to reduce the promotion (by means of nutrition or health claims) of foods high in fat, sugar and salt. The Commission will consider proposing a proposal that would extend the obligation to indicate the origin or source of certain products, taking full account of the impact on the single market.

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[56] See: EU farm to fork <https://www.europarc.org/european-policy/farm-to-fork-protectes-areas/> accessed 17 December 2022.

[57] Alessandro Caprini, 'EU's Farm to Fork Strategy: What's the future of Europe's ambition to transform food and land use, at home and beyond?' (2022) <https://www.unsdsn.org/sdsn-and-eesc-host-eu-policy-workshop-farm-to-fork-how-to-make-it-work> accessed 12 December 2022.

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The implementation of the Farm to Fork strategy involves many activities in the EU agri-food sector. It aims to change the way food is produced, processed and sold across the EU.[58] The broad measures cover the entire food chain and, in addition, include indications on how to implement the strategy both at policy and financial level and at the level of individual links in the chain, including farms and food businesses. However, the strategy presents a vision rather than specific regulations, so it is only the first step on the road to change, with the aim of creating a unified regulatory framework for a sustainable food system in the EU. Its implementation will mean that a number of adaptation processes will have to be set in motion in individual EU countries.

The aim of the Farm to Fork strategy is sustainable agricultural production, the technology of which will be based on less use of yield-forming and antimicrobial agents, then extensification and a decrease in volume is to be expected A reduced supply of agricultural raw materials and foodstuffs will affect food security. In order to maintain it, there will have to be changes in foreign trade flows, which account for a large share of market balances.

In the context of food security, there may be a decrease in exports or an increase in the share of imports in market supply. A reduction in trade flows and an increase in production costs will result in a deterioration of the sector's competitiveness on external markets. The Farm to Fork strategy involves reducing the use of mineral fertilisers and replacing them with organic fertilisers. Increasing the use of organic fertilisers requires a redirection of livestock production, which generates large greenhouse gas emissions. Any increase in these gases in animal production and fertiliser management can be offset by emission reductions in other sectors of the national economy, e.g. energy and transport, but also in the food industry (due to technological progress and reduced energy consumption).

The strategy envisages that the agri-food sector will operate on the principles of a circular economy. Agricultural producers and the food industry will be stimulated to make adaptation investments, resulting in increased operating costs and product prices.

[58]See: Taking the EU's 'farm to fork' strategy forward <https://epthinktank.eu/2022/10/27/taking-the-eus-farm-to-fork-strategy-forward> accessed 9 December 2022.

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It is worth noting that the reduction in production and the increase in costs and prices do not correspond with product affordability targets.

The implementation of the strategy requires adaptation processes, which raises the question of funding sources for investments in farms and small food businesses. The European Commission envisages support for investments in agriculture, for example, within the framework of sectoral interventions, which will be targeted at agricultural producer organisations and groups. These interventions will require a huge amount of funding to carry out green investments.

The Farm to Fork strategy is a project that formulates objectives and outlines their implementation. The document does not provide specific guidelines in this respect, but the European Commission announces the preparation of relevant regulations and financing tools. The projected assessment of the impact of the strategy on agriculture can only consist of identifying opportunities and threats and trying to predict the impact of these changes on the different actors in the supply chain.

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CHAPTER 2

COMMON AGRICULTURAL POLICY 2022-2027

1. HISTORICAL BACKGROUND *(Loreta Schwarczová)*

The Common Agricultural Policy is the oldest EU policy. Its historical development started in 1962 and is being continuously developed until the present time. The CAP is the comprehensive system consisting of particular components with interrelations presented in the following Figure No 1.

Figure No 1 – Acquis communautaire – legislative base the CAP.[59]

Legal base of the CAP consists of primary and secondary legal sources. The primary legal sources include major international acts, laying down the basic definition of the scope, objectives and instruments, primarily in the form of treaties: The Treaty of Rome (1957), Single European Act (1986), Maastricht Treaty (1992), The Treaty of Amsterdam (1997), The Treaty of Nice (2001) and Lisbon Treaty (2007).

Title III, Articles 38 to 44 of the consolidated versions of the Treaty on European Union[60] and the Treaty on the Functioning of the European Union provisions concerns

[59] Pavol Schwarcz, *European Agricultural and Environmental Policy* (Nitra 2016) 16.

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the matters of agriculture and fisheries (former Articles 32 to 38 of the Treaty on EEC). The products subject to the provisions of CAP – Articles 39 to 44 of the Treaty on European Union and the Treaty on the Functioning of the European Union are listed in Annex I.

Among the secondary legal sources there are legal instruments in the forms of: regulations (binding in all the Member States), directives (binding as to result but states may choose method of implementation), decisions (binding on those to whom they are addressed), recommendations (not binding), opinions (not binding) and Case Law (binding in all the Member States).

The objectives of the CAP (according to Article 39 of the Treaty on the Functioning of the European Union) are specified as follows:

– To increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilization of the factors of production, in particular labour;

– Thus to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture;

– To stabilize markets;

– To assure the availability of supplies;

– To ensure that supplies reach consumers at reasonable prices.

Practically objectives of the CAP have remained unchanged since the Treaty of Rome came into force.

There are several EU institutions and bodies involved in programming and implementation of CAP who are perceived such as *policy* makers of the CAP:

– European Parliament – Committee on Agriculture and Rural Development;

– Council of the European Union – Agriculture and Fisheries Council;

– European Commission Directorate-General for Agriculture and Rural Development;

– European Economic and Social Committee – Agriculture, Rural Development and Environment Section; and

– Committee of the Regions – Commission for Natural Resources (NAT).

[60] European Union, Consolidated version of the Treaty on the Functioning of the European Union <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:12012E/TXT> accessed 12 December 2022.

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Since the CAP belongs to decentralised policy, each member state should appoint relevant set of bodies responsible for implementation of the policy in the territory either at national or regional level.

The main recipients of the CAP are farmers (taking all the subsidies in the frame of the 1st pillar and significant part of 2nd pillar subsidies). In addition to farmers there are other stakeholders as recipients of payments such as: processors, municipalities, Local Action Groups, farmer associations, etc. (in the frame of 2nd pillar).

During the implementation of the CAP there have been particular types of instruments developed There are three categories of such instruments:[61]

– Policy instruments that have been dropped or are effectively defunct (green currencies/switchover mechanism; monetary compensation amount; objective method; target price; threshold price; variable import levy; guarantee thresholds; budgetary stabilizers; butter disposal aids);

– Policy instruments that are still in place, but are likely to diminish in importance over time or in some cases disappear (intervention purchasing (including distillation); export subsidies; quotas; co-responsibility payments; set aside; tariffs); and

– Relatively new policy instruments that are likely to be of importance in shaping the CAP in the future (decoupling; single farm payment; modulation; cross-compliance; financial discipline mechanism; Integrated Administration and Control System). Later on newer policy instruments (2014-2022) were defined such as: greening, young farmers support scheme, single payment scheme.

The EU CAP is based on the three core principles as adopted at the Stresa Conference in 1958, such as: Single market for agricultural products, Community preference, and Common financing of the CAP.

The process of funding of the CAP is based on the principle of existence of 2 pillars: Pillar 1 – direct payments to farmers and market measures, and Pillar 2 – rural development policy (RDP). Funding of pillars was realized from funds: European Agricultural Guarantee Fund (EAGF) and European Agricultural Fund for Rural Development (EAFRD). The first fund was created in September 2005 and came into operation at the beginning of 2007. It replaced the guarantee section of the European

[61] Wyn Grant, 'Policy instruments in the common agricultural policy', (2010) No 33(1) *West European Politics* 22-38.

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Agricultural Guidance and Guarantee Fund. It provided funding for direct payment to farmers, for the management of the agricultural markets and for a number of other purposes such as veterinary and plant health measures, food programmes and information activities. While the European Agricultural Fund for Rural Development was created in September 2005 and came into operation at the beginning of 2007. It replaced the Guidance Section of the European Agricultural Guidance and Guarantee Fund and that part of the guarantee section from which some of the Rural Development measures had been funded It represented the single source of funding from the European Union for Rural Development.

Apart from that The European Maritime, Fisheries and Aquaculture Fund (EMFAF) was created for the EU's maritime and fisheries policies for the period 2021-2027 and serves for supporting small-scale coastal fisheries, young fishers and outermost regions, as well as the promotion of sustainable aquaculture.

Expenditures of CAP were increasing in past 30 years' period of time. It was caused mainly by joining of new Member States into EU. As for the share of support from overall budget of EU, expenditures of CAP decreased from 75% in 80's years to 44,5% in present time.

From the historical development point of view the CAP underwent several significant reform phases while reached the current system of its functioning.[62] In the 1960s, the Commission put into practice essential parts of the CAP. This is the implementation of the so-called *Mansholt's plan (1968 – 1972)*. The aim of these measures were single market rules, which were intended to harmonize agricultural prices and eliminate customs duties among member countries. However, at the end of sixties the European Community has faced persistent problems such as surpluses, low incomes of active farmers, high consumer prices and low efficiency of Community actions in stabilizing markets. In addition to these major problems the CAP faced international criticism because of low self-sufficiency in food production, protection policies in relation to non-member countries and in particular the excessive and non-profit EAGGF expenditure. During this period agricultural holdings predominated with an area of less than 20 ha which were seen as economically inefficient. This inefficiency

[62] Pavol Schwarcz, *cit.*

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was reflected in different income levels in agriculture compared to industry. Agricultural activities were not seen as long-term sustainable solution of employment. Gradually, there was a reduction in agricultural employment and the farms were being transformed to one-person (family) farms. This transition further deepened differences in incomes and had negative effects on social life of farmers and their families. The representatives of the EC reconsidered the issue of cooperatives similar to those in communist countries. Advocates of this option emphasized the differences between these cooperatives and argued that membership will be based on free will and will not affect private property. The goal of the first reform plan prepared by Sicco Mansholt was the support of nearly five million of farmers to give up farming. This process would support the redistribution of land and increase the size of the remaining family farms to make them viable and able to guarantee their owners the average annual income comparable with all the other workers in the region. This measure included support for retirement at the age of 55 years, payment for the abandonment of land to existing farms and retraining grant schemes for young farmers. Proposal for retraining of active farmers aimed at providing social and economic information in order to improve their management. This proposal did not focus only on reducing the number of farms but also on their modernization. The proposed support aimed mainly on improving the production structure, ensuring optimal relationship between capital, labour and land. The aim was to create companies capable of further development that would meet three basic requirements which were demonstrating professional qualifications of farmers, establishment of a fully developed accounting and preparation of development plans for farms with specific objectives. These measures had to ensure an improvement of the overall production structure and organization in order to achieve equilibrium in the markets to avoid overproduction increase.

The Mansholt's plan was rejected by agricultural community and in 1972 were approved only three directives on agricultural reform that targeted the modernization of farms, abandonment of agriculture and training of farmers.

Then came the *Andriessen's reform in 1984* – so called the second crisis era. Although the CAP has achieved objectives focused on self-sufficiency in agriculture, in the 80's it had to deal with the problem of permanent surpluses of most agricultural products. Some of the surpluses were successfully exported, others had to be stored or

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disposed of within the Community. These measures represent additional costs of the CAP budget; they undermined the balance in world markets and did not serve all farmers. At the end, these measures were also criticized by consumers and taxpayers. Overproduction occurred in all products covered by the CAP. Surpluses were a sign of technological progress of farmers, while shortages were considered to be failures of the CAP. Persistent overproduction meant inefficient use of resources. The USA faced a similar problem. The most significant problems were a substantial increase in production which was a result of technological innovation in agriculture, replacing manpower with capital investment and government efforts aimed on reduction of risks in agriculture and food security. The increase of income could be seen in all areas of agriculture. Overproduction induced downward pressure on product prices, income and thus jobs in agriculture. Gradually, there was a growth in the size of farms in some parts of the Community and the reduction of the utilized agricultural land because of urbanization. These pressures, on the other hand forced farmers to increase their production. Also Community policy caused creation of surpluses by its storage policy which consisted of four basic parts. The first part was public purchases which were divided into intervention purchases and sale. These purchases served for distribution of surplus to areas of demand. These activities were limited by the Community budget and the need to avoid undermining of agricultural market. Second tool was the promotion of the storage by the producers themselves. This represented a cheaper solution in comparison with the intervention purchase. Producer received support for storage of overproduction for a given period and the Community acquired another way to control the flow of production on the market. Third option was the withdrawal of production which covered only the area of vegetables and fruits. Producer groups and cooperatives agreed that if the price falls below a certain threshold they would withdraw their production. This system required that the withdrawn production had to be provided to charity, for distillation, further processing (if possible) or as animal food. The fourth possibility was the introduction of a mandatory 10% stock amount which should ensure smooth supply in case of barren year.

The largest overproduction occurred in the area of milk production which was the most supported area by the intervention system. The Community was aware of the need to reduce the production of dairy products, particularly butter and skimmed milk powder (SMP). Since the introduction of the common market organization in 1968, the

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EC tried to slow the milk production and keep the consumer's interest for its consumption. In 1968, the prices of milk, butter and SMP were frozen. This price freeze lasted three seasons but in 1973 was recorded a continuous upward trend and further measures were proposed In 1976 a co-responsibility levy was introduced and was later adopted in 1977 by the Council. However, the budgetary costs to stabilize the markets were very high and grew rapidly along with the production of milk, while overall consumption continued to stagnate. Stocks of butter were equally high and rising and stocks of SMP were declining only through some special measures which enabled their further use in animal nutrition.

After considering the situation on the dairy market the European Commission decided that producers must financially participate in the disposal costs of overproduction. It was decided that the necessary funds would be raised by the application of production thresholds. These thresholds could be applied by various methods:

– Reduction of target and intervention prices if production rises above a certain threshold;

– Limited support for market regulation;

– Participation of producers through taxes to cover the costs of disposal or export; and

– Quotas at national or company level. This method existed in sugar production since the introduction of the common market organization.

The introduction of price thresholds in the years 1983-1984 did not have the expected impact. The Commission was considering a further increase in taxes on shared responsibility (then at the level of 2%). But to be this mechanism financially and socially effective it required a substantial difference in application between member countries which ultimately could lead to an imbalance between Member States and therefore could jeopardize the uniformity of the price mechanism. Considering all these facts the Commission decided to introduce a quota system which would be accompanied by a restrictive price policy. Reference quota was set for each producer on the basis of production in 1981. All surpluses were charged with additional tax to cover all costs associated with the disposal of surpluses. Dairies further charged producer margins according to the criteria set out in legislation. These measures were designed to stabilize milk production without affecting the income of small producers. In order to

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avoid unintended impacts on the structure of milk production and also the beginning young farmers were provided with the Commission also proposed measures to transfer quotas between different companies.

Substantial changes appeared during the third crisis era within *MacSharry's reform* (1992). In the late 80's and early 90's, the Commission prepared a document which analysed the situation of Community agriculture which would help to set out a new policy of the CAP. This paper identified a number of fundamental weaknesses of the CAP. The main drawback continued to be the intervention policy which stimulated the growth of overproduction. In the period of 1977-1988 production grew by an average of 2% per year while the consumption grew only by 0.5%. This unbalanced condition resulted in the creation of reserves in the amount of 3.7 billion ECU from the CAP budget in 1991. Along with the intervention policy there also remained support linked to production which contributed to the formation of surpluses and a greater intensification of production structures which negatively affected the quality of the environment. Whereas the support and price guarantees were proportionately equal to production, this system had an important impact on active farmers' incomes. This situation meant that most support was concentrated in large farms (80% of EAGGF subsidies went to the largest 20% of farms Community). MacSharry's reform introduced two fundamental innovations in the CAP. For the first time the support prices were reduced and active farmers received coupled direct payments as compensation for the expected reduction in income. The amount of direct payments was different because it depended on the fertility of the region. The payment was entitled for limited basic area that could be determined by farmer himself based on utilized agricultural area in the years 1989-1991. It was defined as the amount of compensation in the regions by multiplying the average yield of the region multiplied by the base charge per tonne. Basic payments could vary since it represented the difference between the planned target prices and cost-effective support for selected cereals in the years 1992-1993. This reform influenced mainly the cereal and beef sectors where could be seen the most significant reduction of the intervention price by 30% and 15% respectively. Compensation for large producers was subject to set-aside scheme. The second innovation were accompanying measures of market reforms which included mainly early retirement, agro-environmental schemes and afforestation of land. MacSharry's reform achieved in particular the increasing importance of direct payments in farm

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income, and increases the importance of set-aside. While helping to stabilize the internal market by promoting demand and to reduce inventories.

Next challenging era was launched with issuing *the Agenda 2000*. It was called the „Programme for 21st century“. This document was prepared by the European Commission based on Council's request. It presents the most important problems connected to EU enlargement, its political reform and financial perspectives during 2000 – 2006. Apart from EU enlargement there were also other challenges formulated in Agenda 2000. These challenges considered the restriction of public expanses and growing concern of Member States about their contribution to EU budget. This document has three main parts. The first part focused on political reforms in areas of agriculture and economical and social cohesion. This reform was expected to make these policies more adaptable. Second part focused on pre-accession strategy and assessment of membership application. Third part consisted of financial framework after 2000 and researching of EU enlargement impact. In the 90s there was a gradual stabilization of the markets and reduction of overproduction. This reduction was caused mainly by helped set-aside scheme. This situation helped to keep the production under control. At the same time, the price competitiveness was improved along with the position of agricultural products in the domestic market. In the period from 1992 to 1996 was also recorded favourable development of incomes in agricultural which had a positive impact on producers of cereals and oilseeds Reduction of price support and the introduction of direct payments helped the consumers and farmer's support also became more transparent. Previous reforms had a positive impact on the environment e.g. rationalization of the use of fertilizers and pesticides, set-aside and improved conditions for breeding animals.

However, there were also negative effects of reforms such as favouring relatively intensive breeding through lower feed prices and support for silage. The Commission stressed out the priorities which needed to be addressed The most important of the priorities was the need to maintain the economic and social cohesion, the continuation of the CAP reforms, strengthening the economic growth and employment and improving living conditions through national policies. The Commission also stressed out the need to maintain budgetary discipline after enlargement of the Community.

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The aim of the CAP reforms was to determine the amount of such direct payments, under which over-compensation could be avoided but also would be favourable to supporting the diversification of activities in order to increase competitiveness.

Next challenging era begun with the activities run by Commissioner Franz Fischler (*Luxembourg (Fishler) reform of 2003*). Regular adjustments of the CAP under the pressure from EC residents and developing economy in 2003 led to creation of the new CAP reform. The Luxembourg reform introduced new rural development policy for the period 2007 – 2013 focusing on the competitiveness of the agricultural sector, supporting market orientation, sustainable agriculture and strengthening the rural development policy. It represented radical changes of the CAP by the following measures:

– *Decoupling meant the introduction of single farm payment scheme*. This system had to be introduced until 2007. Farmers had the option of partial or full decoupling of direct payments. In case of complete decoupling, producers had two possible options they could choose from. The first option was called "Historical principle"; when direct payments were determined by overall support for specific farmer during the reference period from 2000 to 2002. The second option was called "Regional principle" where direct payments were calculated according to total regional eligibility compared with the total area of eligible agricultural land. The third option was the introduction of so-called "Hybrid system"; which was divided into static and dynamic. In the static system, the payment was calculated on the basis of historical and regional principles while in a dynamic system the farmer began with historical principle which was gradually replaced by regional principle;

– *Cross-compliance* means that the direct payments are tied to compliance with environmental regulations, food safety and animal welfare. The beneficiaries must hold all land in conditions suitable for cultivation. In the case of non-compliance with specified conditions the beneficiaries can be fined Under this measure an advisory system for farmers has been introduced This service provides feedback on the standards and good conditions. Part of this system consists of internal audits of used materials with respect to the target as environmental protection, food safety and animal welfare;

– *Modulation* created ceilings for CAP expenditures through reducing direct payments. Modulation consisted of transferring funds from the first pillar to the second

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pillar in order to strengthen rural development. In 2003 it was established that direct aid to farmers in the EU-15 (after subtraction of the exempt amount of 5,000 EUR) in 2005 was reduced by 3%, in 2006 by 4% and in 2007 and subsequent calendar years by 5%. 5% modulation rate led to an annual transfer of about 1.2 billion EUR (at current prices) from the first pillar to the second pillar;

– *Improving food quality* through the incentive payment to farmers who voluntarily participated in activities for increasing the quality of agricultural production and processing. Payment was entitled to a maximum of five years and a maximum of 1,500 EUR per year per farm;

– *Support for producer groups* to improve providing information to consumers could be up to 70% of eligible costs; and

– *Long-term set-aside scheme* to enable producers to receive single farm payment. A condition for receiving direct payments was the transfer of at least 10% of arable land under set-aside scheme. Organic farming aimed at the production of "bio-food" did not require this condition. Withdrawn land could not be used for agricultural purposes or for producing commercial goods and it could not be changed every year, as long as it did not require state of the environment.

Providing greater flexibility to farmers, decoupling could improve revenues particularly to farmers in marginal areas through:

– Rural development suport;

– Extension of existing instruments to support improvements in the quality of food, raising standards and animal welfare;

– Simplification of rural development support policy in the second pillar; and

– Improving the balance of support.

It was necessary to meet the general requirements of environmental protection without the use of a specific payment. It is the producer's duty to respect the laws regarding the use of pesticides, fertilizers and water management. It is necessary to respect national and regional guidelines about good practices. However, if the society demands from farmer’s services beyond good service practices the society has to pay for this service.

"*Health Check*" was a mid-term reform of the Fischler reform of 2003. The main innovations of the "Health Check" were:

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– *Gradual phasing out milk quotas*, because the milk quota was completed in April 2015. The annual increase quota by one percent in 2009/2010 and 2013/2014 was taken to ensure a "soft landing". In the case of Italy there was introduced a five percent increase in the years 2009/2010. Farmers who during the periods 2009/2010 and 2010/2011 exceeded their milk quotas by more than six percent, had to pay a levy 50 percent higher than the normal penalty represented;

– *Decoupling of support* meant that direct payments to farmers were no longer linked to the production of a particular product. Some Member States chose to maintain some "coupled" payments linked to production. The remaining coupled payments later separated and transferred to the Single Payment Scheme, with the exception of suckler cow, goat and sheep, for which Member States could retain the then levels of coupled support;

– *Assistance to sectors with specific problems* (measures under Article 68): Member States were able to decide until August 1st 2009 whether they will use up to 10% of their national budget ceilings for direct payments and use that amount to provide support to farmers from 2010:

- Specific types of farming that are important for the protection or enhancement of the environment;
- Improving the quality of agricultural products;
- Improving sale of agricultural products;
- Addressing to specific advantages affecting farmers in the dairy, beef, sheep and goat meat and rice sectors in economically vulnerable or environmentally sensitive areas;
- Assistance to areas subject to restructuring and/or developing programmes in order to avoid abandoning of land and/or to address specific disadvantages for farmers in those areas;
- Assistance in the form of contributions to crop insurance premiums in accordance with the conditions set out in Article 69; and
- Supporting of mutual funds for animal and plant diseases in accordance with the terms of Article 70.

The latest phase of the CAP adaptation process, so called "*The 2013 reform*" was represented and referred to the period from 2014 to 2020. The main features of the reform concerned the following areas:

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– *Conversion from decoupled aid into a multifunctional support system:* the new system brought again instruments coupled to specific objectives or functions. Single farm payments were replaced by a system of payments in stages which consisted of seven components:

- Basic payment;
- Greening payment for environmental public goods (ecological component);
- Additional payment for young farmers;
- "redistributive payment" whereby farmers could be granted additional support for the first hectares of farmland;
- Additional income support in areas with specific natural constraints;
- Aid coupled to production;
- Simplified system for small farmers.

– *Consolidation of the two pillars of the CAP*: the first pillar with funding direct aid and market measures entirely through the European Agricultural Guarantee Fund (EAGF), and the second pillar with the coverage of the rural development through co-financing arrangements. Modulation for direct payments under the second pillar has been scrapped and replaced with a mandatory reduction in basic payments above 150,000 EUR ('phased reduction'). Inter-pillar flexibility has also been enhanced: since 2015, Member States have been able to transfer funds between the two pillars (up to 15% of originally allocated amounts from the first to the second pillar, and up to 25%, for some Member States, of originally allocated amounts from the second to the first pillar.

– *Consolidation of single common market organisation tools:* which served as "safety nets" in cases of price crises or market disruption.

– *More integrated, targeted and territorial approach to rural development*: supposed to achieve better coordination of rural measures with the other structural funds. The wide range of existing instruments within the second pillar of the CAP were expected to be simplified and to be focused on support for competitiveness, innovation, "knowledge-based agriculture", establishing young farmers, sustainably managing natural resources and ensuring balanced regional development.

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2. THE AIMS AND TOOLS OF CAP *(Loreta Schwarczová)*

In relation to the decisions taken within the reform of the CAP in 2013 there were several measures launched in order to adjust the regulatory frameworks to reflect institutional, economic and budgetary developments. New debates were re-opened on rural development policy post 2020, the need to simplify the basic acts relating to the CAP appeared as well as improvements to regulation of the food chain and agricultural markets were suggested All these steps led towards to the "post-2020 CAP reform programme" which was presented by the Commission in the form of its communication on 'The Future of Food and Farming' (November 2017).

The new CAP adopted in December 2021 is built on a performance and results approach which reflects local conditions and needs, while increasing the ambition of the EU in terms of sustainability. In order to be ready to face actual global changes the new CAP aims to promote the transition towards a smart, sustainable, competitive, resilient and diversified agricultural sector with a view to ensuring long-term food security. Main focus principles of the new policy address climate action, the protection of natural resources and the preservation/enhancement of biodiversity, as well as strengthening the socio-economic fabric of rural areas. These principles and characteristics can be identified in specific objectives of the new CAP focusing on social, environmental and economic goals. Set objectives paly also significant role for EU countries in the sense of designing their CAP strategic plans. In the coming new period from 2023 to 2027 the CAP addresses the following 10 objectives, such as: to ensure fair income for farmers; to increase competitiveness; to improve the position of farmers in the food chain; climate change action; environmental care; to preserve landscapes and biodiversity; to support generational renewal; vibrant rural areas; to protect food and health quality and fostering knowledge and innovation.[63]

To ensure fair income for farmers

The set objective represents an essential area because still the EU farm income is below the average income of the economy. The importance of this objective is significant despite this gap decreasing as a result of structural change driven by the outflow of labour from agriculture during the last decade. The role of CAP subsides is

[63] European Commission, Proposed CAP Strategic Plans and Commission observations <https://agriculture.ec.europa.eu/system/files/2022-07/csp-overview-28-plans-overview-june-2022_en.pdf >.

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still important in supporting farm income. However, significant differences exist in the role of support among EU Member States and sectors, while differences are also observed in the assets and liabilities of the farming sector. The variation in the distribution of farm support is affected by the farm structure of EU Member States, and to the extent that this is linked to policy, it can be improved by the CAP (e.g. with capping, redistributive payments, etc.). A combination of measures is needed to make sure that farm income support does not freeze, but facilitates structural adjustment in the direction of addressing future challenges. Mechanisms that are as neutral as possible with respect to their impact on opportunity costs for labour, land and capital, combined with the proposed higher flexibility granted to EU Member States to design the desired distribution of subsidies could improve the targeting of support. A common policy framework and the single market help to minimise potential distortions of competition.

To increase competitiveness

The huge increase on the EU agricultural resources can be identified due to growing food and industrial demand, which is driven by demographic and disposable income changes. On the supply side, there is growing competition for the same production factors (land, labour, capital) and growing pressure on the use of natural capital (with impact on environment and climate). Increasing agricultural productivity in a sustainable way is an essential element to meet the challenges of higher demand in a resource-constrained and climate uncertain world. The EU agricultural productivity is already significant, partly due to increased labour productivity. However, stagnation in recent years is associated with challenges that both the agricultural sector and EU civil society have to face, such as food prices, climate change, or loss of biodiversity. There are plenty of various CAP tools available in order to stimulate productivity gains in EU agriculture, such as research and innovation programmes, new technologies, rural development and infrastructure, efficient advisory systems and continuous training for farm managers.

To improve the position of farmers in the food chain

Farming and related sectors provide numerous job opportunities however agriculture is characterised by a stagnant and low share of value added in the value chain, due to high input costs, variation in production and incorporation of new services. New innovative dynamics appears in the supply chain, not only restricted to product and

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process but also organisational innovation along the chain, triggered by new emerging technologies and evolving consumer demands. The higher concentration of retailers and processors potentially places farmers at a weaker bargaining power within the value chain. Farmers need to respond to changing demand of consumers, which are linked to them through the other actors of the chain. The new CAP aims at strengthening farmers' position in value chains by strengthening cooperation among farmers, enhancing synergies within value chains, supporting the development of market driven production models, fostering research and innovation, increasing market transparency and ensuring effective mechanisms against Unfair Trading Practices.

Climate change action

EU agriculture, including land use and land use change of grassland and cropland, represented 12% of all EU greenhouse gas (GHG) emissions in 2016. The field of agriculture is more vulnerable than most other sectors of the economy to climate change. The importance of the impact depends not only on the climate related effect itself but also on the exposure and vulnerability of human and natural systems. Potential contributions from changes in farm practices to mitigate GHG include the use of mitigation technologies, carbon sink through better soil management, biomass production, reduction in fossil fuel intensity of farm production, and reduction in agricultural production losses and waste. The key role of the EU agriculture is to help to reach the commitments of the Paris' agreement and EU strategies on sustainability and bioeconomy by stepping up its ambition in terms of GHG emissions in view of the potential risks and the stagnation of agricultural emissions since 2010, while ensuring at the same time EU's food security.

Environmental care

From the natural resources point of view, the soil plays the most important role by supplying essential nutrients, water, oxygen and support for plants, the soil provides many other essential services in terrestrial ecosystems. Soil health raises a significant share of concerns although it cannot be unified throughout Europe. It absorbs all the consequences of human presence, both in terms of direct activities we perform on it (intensive cropping, irrigation, compaction, contamination building, etc.) and of weakening its ability to react to other natural forces, as in the case of water erosion. Based on these facts the contribution of EU policies in the field are more than relevant

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and are presented in the form of mandatory and voluntary measures in the new CAP proposal.

To preserve landscapes and biodiversity

Based on existing facts the EU farmland biodiversity is falling. There are several factors which affect the farmland biodiversity among which we can identify the presence (and variety) of habitats – of which core elements often include landscape features such as hedges, field margins, dry-stone walls, isolated trees etc. Major loss of such farm landscape features has been widely reported – and in objective terms, data on this phenomenon are becoming more widely available. In future, among the various steps needed to conserve farmland biodiversity are increases in the density of farmland landscape features under management by farmers. In order to achieve this, the post-2020 CAP should be enhanced compared to the policy's 2014-2020 form – taking into account issues such as links to EU environmental legislation, Member States' overall planning of their use of CAP funding, obligations for individual CAP beneficiaries, and the detail of policy measures available. Improvements in data and measurement (surveys, indicators) in relation to biodiversity and landscapes will also be extremely important.

To support generational renewal

The agricultural sector is undergoing structural changes in terms of number, size and specialisation of farms, while the number of young farmers has been declining over time. Young farmers face significant challenges, such as low availability of land, high land prices and low profitability, difficult access to credit and poor knowledge and training. However, the agricultural sector needs skilled and innovative young farmers to respond to societal demands, from quality food to environmental public goods. The proposals for a future CAP provide a policy framework, which, together with national instruments, will support young people setting up in farming, while creating good working and living conditions in rural areas.

Vibrant rural areas

Predominantly rural areas cover 44% of the EU-28 territory, and account for 19% of the EU population today. Relying more on the primary sector and its links to the food chain in terms of employment, these regions have a per capita income that is significantly lower than the EU average. Both the level of poverty and the share of poor

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people in the total population is higher in rural areas, but the gap between Member States is so significant that comparisons are difficult. The degree of structural transformation and access to the internet play a major role in determining employment prospects in rural areas. Isolated rural areas suffer more from a lack of social inclusion and a poorly performing labour market, compared to those rural regions that are close to urban poles. The CAP plays a significant role in reducing some of the unemployment and poverty pressures on rural areas.

To protect food and health quality

Some of the key challenges facing EU agriculture include improving the response to society's demands on food and health, including safe, nutritious and sustainable food, reducing food waste, and improving animal health and welfare. Antimicrobial resistance (AMR) is a challenge for which the CAP is called to respond and support Community action. A sense of urgency related to AMR warrants increased attention regarding the use of antimicrobials in animal husbandry. AMR is a serious public health threat. It is responsible for an increasing number of deaths, both in the EU and globally, a significant economic burden (healthcare costs and productivity losses), and an unknown cost to animal production. The safety of the food chain is indirectly affected by the welfare of animals, particularly those farmed for food production, due to the close links between animal welfare, animal health and food-borne diseases. The future CAP, in synergy with the new EU regulations on veterinary medicinal products and on medicated feed and with research, can support farmers and the Member States in the fight against AMR.

Fostering knowledge and innovation

Administrative costs are in a certain point of view the result of oversight to ensure taxpayers' money is used for what it is intended for. Administrative burden largely reflects the diversity of CAP instruments, themselves the result of the diversity of EU agriculture. Many initiatives during the past years aimed at simplifying the CAP and reducing bureaucracy for beneficiaries and administrations, with mixed results. For the post-2020 period, the CAP proposes a new partnership between the EU and the Member States. It intends to put more emphasis on delivering results and less on ensuring compliance with detailed rules set at EU level. The main challenge lies in how Member States will grasp the opportunities for simplification while addressing the real national

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and local concerns. Modernisation, with the use of technology for management and administrative purposes, is a key driver for simplification. This should result in rules at beneficiaries' level better adapted to their needs and easier to manage.

3. EUROPEAN STRATEGIES ACCOMPANYING THE CAP *(Loreta Schwarczová)*

The new CAP is built on performance and results basis approach following ten objectives. These objectives create a framework for EU countries´ CAP Strategic Plans which combine aims and specific needs addressed at the EU level. The CAP Strategic Plans cover all the CAP-related and CAP funded instruments that a Member State will implement in its territory for the period 2023-2027 such as direct payments, interventions specific to certain market sectors and support for rural development.

The submission of CAP Strategic Plans by EU countries was given until 31 December 2021 after their approval by the Commission the Plans are expected to be implemented in January 2023. The process of the approval is based on the criteria set in the new CAP Strategic Plan regulation.

According to the proposal of Member States set in draft CAP strategic plans[64] the indicative distribution of CAP funds can be demonstrated as follows:

- 72,6% EAGF/Direct Payments,
- 2,3% EAGF/Sectoral support (apiculture, wine, olive oil and table olives, hops),
- 25,1% EAFRD/Rural Development.

Direct payments

The new CAP takes is focusing on fairer distribution of income support and a greater targeting of support towards small and medium-sized farms. The CAP Strategic Plans will support resilience of the sector by supporting viable farm income. The news form *Basic income support for sustainability* as an annual land-based decoupled payment financed by the EU budget will remain the most important tool to support farmers' income. EU Member States have to dedicate at least 10% of their financial allocation

[64] European Commission, Proposed CAP Strategic Plans and Commission observations (2022) <https://agriculture.ec.europa.eu/system/files/2022-07/csp-overview-28-plans-overview-june-2022_en.pdf> accessed 15 December 2022.

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for direct payments to the redistributive income support tool (CRISS), to increase payments received by smaller and medium-sized farms, which is considered to be an essential key novelty of the new CAP. A derogation to this rule can be requested if Member States demonstrate that redistribution needs are sufficiently addressed through other instruments and interventions of the European Agricultural Guarantee Fund (EAGF) – such as the payment for small farmers, internal convergence, or capping and degressivity of payments. As previous CAP principles, also the new CAP reduces differences in the unitary level of direct payments within EU Member States. By the tool of so called ´internal convergence´ the new CAP aims to progressively equalise the value of decoupled direct payment entitlements within each Member State. By 2026 all basic income support payments on a Member State's territory must have a per-hectare value of at least 85% of the national average. For the new period, out of the 28 CAP Strategic Plans assessed, 8 Member States currently applying payment entitlements have decided to discontinue them already in 2023. Among other Member States, Luxembourg plans to reach full convergence at national level by the end of the period, Greece and Portugal will implement full convergence by 2026 and 5 Member States (Belgium, France, Croatia, Ireland and Italy) plan to reach the minimum required level of internal convergence of 85% by 2026 at national level or by group of territories.

The CRISS aims to ensure a redistribution of support from larger to smaller or medium-sized farms by providing a redistributive payment for the first hectares. In 2020, at EU level, 4,2% of the total direct payments envelope was paid through the redistributive payment and the aid scheme was implemented in 10 Member States. For the new period, out of the 28 draft Plans assessed, 21 respect the minimum 10% ring-fencing for the redistributive payment, with 9 of them planning to dedicate more than 10% of the direct payment allocation to the CRISS. Seven Members States want to use a derogation from the minimum 10% ring-fencing for the redistributive payment, out of which 3 (Denmark, Sweden and Malta) do not intend to apply the CRISS at all as they use the derogation. Thereby, a significant increase of the financial allocation devoted to the CRISS compared to the 2015-2022 redistributive payment can be observed The ranges envisaged for the CRISS, in terms of eligible hectares, vary substantially across Member States, reflecting differences in farm structure and income support needs

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Small Farmer Scheme remain a cornerstone of the EU agriculture as they play a vital role in supporting rural employment and contribute to territorial development. In order to promote a more balanced distribution of support and to reduce the administrative burden for beneficiaries receiving small amounts, Member States can design a specific intervention for small farmers replacing the other forms of direct payments support. Five Member States (Malta, Latvia, Czech Republic, Portugal and Bulgaria) plan to use this intervention. Czech Republic plans a payment by hectare the remaining four countries are applying a lump sum.

Interventions specific to certain market sectors

Coupled income support (CIS) is a voluntary tool to improve competitiveness, sustainability or quality in targeted sectors and productions that are particularly important for social, economic or environmental reasons. To ensure a level playing field between farmers, Member States are restricted by a maximum allocation of their direct payments for the CIS. Members States also have to demonstrate in their strategy how the CIS interventions are consistent with the Water Framework Directive (2000/60/EC). Cumulatively, at the EU level, the trend for CIS is to target mainly livestock (beef & veal, sheepmeat and goatmeat, milk and milk products) with a budget share of approximately 70% of the overall budget of CIS allocations, followed by protein crops and legumes with around 14% and by the fruit and vegetables sector with close to 5%. This trend is similar to the current distribution of voluntary coupled support. Member States justify the important share of CIS to the livestock sector particularly by the low income of farms specialising in grazing livestock. In order to improve the competitiveness and sustainability of the livestock sector and to avoid that the proposed CIS interventions lead to a deterioration of the environmental and climate situation, Member States are requested to clarify the interplay between CIS and other support decisions under the Strategic Plan and to improve the CIS interventions' design and targeting. The overall yearly budget plan for CIS is slightly higher than the current budget dedicated to voluntary coupled support in 2022 (+ 6%) at EU level, with heterogeneity across Member States. Among the three main sectors supported, compared to 2022 for the 27 Member States, there is a large increase of the CIS for protein crops/legumes (+26%), for fruit and vegetables (+13,5%) but also for the livestock sector (+2%). Among other sectors supported by CIS, there is a large increase for rice (+68%), cereals (+37%) and starch potatoes (+20.5%) - whereas a decrease is

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observed for sugar beet (-6%), olive oil (-82%) and silkworms (-56%). There is an increasing effort by several Members States to reduce the EU's import dependency in the protein crops and legumes sector, which are nitrogen-fixing crops and do not require N-fertilisers.

The new CAP allows EU Members States to extend sectoral intervention to 'other'2 sectors within the limit of 3% of the national direct payments allocation. Several Members States use this opportunity to plan support for several sectors but most Member States plan sectoral interventions only in the fruit and vegetables sector, the apiculture sector and the wine sector. All plans envisage support for producer cooperation and participation in producer organisations. This is done to improve farmers' position in the food chain and increase the value added of agricultural products. There is high variability among Member States regarding sectors targeted and budgets dedicated to those interventions.

Many Member States propose investment support similar to support provided in their rural development programmes 2014-2022. This includes support for on-farm agricultural investments as well as support for processing, marketing and/or development of agricultural products. Proposed Strategic Plans show that Member States plan to support around 3% of the total number of farms in the EU with support for farm modernisation linked to different economic specific objectives. As regards support outside the agricultural sector, 17 Strategic Plans are planning interventions under rural development for nonagricultural activities.

Support for rural development

During the implementation period of the new CAP it will be the first time when receiving income support and rural development funding will be linked to farmers' respect of the social and labour rights of farm workers enshrined in the relevant legislation. Farmers have to provide their workers with a written description of their agreed working conditions and will have to ensure a safe and healthy working environment. Where farmers are found to be in breach of the rules their CAP payments will need to be reduced The presence of support for vibrant rural areas in 20 CAP Strategic plans is welcomed, as is the higher average percentage of 7% of the total EAFRD reserved for LEADER compared to 5.5% in the current programming period.

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However, the final level of support is also dependent on the decisions Member States have taken for transfers from or to the EAFRD.

In spite of significant needs identified in relation to the socio-economic development of rural areas, the majority of the CAP strategic plans appear to rely mainly on LEADER related interventions to address them. Proposed Strategic Plans tend to assign a more limited financial allocation to address relevant specific objectives in comparison to priority 6 of the current Rural Development Programmes (the priority of promoting social inclusion, poverty reduction and economic development in rural areas). 16 Member States plan some – but often very limited – interventions beyond LEADER. 16 CAP Strategic Plans support the creation of new jobs in rural areas and 10 have not provided figures on this issue.

An indicative and approximate cumulative distribution of the public expenditure for rural development proposed by Member States in CAP Strategic Plan proposals is demonstrated in the Chart No1 below.

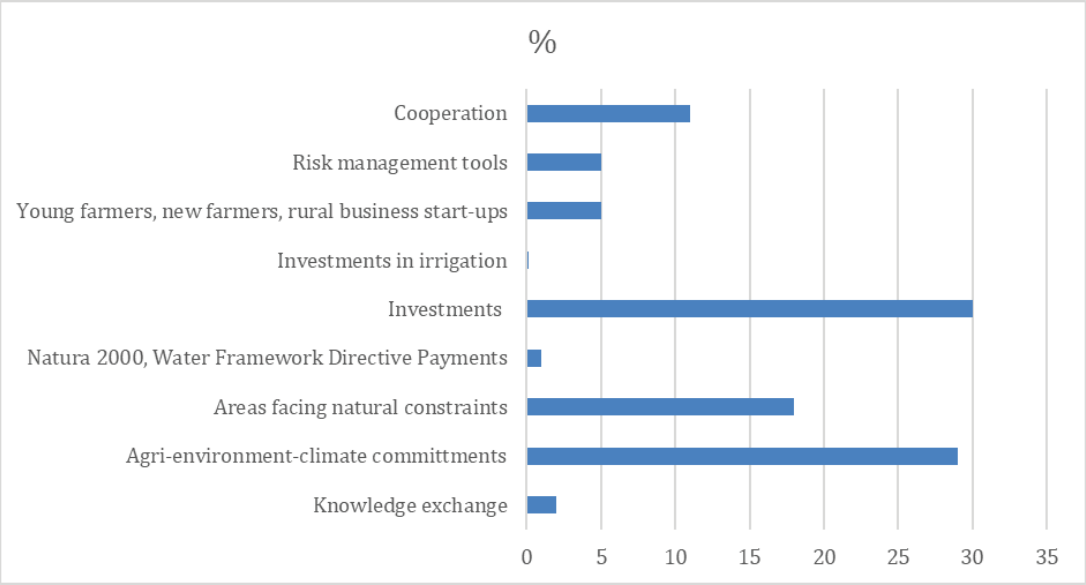

Chart No 1 Cumulative distribution of the public expenditure for rural development proposed by Member States in CAP Strategic Plan proposals.

Source: European Commission.[65]

[65] European Commission <https://agriculture.ec.europa.eu/cap-my-country/cap-strategic-plans_en#publishednationalstrategicplans>.

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CHAPTER 3

COMPARATIVE ANALYSIS OF EU REGULATIONS ASSOCIATED TO THE GREEN DEAL TARGETS

1. INTRODUCTION (*Izabela Lipińska*)

The European Green Deal (EGD), as indicated in chapter two, is the strategy of the European Union[66] for the implementation of the UN 2030 Agenda for Sustainable Development and the Sustainable Development Goals.[67] It responds to the climate crisis and strong environmental degradation processes. It encompasses all areas of society, the economy and the environment, with the aim of achieving climate neutrality for the Community by 2050. The document identifies eight closely interlinked and complementary areas of action, the transformation of which will be of the greatest importance for the achievement of the adopted objectives. Among these, those that are directly or indirectly related to agriculture through agricultural production, food management, processing, ecosystem services, as well as greenhouse gas removals from agricultural land use have been defined

The implementation of the EGD in the agricultural sector is done through two strategies, i.e. 'from farm to fork', aiming at a fair, healthy and environmentally friendly food system, and 'protecting and restoring ecosystems and biodiversity'. These are defined by the EU legislator and implemented by individual Member States. Each of the strategies consists of a number of actions and specific instruments are assigned to them, and their funding has been designed at EU level.

In order to implement the strategies adopted, the Member States were obliged to draw up national CAP strategic plans on the basis of objective conditions. Accordingly, each of them, in the course of developing the plans, had to analyse their specific situation and needs and set final objectives related to the achievement of CAP

[66] European Commission, *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal* (2019 COM/640 final).

[67] United Nation General Assembly, *Resolution: Transforming our world: the 2030 Agenda for Sustainable Development* (New York 2015).

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objectives. In addition, the states had to develop interventions that would achieve these objectives and, at the same time, be adapted to their specific national and regional conditions. As envisaged by the legislator, this process should reinforce the principle of subsidiarity in a common EU framework, while ensuring compliance with the general principles of Union law and the objectives of the CAP.

At the same time, in order to ensure that Member States set appropriate final objectives and that interventions take the right form to maximise their contribution to CAP objectives, it was necessary to base the strategy of the strategic plans on a prior SWOT analysis of local conditions and an assessment of needs in relation to CAP objectives.

As a result, the adopted strategic plans differ. Hence, the following section analyses the legal solutions of selected instruments for the implementation of the CAP, including in particular those affecting agri-environmental aspects, which have been adopted at the level of selected Member States. Further considerations with a view to ensuring safe food produced using sustainable practices relate to organic farming, including reducing the use of pesticides, as well as the need to extend the use of sustainable farming practices specifically to animal welfare, which manifests itself, inter alia, in reducing the use of antibiotics in livestock production. With regard to improving environmental performance, issues such as water protection and the introduction of voluntary ecoschemes for farmers are discussed.

2. USE OF PESTICIDES IN AGRICULTURE PRODUCTION (*Krzysztof Różański*)

As a preliminary to further considerations, it would be useful to refer to the difference between the terms: 'pesticides' and 'plant protection products' (PPP). Pesticide is defined as something that prevents, destroys or controls a harmful organism (pest) or disease, or protects plants or plant products during production, storage and transport.[68] Pesticide is a broader term than plant protection product since it covers non-plant/crop uses such as biocides. Plant protection products are pesticides which farmers use to protect crops against harmful organisms, pests and diseases. In the EU, sales of

[68] See: <https://eur-lex.europa.eu/legal-content/EN/LSU/?uri=celex:32009R1107> accessed 25 March 2022.

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the active substances used in PPPs exceed 350,000 tonnes per year.[69] PPPs can impact water and soil quality, biodiversity and ecosystems, and they can end up as residues in food.

The Common Agricultural Policy can help support sustainable PPP use through, for example, compulsory farm advisory systems and by providing financial support to measures such as organic farming and environmental schemes. Linking payments under the common agricultural policy to legal requirements can help in enforcing those rules, but applying integrated pest management is currently not a requirement for receiving payments under the CAP.

The marketing and use of PPPs is regulated by a large body of EU legislation. Plant protection products cannot be placed on the market or used without prior authorisation. A dual system is in place, under which the European Food Safety Agency (EFSA) evaluates active substances used in plant protection products and Member States evaluate and authorize the products at national level. While EFSA is responsible for the scientific risk assessment of pesticides in all areas – from occupational exposure to the environment – the European Chemicals Agency (ECHA) is responsible for the harmonized classification of chemical pesticides requiring labeling as hazardous substances. In addition, several pesticides have non-agricultural uses, which means that under EU legislation they must be registered as biocides, medicines or assessed under other EU legislation. As a consequence it is not unusual for ECHA to carry out hazard and risk assessments for a molecule (or very similar molecule) that has also been assessed by EFSA for use as a pesticide.[70]

Plant protection products are principally regulated by framework Regulation (EC) No 1107/2009.[71] All matters related to legal limits for pesticide residues in food and feed are covered by Regulation (EC) No 396/2005.[72] This regulation also contains

[69] The European Court of Auditors, 'Sustainable use of plant protection products: limited progress in measuring and reducing risks' (2020) No 5 *Special Report* 4.

[70] European Food Safety Agency, 'How pesticides are regulated in the EU. EFSA and the assessment of active substances' (2018) *Report* 4.

[71] Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC [2002] OJ L 309/1.

[72] Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC Text with EEA relevance [2005] OJ L 70/1.

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provisions on official controls of pesticides residues in food of plant and animal origin that may arise from their use in plant protection.

2.1 USE OF PESTICIDES IN THE EUROPEAN UNION LAW (*Krzysztof Różański*)

One of the most relevant legislation regulating PPPs is the Regulation (EC) No 1107/2009, which lays down rules for authorizing the sale, use and control of plant protection products in the European Union, and recognises the precautionary principle. It is complemented by the sustainable use directive (Directive 2009/128/EC) which sets out rules for the sustainable use of pesticides.[73] The Regulation (EC) No 1107/2009, applies to products used to protect or preserve plants, influence their growth or destroy and stunt undesired plants. An active substance (any chemical, plant extract or micro-organism that acts against pests or on plants) shall be approved if PPPs containing the active substance: are effective, have no immediate or delayed harmful effect on human health, have no unacceptable effects on plants or the environment and do not cause unnecessary suffering or pain to vertebrates. Residues of these products must not have any harmful effects on human health, including that of vulnerable groups, nor any unacceptable effect on the environment.

The European Commission or the relevant national authority in each EU Member State may attach criteria and restrictions, such as minimum degree of purity, type of preparation and manner and conditions of use, when approving an active substance or authorising a plant protection product for use. The Commission gives its first approval for an active substance for a period not exceeding 10 years. A renewal of approval may be for no more than 15 years. Applications for approval of an active substance, accompanied by the necessary scientific information, must be submitted to national authorities. They have a maximum of 12 months to examine the request, which is then peer-reviewed by Member States and the European Food Safety Authority. Holders of an authorisation of a plant protection product for use in one Member State may use the mutual recognition procedure to request its use in another.

The Regulation (EC) 396/2005 defines a fully harmonised set of rules for pesticide residues. This Regulation lays down provisions for the setting of EU pesticide

[73] Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides [2009] OJ L 309/71.

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maximum residue levels (MRLs) in food and feed. Imports of plant and animal products must comply with such MRLs set by the European Commission. Annexes to Regulation (EC) 396/2005 set out the list of products subject to control and MRLs applicable to them to protect consumers from exposure to unacceptable levels of pesticide residues.

The EU legislation on chemicals and pesticides aims to protect human health and the environment and to prevent trade barriers. They include provisions for the marketing and use of certain categories of chemical products, a set of harmonised restrictions relating to the marketing and use of certain dangerous substances and preparations and rules for dealing with serious accidents, as well as procedures for the export of dangerous substances. The term 'pesticides' groups together substances used to control, eradicate and prevent the appearance of organisms considered harmful.[74] Pesticides include biocides and plant protection products. The most important development at EU level is the REACH Regulation[75], which regulates the registration and evaluation of hazardous substances, as well as their authorisation and restriction. As part of the European Green Deal, and in particular the new strategies of 'chemicals for sustainable development', 'farm-to-table' and 'biodiversity'.

The above-mentioned REACH Regulation established a new legal framework for the development, testing, manufacture, placing on the market and use of chemicals and replacing some 40 previous legislative acts. The aim of REACH is to better protect people and the environment from possible chemical hazards and to promote sustainable development. REACH established a single system for all chemicals and shifted the burden of proof for the risk assessment of substances from public authorities to companies. In addition, the regulation calls for the replacement of the most hazardous chemicals with suitable alternatives.

The European Chemicals Agency (ECHA), established under the regulation and based in Helsinki, is responsible for managing the technical, scientific and

[74] See: Chemicals and pesticides <https://www.europarl.europa.eu/factsheets/en/sheet/78/chemikalia-i-pestycydy> accessed 15 December 2022.

[75] Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Text with EEA relevance)Text with EEA relevance [2006] OJ L 396/1.

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administrative aspects of REACH, as well as ensuring consistent implementation of the regulation. November 2010 marked the first deadline for sectors to register: (i) all substances in quantities of 1,000 tonnes per year (t/y) and above; (ii) substances highly toxic to the aquatic environment in quantities of 100 t/y and (iii) most hazardous substances (carcinogenic, mutagenic or reprotoxic substances (CMRs)) manufactured or imported in quantities of 1 t/y and above. In June 2013, the deadline for the registration of all substances produced or imported in quantities between 100 and 1 000 t/y expired. This process was completed in June 2018 with the registration of substances placed on the market in quantities of 1 to 100 t/y.

In February 2013. The Commission published a review of the REACH Regulation, concluding that it did not require any changes to the enacting part, although progress could be made in reducing the financial costs and administrative burden on companies and introducing methods to replace animal testing. In 2017. The Commission carried out a second evaluation under the Regulatory Fitness and Efficiency Programme (REFIT), the results of which were published in COM(2018)0116.[76] The evaluation generally concludes that REACH is effective, but identifies opportunities for further streamlining, simplification and burden reduction, which can be achieved by implementing the measures outlined in the report. These measures should be implemented in line with the renewed EU Industrial Policy Strategy, the Roadmap for a Closed Economy and the 7th Environmental Action Programme.

14 October 2020. The Commission has published a new chemicals strategy for sustainability. It is part of the EU's goal to achieve zero emissions, a key commitment under the European Green Deal. The strategy includes revising the REACH regulation, banning the most harmful chemicals in consumer products such as toys, childcare articles, cosmetics, detergents, food contact materials and textiles, unless they are proven to be essential for society, and ensuring a safer and more sustainable use of all chemicals.

Parliament played a key role in the preparation of REACH. It ensured that certain provisions were enshrined in the regulation at first reading – most notably, in the

[76] Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee Commission General Report on the operation of REACH and review of certain elements Conclusions and Actions Conclusions and Actions, COM/2018/0116 final.

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registration chapter, the introduction of a targeted approach to data requirements for existing substances produced in smaller quantities (1-10 tonnes) and the 'one substance – one registration' (OSOR) approach to reduce costs by providing for exemptions from registration in specific cases. In order to minimise animal testing, the Parliament introduced a provision to oblige companies to share data obtained from animal tests (for a reasonable fee) to avoid duplication of experiments. In the chapter on the authorisation procedure, Parliament approved a stricter approach whereby all substances of very high concern can only be authorised if no suitable alternative solutions or technologies exist.

10 July 2020 the Parliament adopted a resolution setting out its priorities for a future chemicals strategy for sustainability. Among other things, the Parliament asked that the strategy be used to achieve coherence and synergies between chemicals legislation, health and safety at work and related EU legislation, including specific and general product legislation, water, soil and air legislation, legislation on pollution sources, including industrial installations, and waste legislation. He stressed that the strategy should be based on irrefutable and up-to-date scientific evidence, taking into account the risks posed by endocrine disruptors, hazardous chemicals in imported products and the combined effects of different chemicals and very persistent chemicals.

It is also worth mentioning the process of placing on the market of animal and plant products. The Regulation (EU) 2017/625[77] outlines the procedure to evaluate whether when importing animals and animal products, the guarantees on residues of chemical substances presented by a third country can be deemed equivalent to those requested to the products produced under EU rules. Such products shall only be imported from the authorised countries detailed in the following table, included in Regulation (EU) 2021/405.[78] Inclusion and retention on this list shall be subject to submission by the

[77] Regulation (EU) 2017/625 of the European Parliament and of the Council of 15 March 2017 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products, amending Regulations (EC) No 999/2001, (EC) No 396/2005, (EC) No 1069/2009, (EC) No 1107/2009, (EU) No 1151/2012, (EU) No 652/2014, (EU) 2016/429 and (EU) 2016/2031 of the European Parliament and of the Council, Council Regulations (EC) No 1/2005 and (EC) No 1099/2009 and Council Directives 98/58/EC, 1999/74/EC, 2007/43/EC, 2008/119/EC and 2008/120/EC, and repealing Regulations (EC) No 854/2004 and (EC) No 882/2004 of the European Parliament and of the Council, Council Directives 89/608/EEC, 89/662/EEC, 90/425/EEC, 91/496/EEC, 96/23/EC, 96/93/EC and 97/78/EC and Council Decision 92/438/EEC [2017] OJ L 95/1.

[78] Commission Implementing Regulation (EU) 2021/405 of 24 March 2021 laying down the lists of third countries or regions thereof authorised for the entry into the Union of certain animals and goods intended

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third country concerned of a plan setting out the guarantees which it offers as regards the monitoring of the groups of residues and substances referred to in Annex I to the Directive.

Member State authorities are responsible for the control and enforcement of the MRLs. Such control will be carried out by means of a coordinated multiannual Community control programme of pesticide residues in food of plant and animal origin established by the Regulation (EU) 2022/741.[79] According to this scheme, during the years 2023, 2024 and 2025, National reference laboratories for detecting residues in the Member States, shall take and analyse samples for the pesticide/product combinations set out in the Regulation. However, the Regulation (EU) 2021/601[80] continued to apply to samples tested until 1 September 2023.

According to the Regulation (EU) 2021/1355[81] Member States shall establish multi annual national control programmes for pesticide residues, as part of their respective multi annual national control plan. Each Member State shall take a sufficient number and range of samples of food and feed to ensure that the results are representative of the market, taking into account the results of these multi annual national control programmes. The sampling shall be carried out as close to the point of supply as is reasonable, as stated in Regulation (EU) 2021/2244.[82] Furthermore, according to the provisions of Regulation (EU) 2019/1793 [83], official controls of the presence of

for human consumption in accordance with Regulation (EU) 2017/625 of the European Parliament and of the Council [2021] OJ L 114/118.

[79] Commission Implementing Regulation (EU) 2022/741 of 13 May 2022 concerning a coordinated multiannual control programme of the Union for 2023, 2024 and 2025 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin and repealing Implementing Regulation (EU) 2021/601 [2022] OJ L 137/12.

[80] Commission Implementing Regulation (EU) 2021/601 of 13 April 2021 concerning a coordinated multiannual control programme of the Union for 2022, 2023 and 2024 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin [2021] OJ L 127/29.

[81] Commission Implementing Regulation (EU) 2021/1355 of 12 August 2021 on multi annual national control programmes for pesticides residues to be established by Member States [2021] OJ L 291/120.

[82] Commission Delegated Regulation (EU) 2021/2244 of 7 October 2021 supplementing Regulation (EU) 2017/625 of the European Parliament and of the Council with specific rules on official controls as regards sampling procedures for pesticides residues in food and feed C/2021/7133 [2021] OJ L 453/1.

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hazardous substances on certain commodities of non-animal origin from selected third countries laid down in such Regulation have been increased and shall be carried out at the Member State's Border Control Posts (BCPs).

The new CAP, due to take effect in 2023, will serve to promote new opportunities for the sustainable use of pesticides, ensuring that agricultural practices are more in line with the objectives of the farm-to-table strategy. In their CAP strategic plans EU countries can flexibly adapt strategies and interventions accordingly, which can reduce their dependence on pesticides, in line with EU objectives.

2.2 USE OF PESTICIDES IN THE NATIONAL LAWS

Italy (Andrea Saba)

Plant protection products should be used in such a way that they do not pose a threat to the health of humans, animals and the environment, and as adopted at the EU level, their control lies with the national legislator.

Respectively, Italian law regulates the authorisation process for plant protection products, establishing the use of the products as well as the specific requirements for producers, sellers, and users. Within the EU framework established by the Directive 128/2009,[84] Italy applies the precautionary principle in regulating the use of plant protection products at the national level, within the harmonization efforts for the evaluation and placing on the market of active substances and mixtures as well as the maximum levels of permissible residue (MRL).[85] The Italian legal framework is structured on two key areas that establish the authorisation procedure for plant protection products and the definition of national measure for their sustainable use.[86]

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[83] Commission Implementing Regulation (EU) 2019/1793 of 22 October 2019 on the temporary increase of official controls and emergency measures governing the entry into the Union of certain goods from certain third countries implementing Regulations (EU) 2017/625 and (EC) No 178/2002 of the European Parliament and of the Council and repealing Commission Regulations (EC) No 669/2009, (EU) No 884/2014, (EU) 2015/175, (EU) 2017/186 and (EU) 2018/1660 [2019] OJ L 277/89.

[84] Directive (EC) 2009/128/EC establishing a framework for Community action to achieve the sustainable use of pesticides [2009] L 309/71.

[85] The academic literature on the application of the precautionary principle in the agricultural and food sector is well-established See *ex multis* Paolo Borghi, "Il rischio alimentare e il principio di precauzione' in Luigi Costato, Alberto Germano' and Eva Rook Basile (eds), *Trattato di diritto agrario* (Giuffre 2011), Vol III, 53; Luigi Costato, 'La Corte di giustizia, il riavvicinamento delle legislazioni e il principio di precauzione nella legislazione alimentare' (2005) *Diritto e giurisprudenza agraria e ambientale* 648.

[86] See: Eugenio Caliceti, 'La regolazione dell'uso dei prodotti fitosanitari, tra fonti comunitarie, statali e locali' (2017) 2 *Rivista di diritto agrario* 409.

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Decree of the President of the Republic (D.P.R.) No 290 of 23 April 2001 provides the authorisation procedure for the production, placing on the market and sale of plant protection products.[87] While all active substances contained in plant protection products are evaluated based on scientific dossiers and their admission is decided at the European level, commercial formulations are registered at the Italian level.[88] Italy follows the procedure of *mutual recognition* which allows the holder of the authorisation to apply, under certain conditions, for an authorisation for the same plant protection product, the same use and under the comparable agricultural practices in another Member State.[89] This applies in particular to Member States of the same homogeneous zone, but it can also be granted between states in different homogeneous zone as long as the authorisation for which the application was made is not used for the purpose of mutual recognition in another Member State within the same zone. The Member States are grouped into 3 homogeneous zones, Northern, Central and Southern. Italy is part of the Southern zone together with Bulgaria, Greece, Spain, France, Cyprus, Malta, and Portugal.[90]

In Italy, the Ministry of Health authorises the placing on the market of plant protection products containing active substances admitted at the EU level.[91] The validity of the authorisation can reach a maximum of 10 years.[92] Subsequently, a new scientific evaluation on toxicological, environmental, agronomic aspects is needed to be re-registered.[93] The Ministry can grant exceptional authorisations for substances not

[87] Decree of the President of the Republic 23 April 2001, No 290, on the regulation for the simplification of authorisation procedures for the production, placing on the market and sale of plant protection products and related adjuvants (No 46, Annex 1, Law No 59/1997). The Decree of the President of the Republic 23 April 2001, No 290 has been modified by Decree of the President of the Republic No 55/2012, in compliance with the Regulation (EC) 1107/2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC (2011) L 309/1.

[88] See: Roberto Fusco, 'Autorizzazione dei pesticidi e principio di precauzione' (2016) 4 *Rivista di diritto alimentare* 45.

[89] The procedure for mutual recognition of authorisations is provided under Articles 40, 41 and 42 of the Regulation (EC) 1107/2009.

[90] See: Article 3, paragraph 17 of the Regulation (EC) 1107/2009.

[91] See: Decree of the President of the Republic 290 of 23 April 2001, as modified by Decree of the President of the Republic No 55/2012.

[92] The authorisation procedure is outlined in Article 21 of the Decree of the President of the Republic 290 of 23 April 2001, while the characteristics of the authorisation measure are indicated in Article 22.

[93] The authorisation renewal procedure is provided under Article 11 Decree of the President of the Republic (D.P.R.) No 290 of 23 April 2001. Pursuant to art. 12, the modification of the authorisation of

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authorised at European Union for a period not exceeding 120 days. The Ministry of Health may, even before the authorisation expires, suspend, or revoke the use of a plant protection product if there is scientific evidence of serious damage to human health or the environment, providing for a transitory period for the disposal of residual stocks, at the end of which the use of that product is prohibited and any stocks must be disposed of as special hazardous waste. The label of a product may undergo variations as regards the authorised crops, the doses, and the waiting times, also at the request of professional or scientific bodies. To provide open data on the authorised plant protection products and their label variations, the Ministry of Health published an updated databases on the official website.

The Legislative Decree No 150 of 14 August 2012 implements Directive (EC) 2009/128/EC and defines the measures for a sustainable use of plant protection products, in order to reduce risks and impacts on human health, the environment and biodiversity; and, to promote the application of integrated pest management and alternative approaches or non-chemical methods. The Legislative Decree 69/2014 establishes the sanctions for failure to comply with the provisions of Regulation (EC) 1107/2009, in particular the use of unauthorised products, non-compliance with the prescriptions on the label, non-compliance of the terms for the disposal of revoked products, incorrect storage of products. The Ministry of Agriculture, the Ministry of the Environment, the Ministry of Health as well as the Regions and Autonomous Provinces of Trento and Bolzano – each within the scope of their own competences – provide for the planning, implementation, and monitoring of the measures envisaged by the Legislative Decree 150/2012 and those envisaged by the National Action Plan. The Interministerial Decree of 22 January 2014 adopts the National Action Plan for the sustainable use of plant protection products, which is characterized by long-term objectives.[94] It aims to coordinate and monitor a process of change in the practices of

a plant protection product can take place (also upon request by one of the parties) in application of the procedures envisaged by Articles 44, 45 and 51 of Regulation (EC) No 1107/2009 provided that the requirements continue to be met pursuant to art. 29 of the same regulation. The authorisation is modified if there is evidence of new aspects on the agronomic, health and environmental characteristics of the authorised plant protection products or if the trademark, the name of the company or registered office of the holder of the authorisation, or the packaging materials changed.

[94] See: Interministerial decree of 22 January 2014, Adoption of the National Action Plan for the sustainable use of plant protection products, pursuant to Article 6 of Legislative Decree No 150 of 14 August 2012 on the Implementation of directive 2009/128/EC which establishes a framework for community action for the sustainable use of pesticides.

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using plant protection products towards more environmentally-friendly and sustainable practice, with particular reference to agronomic practices for the prevention of harmful organisms, referred to in Annex III of Legislative Decree 150/2012. The Plan provides for improved solutions to reduce the impact of plant protection products also in non-agricultural areas that may affect the population, such as urban areas, roads, railways, gardens, schools, public play areas and all their service areas.

The National Action Plan is the technical-operational document, required by Directive (EC) 128/2009, necessary to ensure the implementation of the Decree and the achievement of the objectives set by the legislation. The National Action Plan concern, *inter alia*, the introduction of a new certified training system for obtaining and renewing qualifications for professional users, sellers and consultants; specific provisions for the protection of the environment and the identification of phytosanitary defense with low phytosanitary input within mandatory integrated pest management, voluntary integrated pest management and organic farming; and, the introduction of mandatory control of sprayers and more restrictive measures for the handling and storage of plant protection products, their containers and residual stocks.

The Article 14 and 15 of the Legislative Decree 150/2012 also establishes specific measures that must be adopted for the protection of the aquatic environment and drinking water and the reduction of the use of plant protection products or risks in specific areas. Consequently, mitigation and restriction measures are adopted by the Regions related to the use of plant protection products near water bodies and areas involved in the supply of drinking water and in other areas, such as water bodies intended for recreational purposes. The Legislative Decree 150/2012 also provides for the establishment of restrictive provisions aimed at protecting the environment and biodiversity within the protected areas which include areas belonging to the Natura 2000 network (Directive 2009/147/EC and Directive 92/43/EEC), and wetlands defined by the Ramsar Convention of February 2, 1971.[95] Within this framework, the relevant Ministries and the Regions, in agreement with the protected area management bodies, will have to adopt specific measures to reduce the use of plant protection products and

[95] See: Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds [2009] L 20/7; Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora [1992] L 206/7; Convention on wetlands of international importance especially as waterfowl habitat, Ramsar, 2 February 1971.

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the risks associated with their use, based on the specific characteristics of the sites to be protected The Regions are required to promote dissemination and training activities for professional users who operate within the protected areas and may provide for support schemes for the adoption of voluntary integrated pest management, the establishment of hedges and buffer strips.

Under Article 18, the Legislative Decree 150/2012 introduces integrated pest management strategies with low input of plant protection products.[96] According to the Decree, integrated pest management and organic production (carried out in accordance with EU law)[97] are considered low-intake of plant protection products. A definition of integrated pest management is provided under Article 2 of the Law 4/2011: "integrated production is defined as the agri-food production system that uses all means of production and defense of agricultural production from adversity, aimed at minimizing the use of synthetic chemicals and rationalizing fertilization, in compliance with ecological, economic and toxicological principles".[98] The main objective remains the reduction of the risk deriving from the use of plant protection products, as well as the gradual reduction of the quantities of products used The achievement of this objective is pursued through the implementation of more sustainable defense strategies such as integrated phytosanitary defense strategies and rational management of agronomic practices; and pest control methods used in organic systems.

The Legislative Decree 150/2012 provides a traceability system on the marketing and use of plant protection products. Operators who market and sell plant protection products are required to record data on the sale of each plant protection product on an electronic form and to transmit the same data to the National Agricultural Information System (SIAN). The sheet refers exclusively to sales made to professional users and must contain, in addition to data relating to the operator, information relating to the characteristics (name and registration number) and the quantity of product sold. In addition, the dealer is obliged to register the purchaser's authorisation number.

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[96] See: Eloisa Cristiani, 'Quali regole per un'agricoltura "sostenibile?' (2019) *Rivista di Diritto Agrario* 4.

[97] See: ex multis Eloisa Cristiani, *La disciplina dell'agricoltura biologica fra tutela dell'ambiente e sicurezza alimentare* (Giappichelli 2004); Nicola Lucifero, 'Il regolamento (UE) 2018/848 sulla produzione biologica. Principi e regole del nuovo regime nel sistema del diritto agroalimentare europeo' (2018) *Rivista di Diritto Agrario* 3.

[98] Law No 4 of 3 February 2011 establishing provisions on labelling and quality of food products.

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Poland (Krzysztof Różański)

In regard to the regulation of plant protection products in Poland, it should be emphasised that Polish agricultural entrepreneurs are bound by EU and national legislation in this respect. As to the first, it has been analysed in the paragraphs above. As far as Polish legislation is concerned[99], the use of plant protection products is regulated by the Act on Plant Protection Products of 8 March 2013.[100] It obliges farmers to keep records of treatments with plant protection products and to continuously improve their skills in their use.

Furthermore – according to the provisions of that Act – persons carrying out plant protection treatments in agriculture or forestry should have completed the relevant training. Completion of specialised training will also be required for professional users applying PPPs in non-agricultural areas. A professional user is defined in the provisions of that Act as a natural person who applies plant protection products for purposes other than his/her own non-commercial needs, in particular in the framework of a business or professional activity, including agriculture and forestry. A list of entities authorised to organise training is available on the website of the State Plant Protection and Seed Inspection.[101]

In accordance with article 35 of the aforementioned Act, plant protection products must be used in such a way as not to pose a risk to the health of humans, animals and the environment, including preventing the drift of plant protection products into areas and objects that are not the target of treatment with these products, and planning their use taking into account the period during which people will be present in the targeted area.

Since 1 January 2014 – in accordance with EU regulations – Polish farmers have had to comply with the principles of integrated pest management. The rule is to use all

[99] Monika Król, 'Legal Instruments to Protect the Environment from the Effects of Excessive Chemistry in Agriculture on the Example of Plant Protection Products Regulation' (2020) Vol XIXX, No 2 *Studia Iuridica Lublinensia* 49.

[100] Act on Plant Protection Products of 8 March 2013, Polish Journal of Laws – consolidated text: 2013 item 340, position 412.

[101] Such training course end with a relevant certificate, may only be conducted by entrepreneurs or entities entered by Voivodship Plant and Seed Protection Inspectors in appropriate registers. A list of centres organising them can be obtained from the locally competent Voivodship Plant Protection and Seed Inspectorates <http://piorin.gov.pl/wiorin/> accessed 29 November 2022.

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available methods and techniques, especially non-chemical ones.[102] According to the EU framework, the use of pesticides should be limited to the minimum, in particular by reducing the doses or the number of treatments carried out. In addition, farmers are obliged to follow the Code of Good Agricultural Practice, as well as the Good Plant Protection Practice.[103] The former requires them to act in accordance with rational fertiliser management, the protection of water and soils, the preservation of valuable habitats and species found in agricultural areas, and the protection of landscape values. Good Plant Protection Practice, on the other hand, requires compliance with the principles of integrated pest management, which are mandatory for professional users of pesticides. This means that decisions to carry out treatments should be preceded by checks on whether and which harmful organisms are present on the plants and whether this affects the economic efficiency of production.

Professional users who apply plant protection products are obliged to take into account the requirements of integrated plant protection as defined in the Regulation of the Minister of Agriculture and Rural Development of 18 April 2013 on the requirements of integrated plant protection.[104] According to that regulation, an agricultural producer should use all available measures and methods of protection against agrophages before applying chemical plant protection and reduce the pesticides used. The provisions of the regulation place a strong emphasis on, among other things, the use of crop rotation, suitable varieties, observing optimum dates, using appropriate agrotechnics, fertilising and preventing the spread of harmful organisms. One of the requirements is also the protection of beneficial organisms and the creation of favourable conditions for their occurrence, in particular pollinating insects and natural enemies of harmful organisms. The use of chemical plant protection should be preceded

[102] See: Arkadiusz Piwowar, 'The use of pesticides in Polish agriculture after integrated pest management (IPM) implementation' (2021) No 28 *Environmental Science and Pollution Research* 28.

[103] For example see: <https://cdr.gov.pl/transfer-wiedzy/broszury-publikacje/3900-kodeks-dobrej-praktyki-ochrony-roslin-2020> accessed 5 January 2023.

[104] The Regulation of the Minister of Agriculture and Rural Development of 18 April 2013 on the requirements of integrated plant protection, Polish Journal of Laws 2013 item 505.

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by monitoring activities in the crop and supported by appropriate scientific instruments and advice.[105]

It is essential to add that only plant protection products authorised for marketing and use on the basis of permits or parallel trade permits issued by the Minister of Agriculture and Rural Development may be used to protect crops. Their list can be found in a register made available on the website of the Public Information Bulletin of the Ministry of Agriculture and Rural Development.[106] The Ministry of Agriculture and Rural Development also makes available on its website tools helpful in the correct selection of plant protection products, i.e. a search engine and labels of protection products.[107] One of the basic things a professional user should do, before applying plant protection products, is to read the product label.

Professional users shall also comply with the conditions set out in the Regulation of the Minister of Agriculture and Rural Development of 31 March 2014 on the conditions for the use of plant protection products[108], i.e., inter alia, to maintain minimum distances from certain places or objects. Plant protection products may be applied in open areas if the wind speed does not exceed 4 m/s. Persons applying plant protection products must also have appropriate training, confirmed by a current, for the duration of the treatment, certificate of completion of a training course on the use of plant protection products, or counselling on plant protection products, or integrated plant production, or any other document certifying entitlement to use pesticides. Owners of, inter alia, sprayers are obliged to carry out periodic tests confirming the technical efficiency of the equipment. The first test for new equipment shall be carried out no later than five years after the date of acquisition. The professional user is obliged to keep records for 3 years, including the name of the plant protection product, the time of application and the dose applied, the area and crop on which the plant protection product was used. The

[105] Helpful for the implementation of the requirements of integrated plant protection are the methodologies for integrated plant protection published on the website of the Ministry of Agriculture and Rural Development <https://www.agrofagi.com.pl/lang,2> accessed 20 December 2022.

[106] See: <https://www.gov.pl/web/rolnictwo/rejestr-rodkow-ochrony-roslin> accessed 6 January 2023.

[107] See: <https://www.gov.pl/web/rolnictwo/wyszukiwarka-srodkow-ochrony-roslin> and <https://www.gov.pl/web/roln ictwo/etykiety-srodkow-ochrony-roslin> both accessed on 7 January 2023.

[108] The Regulation of the Minister of Agriculture and Rural Development of 31 March 2014 on the conditions for the use of plant protection products, Polish Journal of Laws 2014 item 516.

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documentation must also indicate how the requirements of integrated pest management are met by stating at least the reason for treatment with the plant protection product.

To conclude the analysis of the Polish legislation on plant protection products, it vital to refer to the Polish Strategic Plan for the Common Agricultural Policy 2023-2027.[109] In accordance with the SWOT analysis included in that document, the use of plant protection products poses a threat to the biodiversity and as a consequence it leads the need to support agricultural practices involving a reduction in the use of these products. Because of that interventions to promote production methods leading to reduced use of pesticides and the use of biological crop protection methods have been included in the Strategic Plan. According to the SWOT analysis it is therefore important to promote the sustainable use of plant protection products and minimise their negative impact on the environment in Poland.

Portugal (Cátia Marques Cebola)

In Portugal, the use of pesticides is part of a broader legal framework regarding the sustainable use of plant protection products (phytopharmaceuticals) and the Portuguese legislator establishes specific legal rules for the use of this type of products. Within this framework, legal protection rules distinguish between the use of plant protection products authorized for professional use and non-professional use.

Law No 26/2013, of 11 April, regulates the activities of distribution, sale and application of plant protection products for professional use and adjuvants for plant protection products and defines the monitoring procedures for the use of plant protection products. Decree-Law No 86/2010, of 15 June, in turn, establishes the mandatory inspection regime for equipment for the application of plant protection products authorized for professional use. Both legal acts transpose the Directive 2009/128/EC, of the European Parliament and of the Council, of 21 October, which establishes a framework for action at a European level for the sustainable use of pesticides.

In addition to these legal acts, it is also necessary to take into account:

– Ordinance No 104/2020, of 29 April, which defines the requirements applicable to aircraft operators who carry out specialized operations for the application of plant

[109] See: <https: //ksow.pl/wspolna-polityka-rolna/wpr-2023-2027> accessed 11 January 2023.

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protection products in the context of agricultural and forestry work and to pilots who operate aircraft involved in the application of these products;

– Decree-Law No 169/2019, of 29 November, which amends the Law No 26/2013, of April 11, and regulates the activities of distribution, sale and application of plant protection products, transposing Directive (EU) No 2019/782;

– Decree-Law No 35/2017, of 24 March, which establishes specific safety measures regarding the application of plant protection products in public places with a particular concentration of certain population groups, such as kindergartens, in nearby urban gardens or parks and in campsites; hospitals and other health care facilities as well as in residential facilities for the elderly; in educational establishments, except those dedicated to training in agricultural sciences; and

– Decree-Law No 78/2020, of 29 September, which transposes several Directives and guarantees compliance with obligations arising from European regulations in the field of plant health.

Regarding Law No 26/2013, of 11 April, namely the scope of application, the regime relating to the application of plant protection products provided for in this Law covers the land and aerial application of plant protection products and applies to professional users in agricultural and forestry holdings, urban areas, leisure areas and communication routes (Article 2).

The fundamental principle established by this Law is based on the use of pesticides as a last resort, when there are no other viable alternatives, namely through mechanical and biological means of combat (Article 32, paragraph 3). On the other hand, this Law now requires specific training for pesticide applicators (Article 18). According to Article 4, only distribution companies and sales establishments authorized by the Directorate-General for Food and Veterinary (DGAV) can carry out the activity of distribution or sale of plant protection products, under the terms of Article 12. The application for authorization to carry out the activities of distribution or sale of plant protection products is submitted to the Regional Directorate of Agriculture and Fisheries (DRAP) territorially competent, which then forwards the report with its opinion to the Directorate-General for Food and Veterinary Medicine within 20 days. The DGAV decides on the application within 10 days after receiving the required elements and communicates the decision to the DRAP, which notifies the applicant.

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Promotion and dissemination actions for the sale of plant protection products can only be carried out by the responsible technician of the authorized entity or by a qualified technician. The responsible technician can only assume functions in a maximum of three locations for which an authorization has been granted to carry out the activity of distribution, sale or application of plant protection products (Article 6). Anyone who fulfills, cumulatively, the following requirements can apply for qualification as a responsible technician: a) have higher education in agricultural sciences; b) have passed the final assessment of the training action in distribution, marketing and application of plant protection products, provided for in Article 24, no5, paragraph a), or have obtained credit units in a graduate or postgraduate university course, considered equivalent to the training action and completed less than 10 years ago. The qualification of the responsible technician is valid for 10 years, renewable for equal periods of time (Article 7). Besides, plant protection products can only be sold to those who are of legal age (18 years old or more) and who are duly identified and merely by those who are sales operators or a responsible technician (Article 9).

In Portugal it is prohibited throughout the national territory:

a) The application of plant protection products not authorized by DGAV;

b) The application of plant protection products that does not comply with the indications and conditions of use, expressly authorized under Articles 51 or 53 of Regulation (EC) No 1107/2009, of the European Parliament and of the Council, of 21 of October;

c) The application of plant protection products that does not comply with the indications and conditions of use authorized and expressed on the label of the respective packages, except when indications and conditions of use of plant protection products authorized and published by DGAV on its website are concerned, for legal reasons, they are not yet on the label of the packaging of plant protection products.

Plant protection products for non-professional (domestic) use can be purchased, handled and applied by the general public in plant protection at a domestic level, either inside their homes or in the surrounding or nearby land. This covers the use of plant protection products only in the domestic environment, such as indoor plants or small family gardens. The legal rules for this type of products for domestic use are provided for in Decree-Law No 101/2009, of 11 May, which establishes the conditions for their

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authorization, sale and application. According to its Article 2, some legal concepts should be highlighted, such as:

– Indoor plants, that are potted plants, usually ornamental, existing in a closed or covered space inside the house, including balconies and marquees, to which, by the very nature of the space, it is possible to prevent access to people outside the treatment, namely children (paragraph d);

– Home garden which is the entire space outside the dwelling or in its vicinity, not exceeding 500 m2, borne by the household whose production is intended for consumption by that household and whose access to people outside the treatment, namely children, is possible or probable (paragraph b);

– Family garden that is the interior or exterior space of the house, including patios, porches, terraces, sheds and decks intended for leisure activities of the household (paragraph c).

Only plant protection products approved for non-professional use and authorized by the Directorate-General for Agriculture and Rural Development (DGADR), which respect the restrictions and requirements of the Decree-Law No 101/2009, of May 11, are allowed Besides, any citizen of legal age, without specific training in the application of plant protection products, can buy and apply these products. These products can be purchased in supermarkets and other commercial surfaces, and they must be in properly identified exhibitors and separate from other consumer goods.

It is prohibited to distribute, sale and application of plant protection products for professional and domestic use that do not comply with the rules established in the respective diplomas and above mentioned in Law No 26/2013, of 11 April, on the professional use of plant protection products and Decree-Law No 101/2009, of 11 May, on the domestic use of plant protection products.

Portuguese law also provides for certain sanctions and fines on the use of pesticides. Respectively, Law No 26/2013, of 11 April, on the professional use of plant protection products establishes in Article 55 fines ranging from 250 EUR to 5,000 EUR, in the case of a natural person, and from 500 EUR to 22,500 EUR, in the case of a legal person. In this case it can be pointed out the lack of an approved operating procedures manual at each authorized location; failure to record sales information, as well as failure to maintain such records (in violation of the provisions of Article 10); failure to display the authorization to carry out the activity and the identification of the responsible

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technician (in violation of the provisions of Article 14). The value of the fines goes up to 500 EUR to 10,000 EUR, in the case of a natural person, and from 750 EUR to 44,500 EUR, in the case of a legal person, if, for instance the storage or sale of plant protection products in facilities not exclusively intended for these products under the authorized conditions; the sale of plant protection products to minors or by those who are not responsible technicians or sales operators,

Regarding the regulations on plant protection products for domestic use and in accordance with Article 10 of the Decree-Law No 101/2009, of 11 May, administrative infractions are established for the exhibition for sale and the sale of plant protection products that do not hold the sales authorization for non-professional use; display for sale and sale of plant protection products that do not comply with the packaging and labeling requirements set out in Articles 4, 5 and 7; the sale of plant protection products to anyone who is not of legal age; the exhibition and sale of plant protection products, in establishments that do not comply with the provisions of paragraphs 2 and 3 of Article 6. These infringements are punishable by a fine whose minimum amount is 250 EUR and a maximum of 3,700 EUR, or a minimum of 500 EUR and a maximum of 44,000 EUR, depending on whether the agent is a natural or legal person.

When it comes to control and compliance, the powers relating to them with the rules for the use and sale of products plant protection, both for professional use and for domestic use, are divided between several entities. The Directorate-General for Food and Veterinary Medicine (DGAV), under the supervision of the Ministry of Agriculture and Food, is the body responsible for the management, authorization and sustainable use of plant protection products, also coordinating at national level the National Action Plan for the Use Sustainable Plant Protection Products. Apart from that, the Food and Economic Security Authority (ASAE) is the entity that control non-conformities detected in foodstuffs offered for sale to the final consumer. Also some control is run by the Regional Directorate of Agriculture and Fisheries (DRAP) with several regional offices. Its mission is to participate in the formulation and implementation of policies in the areas of agriculture, food safety, plant health, rural development and fisheries, among others, in articulation with the competent central services and in accordance with the rules and guidelines established by these. Finally, the integrated management of environmental and sustainability policies is run by the state agency – Portuguese Environment Agency (APA).

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Slovakia (Jarmila Lazíková)

In Slovakia pesticides are mainly used in agriculture for the treatment and protection of plant growth from pests and diseases, but their use can also be encountered in forestry, when treating public greenery, or growths in private gardens. With regard to the protection of the environment and the health of people, animals and plants themselves, the correct handling and application of pesticides is important, which is ensured by the legal regulation of plant protection products at the international, European and national level.

The basic legislation binding both the Slovak legislature and the executive in the field of agricultural inputs and control are EU legislation, primarily:

– Regulation (EC) No 1107/2009 of the European Parliament and of the Council concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC.

– Regulation (EC) No 396/2005 of the European Parliament and of the Council on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC.

– Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use the directive establishes a framework for the sustainable use of pesticides that will lead to the reduction of risks and possible negative impacts resulting from the use of pesticides on human, animal and environmental health.

The aforementioned directive is transposed into Act No 405/2011 Coll. on herbal care and on the amendment of Act of the National Council of the SR No 145/1995 Coll. on administrative fees as amended (hereinafter referred to as the Act on Plant Medicine Care). In addition, EU Member States are required to draw up national action plans, in which they set out their quantitative objectives, tasks, measures and timetables to reduce the risks and impacts of pesticide use on human health and the environment of pesticides. The Act on Plant Medicinal Care regulates:

– Scope of phytosanitary care authorities;

– Responsibilities of persons in the field of herbal medicine care;

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– Phytosanitary measures against the introduction of organisms harmful to plants or plant products and against their spread;

– Conditions for approval of active substances, safeners and synergists, placing on the market, use and control of adjuvant plant protection preparations;

– Conditions for testing the biological effectiveness of plant protection products according to the principles of good experimental practice and certifying workplaces for conducting biological effectiveness tests according to the principles of good experimental practice;

– Conditions of registration, use and control of application devices;

– Sanctions for breach of obligations.

The Act on Plant Medicinal Care is closely related to the Act No 67/2010 Coll. on the conditions for putting chemical substances and chemical mixtures on the market and on the amendment and supplementation of certain laws (Chemical Act), which provides for the classification, labelling, packaging of chemical substances, testing of substances, principles of good laboratory practice, conditions for putting substances and mixtures on the market, export conditions and the importation of selected dangerous substances, the rights and obligations of manufacturers, importers, downstream users and suppliers of substances and mixtures, the competence of state administration bodies, including control and the imposition and enforcement of sanctions.

Another national legal regulation is Act No 387/2013 Coll. on auxiliaries in plant protection and on amendments to certain laws. This law stipulates:

– The scope of the state administration bodies and the state expert control body in the field of auxiliary preparations in plant protection;

– Conditions for placing auxiliary preparations in plant protection on the market;

– Conditions of distribution, storage, handling, use and disposal of plant protection aids or their packaging;

– Conditions for testing the effectiveness of auxiliary preparations in plant protection;

– Control and supervision of compliance with this law, and

– Sanctions for violation of obligations established by this law.

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State administration and control in the field of pesticides is run by the Central Agricultural Inspection and Testing Institute (CAITI), specifically the Agricultural Inputs and Inspections Section. This body ensures the fulfilment of tasks in the area of professional and inspection activities, as well as in the area of administrative procedures in the field of soil and fertilizers; plant protection; animal feed and nutrition; seeds and seedlings; pesticide registration and control. Within it, the Department of Registration of Pesticides is, in accordance with the Act on Plant Medicinal Care, the national authority responsible for the authorization and permitting of plant protection preparations (POR), auxiliary plant protection preparations (PP), adjuvants, parallel POR and PP in the SR.

The activities of the Department of Pesticide Registration mainly consist of:

– Assessment of active substances, safeners, synergists, adjuvants, basic substances, POR and PP and coordination of the process of their assessment;

– Issuing decisions on the authorization of POR and PP, on amending and supplementing the authorization, on extending the period of validity of the authorization, on re-evaluating the authorization, on repackaging, on parallel trade, on canceling the authorization or permission for parallel trade;

– Evaluation of documentation data sets and development of expert opinions and evaluation reports for the area of identity and physico-chemical properties of active substances, safeners, synergists, adjuvants, basic substances, POR and PP, as well as analytical methods for determining active substances, safeners, synergists, adjuvants, their impurities and residues for the purposes of their approval or authorization;

– Evaluation of documentary data sets and preparation of expert opinions and evaluation reports for the field of biological effectiveness for the purposes of POR and PP authorization;

– Accepting applications for tests, processing plans and test methods for individual harmful organisms in various agricultural crops for the entire territory of the SR, processing test results;

– Keeping records and documentation of authorized POR and PP, providing data, information and reports to the European Commission, the European Food Safety

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Authority, international organizations, competent authorities of EU Member States and third countries.

The Department of Pesticide Registration cooperates with authorized specialist workplaces, such as the National Reference Laboratory for Pesticides of the University of Veterinary Medicine and Pharmacy in Košice, the Water Management Research Institute, the Slovak Hydrometeorological Institute, the Public Health Office of the SR, the National Agricultural and Food Center, the Animal Production Research Institute Nitra and Institute of Beekeeping Liptovský Hrádok.

Within the given section, the CAITI also has an inspection department that carries out official inspections. Control in the field of plant protection is handled by the plant protection control department within the control department. This department carries out internal control of POR in the territory of the SR at end users, during marketing, importation, consumption records, checks their land and air application and takes samples for analysis. As part of the external border control, it carries out official controls of plant material, plant products and other objects and feed at the border control stations Čierna nad Tisou (rail transport), Vyšné Nemecké (road transport) and M. R. Štefánik Airport Bratislava (air transport).

The Ministry of the Interior of the SR issued Regulation of the Ministry of the Interior of the SR No 77/2005 on the procedure, prevention, prevention, detection and documentation of environmental crime, in the detection of its perpetrators, in its investigation and summary investigation. According to this regulation, environmental criminal activity includes, among other things, criminal acts in the area of endangering and damaging the environment, unauthorized disposal of waste, violation of the principles of water and air protection, protection of plants and animals, violation of the principles of tree and shrub protection, endangering health with harmful food and illegal production or possession of high-risk chemical substances. These crimes are defined in the second part of Criminal Law No 300/2005 Coll., the sixth chapter entitled "Criminal acts that are generally dangerous and against the environment".

In the field of plant protection preparations, MPARV SR is represented in two relevant groups, namely in the National Expert Group for the Elimination of Environmental Crime and in the National Expert Group for CBRNE Threats. Every year, the Slovak Republic actively participates in the action organized by EUROPOL

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under the name SILVER AX with the aim of eliminating illegal import, trade and use of plant protection products and is an active member of the OECD ONIP expert group.

In Slovakia there are restrictions on the use of pesticides in specific cases, such as: for non-professional users, in forestry, on public spaces, for water protection, in protected areas and restrictions for the protection of bees.

The first prerequisite for placing plant protection products on the market for non-professional users and their subsequent use by non-professional users is their assessment and subsequent authorization of retail packaging, taking into account the specific possible risks for this target group of users. Therefore, for non-professional users, authorized plant protection products are not classified as toxic, very toxic, carcinogenic, mutagenic or harmful to reproduction.

Currently restrictions in forestry cover a limited number of plant protection preparations containing 22 different active substances are authorized for use in forestry.

The use of preparations for the protection of plants in public spaces and for the protection of public greenery should only be carried out in the case of a strong presence of harmful organisms. Due to the danger arising from the use of plant protection preparations, in any procedure and application of such preparations, the aspect of protecting the health of people, whose movement in the treated area cannot be completely excluded, prevails. This is also why, according to paragraph 1 of the decree of the Ministry of Internal Affairs and Communications of the SR No 488/2011 Coll. in special areas, such as public parks, gardens, sports grounds, recreation centres, school campuses and playgrounds, or in the vicinity of medical facilities, they should use low-risk plant protection products, and in the case of using a product other than a low-risk product, it must be assessed by an expert workplace for the field of toxicology.

Restrictions for water protection prohibit the application of plant protection products with a high risk for groundwater. In the case of surface water, as part of the protection of surface water when using plant protection products, the priority methods of preventing water pollution and eliminating surface water pollution are measures to reduce the leakage of plant protection products due to the drift of spray mist and to reduce the leakage of plant protection products due to surface runoff and water erosion.

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The use of plant protection products in special areas (NATURA 2000 areas, protected bird areas, wetlands, etc.) is based on their national classification established by the Decree of the Ministry of Agriculture and Rural Development of the SR No 488/2011 Coll. and conditions specified in the decree in question. The national classification of plant protection products is developed with the aim of higher protection of wild animals, birds, aquatic organisms, bees and non-target arthropods as well as water resources. On the basis of risk assessment and threshold values, risk indices are assigned to individual preparations, on the basis of which appropriate restrictions on the use of preparations are applied The goals and principles of care for protected areas in the form of detailed conditions for the protection of these areas are also incorporated into forest care programmes and are binding for forest managers. In many cases, the principles of nature protection are also applied in forest stands outside protected areas.

The assessment of the impact of plant protection products on bees and other non-target arthropods is carried out by the National Agriculture and Food Centre – Institute of Beekeeping in Liptovský Hrádek, which also sets the conditions for the use of plant protection products in Slovakia in such a way as to minimize the risk of damage to bees and other pollinators as well as beneficial arthropods and to minimize the risk contamination of bee pasture – pollen and nectar – and subsequently also bee products.

3. ANTIBIOTIC USE IN AGRICULTURE (*Izabela Lipińska*)

Antibiotics are veterinary medicinal products of natural, semi-synthetic or synthetic origin that are used in animal production.[110] They serve in the treatment of many infectious diseases, as they have antibacterial and some also antifungal properties. They play a special role in the prevention and control of transmissible animal diseases. They counteract deformation of production and loss of production, which carries losses on the part of the agricultural producer. Antibiotics are man-made and also occur in nature. They are produced by species of fungi (*penicillin*), actinomycetes (*streptomycin*), bacteria (*gramicin*) and plants (*phytoncides*).

[110] Henryk Pawlak, Marian Lipiński, *Zootechniczny niezbędnik terminologiczny* (Poznań 2011).

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The use of antibiotics in livestock production is generally limited to medicinal and therapeutic properties to control existing bacterial infections.[111] In husbandry, they can be applied by parenteral injection, in water or as additives to medicated feed, for diseases such as *mastitis* in cattle, septicemia in poultry, bees, cattle, pigs, sheep, goats, rabbits, camels and fish, or, for example, enteritis in pigs and liver abscesses and pneumonia in cattle.[112]

However, antibiotics also find other uses. They are given to animals for the prevention of bacterial diseases and as growth promoters.[113] In the first case, the preventive use of an antibiotic is intended to prevent possible diseases to which animals are exposed in certain situations only, relevant to the entire production or herd. These include the movement of animals, the weaning of piglets, the drying out of dairy cows, the combining of individuals from different herds. In such cases, the symptoms of the disease have not yet appeared, but their appearance is highly likely. The use of antibiotics can involve individual animals, as well as whole groups of animals.[114] In turn, the role of antibiotic growth promoters boils down to stimulating the microflora within the animal's digestive tract. It leads to limiting the development of microorganisms and their products (i.e. toxins) that are unfavorable to the animal. As a result, the use of antibiotics in the form of feed additives affects higher weight gains (4-28%), better feed utilization (0.8-7.6%), lower methane and ammonia emissions, better phosphorus utilization, reduced incidence of dysentery, toxoplasmosis in sheep, coccidiosis in poultry, calves and sheep.[115]

Inappropriate use of antibiotics can lead to the phenomenon of antimicrobial resistance. It should be understood as the ability of microorganisms to survive or thrive

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[111] For a broader description, see: Izabela Lipińska, 'Prawna problematyka stosowania antybiotyków w produkcji zwierzęcej' (2000) 1 *Przegląd Prawa Rolnego* 163.

[112] See:: Zygmunt Pejsak, Marian Truszczyński, 'Racjonalna antybiotykoterapia u zwierząt' (2013) 88 *Życie Weterynaryjne* 359.

[113] Jim O'Neill, 'Tackling Drug-Resistant Infections Globally: Final Report and Recommendations' (2016) May *The Review On Antimicrobial Resistance* <https://amr-review.org/> accessed 5 January 2023.

[114] Joanna Biernasiak, Katarzyna Śliżewska, Zdzisław Libudzisz, 'Negatywne skutki stosowania antybiotyków' (2010) 3 *Postępy Nauk Rolniczych* 105.

[115] See: Monika Przeniosło-Siwczyńska, Krzysztof Kwiatek, 'Dlaczego zakazano stosowania w żywieniu zwierząt antybiotykowych stymulatorów wzrostu?' (2013) 2 *Życie Weterynaryjne* 104; Ulrike Thoms 'Antibiotika, agrarwirtschaft und politik in Deutschland im 20. und 21. Jahrhundert (2017) 65 *Agrargeschichte und Agrarsoziologie* 35.

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at antimicrobial concentrations that are usually sufficient to inhibit or eliminate microorganisms of the same species.[116] This problem is very important, especially in the era of developing technology in livestock production, which allows for increasingly intensive breeding and rearing. Conducting a certain genetic selection, which allows the highest possible productivity, implies reduced animal immunity, which is accompanied by a high density of individuals in breeding facilities, increasing air pollution, low levels of hygiene and a weak immune system, which promotes the development of diseases.[117] At the same time, eliminating pathogenic and pathogenic bacteria from the environment is virtually impossible. In addition, the inappropriate use and abuse of antibiotics in husbandry and breeding, as well as in veterinary medicine, contributes to the formation of disorderly phenomena and changes in animal characteristics.

However, the use of antibiotics should also be considered from the perspective of their impact on food safety and thus consumer health protection. The effect of the use of antibiotics in animals is the presence of their residues in products of animal origin that, when they reach the market, are consumed by humans.[118] Their residues affect its health by causing allergic reactions, altering the intestinal microflora and generating microbial resistance. In humans, they can also induce antibiotic resistance.[119]

The use of antibiotics in production is undoubtedly a very important problem of a practical nature, including, in particular, a legal one. According to a number of scientific studies conducted, 160,000 tonnes of antibiotics were administered worldwide in 2020, and it is estimated that by 2030 this number could reach 200,000 tonnes.[120]

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[116] See: European Commission, 'Antimicrobial resistance (AMR) The road to more prudent use of antimicrobials and antibiotics' (2018) <https://op.europa.eu/en/publication-detail/-/publication/124fd00b-ebad-11e8-b690-01aa75ed71a1/language-pl/format-PDF> accessed 20 October 2022.

[117] Michał Majewski, Krzysztof Anusz, 'Antybiotykooporność czynników zoonotycznych związanych z bezpieczeństwem żywności pochodzenia zwierzęcego' (2018) 2 *Życie weterynaryjne* 118.

[118] Article 3 paragraph 14 of the Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authorityand laying down procedures in matters of food safety, (2002) OJ L 031.

[119] For a broader description, see Zygmunt Pejsak, Marian Truszczyński M., 'Racjonalna antybiotykoterapia u zwierząt' (2013) 88 *Życie Weterynaryjne* 359.

[120] Amy Buxton, 'EU Instigates Ban on Routine Use of Antibiotics In Animal Agriculture, But Critics Worry Enforcement Will Be Spotty' (2022) *Animal Rights* <https://www.greenqueen.com.hk/eu-bans-antibiotics-animal-farming/> accessed 10 January 2023.

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At the same time, about 80% of all antibiotics produced are administered to livestock, 70% of which are not fully medically justified. [121]

3.1 ANTIBIOTICS USE IN EUROPEAN UNION LAW (*Izabela Lipińska*)

Until the 1960s, the use of antibiotics in livestock production was not of particular interest to the EEC legislature, and the Member States of the time had different positions on this issue.[122] For the first time, in European terms, this issue was addressed by the Council Directive of 23 November 1970 concerning additives in feeding-stuffs (70/524/EEC).[123] It recognized that the volume of animal production depends to a large extent on the use of good quality feed In an effort to harmonize legal standards in the EEC, the legislator assumed that broadly defined "additives" improve both traits and production results, but must not pose a threat to animal health or harm consumers of animal products. Under the directive, a defined list of antibiotics permitted for use was established, which was in effect until 2010.[124]

At the same time, a discussion was undertaken at the international level regarding the use of antibiotics as feed additives and the growing problem of drug-resistant bacteria. Individual countries began to abandon their use as growth promoters. These included Sweden, where their use was banned in 1986.[125] In order, restrictions in this regard were introduced in 1995 in Denmark and Norway.[126] Gradually, Member States began to

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[121] See: Cóilín Nunan, *Ending routine farm antibiotic use in Europe. Achieving responsible farm antibiotic use through improving animal health and welfare in pig and poultry production, the European Public Health Alliance* (EPHA 2022); European Centre for Disease Prevention and Control (ECDC), European Food Safety Authority (EFSA) and European Medicines Agency (EMA) *Third joint inter-agency report on integrated analysis of consumption of antimicrobial agents and occurrence of antimicrobial resistance in bacteria from humans and food-producing animals in the EU/EEA. JIACRA III. 2016–2018* (Stockholm Parma Amsterdam ECDC EFSA EMA 2021).

[122] Claas Kirchhelle, 'Pharming animals: a global history of antibiotics in food production (1935–2017)' (2018) 4 *Palgrave Communications* 1.

[123] (1970) OJ L 270. This directive has been repealed.

[124] Article 30 of the Regulation (EC) No 767/2009 of the European Parliament and of the Council of 13 July 2009 on the placing on the market and use of feed, amending European Parliament and Council Regulation (EC) No 1831/2003 and repealing Council Directive 79/373/EEC, Commission Directive 80/511/EEC, Council Directives 82/471/EEC, 83/228/EEC, 93/74/EEC, 93/113/EC and 96/25/EC and Commission Decision 2004/217/EC (Text with EEA relevance), [2009] OJ L 229.

[125] See: the Swedish Feed Law of 1985 (SFS 1985:295). Statens offentliga utredningar (1997) 132 <https://www.riksdagen.se/sv/dokument-lagar/dokument/statens-offentliga-utredningar/sou-1997-132-d1_GLB3132d1)> accessed 16 January 2023.

[126] Claas Kirchhelle "Pharming animals Pharming animals: a global history of antibiotics in food production (1935–2017)' (2018) 4 *Palgrave Communications* 8.

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restrict the use of particular antibiotics, and the EC in 1997 banned *avoparcin*[127], followed in 1999 by zinc *bacitracin*, *spiramycin*, *tylosin* and *virginiamycin*.[128]

Other important legislative solutions have been introduced by Regulation (EC) No 1831/2003 of the European Parliament and of the Council of 22 September 2003 on additives for use in animal nutrition (Text with EEA relevance. Under Article 11, the legislature banned all antibiotic growth promoters except for *coccidiostats* and *histomonostats* as of January 1, 2006. [129] The approval of the latter for marketing required a permit (Article 5 of Regulation 1831/2003). Authorizations required specifying the conditions for their use, or the target animal species or categories. Article 11(1) of Regulation 1831/2003, following the decision to phase out the two antibiotics before December 31, 2012, required the Commission to report to the European Parliament and the Council before January 1, 2008 on their use as feed additives or available substitutes. At the same time, the use of coccidiostats as a preventive measure for coccidiosis control in poultry production was shown to be necessary.

Another change regarding the use of antibiotics was introduced by the Commission Regulation (EC) No 124/2009 of 10 February 2009 setting maximum levels for the presence of *coccidiostats* or *histomonostats* in food resulting from the unavoidable carry-over of these substances in non-target feed (Text with EEA relevance). In its wording, the legislator adopted limits for contaminants in food of animal origin (annex to Regulation 124/2009). Exceeding them results in a ban on marketing. At the same time, if a significant residue is found below the maximum specified in the annex, the competent authority was obliged to conduct an investigation to determine whether the presence of residues is a consequence of unavoidable cross-contamination of the feed or the illegal use of a coccidiostat or histomonostat.

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[127] Article 1 of the Commission Directive 97/6/EC of 30 January 1997 amending Council Directive 70/524/EEC concerning additives in feedingstuffs (Text with EEA relevance), [1970], OJ L 35.

[128] Article 1 of the Council Regulation (EC) No 2821/98 of 17 December 1998 amending, as regards withdrawal of the authorisation of certain antibiotics, Directive 70/524/EEC concerning additives in feedingstuffs, [1998], OJ L 351.

[129] See: European Commission, 'Report from the Commission to the Council and the European Parliament on the use of coccidiostats and histomonostats as feed additives submitted pursuant to Article 11 of regulation (ec) No 1831/2003 of the European Parliament and of the Council of 22 September 2003 on additives for use in animal nutrition' [2008] COM/0233 final.

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Antibiotics are veterinary drugs hence it is necessary to also refer to the Commission Regulation (EU) No 37/2010 of 22 December 2009 on pharmacologically active substances and their classification regarding maximum residue limits in foodstuffs of animal origin (Text with EEA relevance). Under it, maximum residue levels are set for antibiotics and other drugs that are approved for use in food source animals.

Because antibiotics are also used for prophylaxis, in 2011 the European Parliament voted for a resolution calling on the Commission to develop a regulation prohibiting their metaphilactic use in livestock as a method of limiting the process of increasing bacterial drug resistance. The introduction of a new animal health law aimed at preventing disease, reducing the use of antibiotics, and replacing the animal health laws of the time based on disease control was adopted as one of the key measures to effectively combat antimicrobial resistance. The work resulted in the adoption of the Regulation (EU) 2016/429 of the European Parliament and of the Council of 9 March 2016 on transmissible animal diseases and amending and repealing certain acts in the area of animal health ('Animal Health Law') (Text with EEA relevance). Its solutions are designed to meet expectations of reducing antibiotic use in animals.

Currently, the normative act of importance for the issue at hand is the following Regulation (EU) 2019/6 of the European Parliament and of the Council of 11 December 2018 on veterinary medicinal products and repealing Directive 2001/82/EC (Text with EEA relevance). Due to increasing drug resistance, the improper use of antimicrobial pharmaceuticals has been prohibited under Article 107 since January 28, 2022. As a result, antimicrobial pharmaceuticals may not be used routinely or used to compensate for inadequate hygiene, improper animal husbandry, lack of care or inadequate farm management (Article 107(1)). In addition, they may not be used to promote growth or increase productivity (Article 107(2)). They are permitted to be used in exceptional cases on individual animals or on a limited number of animals when the risk of infection or infectious disease is very high and the consequences may be severe (Article 107(3)). In such cases, the prophylactic use of antibiotic medicinal products is limited to their administration only to individual animals, under the conditions specified in the first paragraph.

In addition, according to Article 107(4), the medicinal products in question may be used metaphylactically only if the risk of spreading an infection or infectious disease in

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a group of animals is high and there are no other suitable alternatives. Member States may provide guidance on other suitable alternatives and actively support the development and use of guidelines that promote understanding of the risk factors associated with metaphylactic use and include criteria for its initiation.

It is worth adding that EU regulations do not limit the treatment of sick animals by giving them antibiotics. Their essence is that they exclude preventive treatment of the entire herd, with only individually diagnosed sick individuals. Thus, the legislator prohibits the indiscriminate, preventive application of antibiotics in feed or water, which has often had the appearance of abuse.

With reference to Regulation 37/2010 cited above, the issue of antibiotic use in food law cannot be overlooked Although the legislator in the Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety does not directly address the use of antibiotics in food production. However, it points out that neither feed in which there may be antibiotic residues nor the residues themselves constitute a foodstuff. Nonetheless, this does not detract from the accepted general purpose of the regulation, namely the need to ensure a high level of protection of human health and life, taking into account adequate protection of animal health and living conditions (Article 5 of Regulation 178/2002).

Instead, it is applicable to the extent discussed in the solutions contained in the Regulation (EU) 2017/625 of the European Parliament and of the Council of 15 March 2017 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products, amending Regulations (EC) No 999/2001, (EC) No 396/2005, (EC) No 1069/2009, (EC) No 1107/2009, (EU) No 1151/2012, (EU) No 652/2014, (EU) 2016/429 and (EU) 2016/2031 of the European Parliament and of the Council, Council Regulations (EC) No 1/2005 and (EC) No 1099/2009 and Council Directives 98/58/EC, 1999/74/EC, 2007/43/EC, 2008/119/EC and 2008/120/EC, and repealing Regulations (EC) No 854/2004 and (EC) No 882/2004 of the European Parliament and of the Council, Council Directives 89/608/EEC, 89/662/EEC, 90/425/EEC, 91/496/EEC, 96/23/EC, 96/93/EC and 97/78/EC and Council Decision 92/438/EEC (Official

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Controls Regulation)Text with EEA relevance). Accordingly, under Article 18 of Regulation 2017/625, the legislator introduces special provisions for official inspections and actions taken by the competent authorities in connection with the production of products of animal origin intended for human consumption. In this, it imposes the obligation for official inspections of slaughterhouses to be carried out by the official veterinarian, under his supervision or, if sufficient safeguards have been applied, under his responsibility, to verify compliance with the requirements applicable to the presence of residues of veterinary medicinal products.

3.2 ANTIBIOTICS USE IN NATIONAL LAWS

Italy (Francesca Coli)

In Italy, since the 1950s, antibiotics in the veterinary sector have been a key means of controlling infectious diseases, improving animal welfare, and ensuring the safety standards of animal food production. Nowadays, the Italian Ministry of Health, Directorate General for Animal Health and Veterinary Medicines (DGSAF), considers antibiotic (or antimicrobial) resistance[130] "*the most urgent problem in our Country, for which prevention and control actions are needed*".[131]

The landmark of the national law on the use of veterinary medicines – including antibiotics[132] – is the Legislative Decree No 193 of 6 April 2006 (Legislative Decree 193/2006). Legislative Decree 193/2006, in implementation of Directive (EU) 2004/28/EC[133] on the code of veterinary medicines, establishes rules on the marketing (Title III), manufacturing and importation (Title IV), labeling (Title V) possession,

[130] Article 4, paragraph 1 of Regulation (EU) 2019/6 defines AMR as "the ability of micro-organisms to survive or to grow in the presence of a concentration of an antimicrobial agent which is usually sufficient to inhibit or kill micro-organisms of the same species'. See: Silvia Giardina and others, 'Approccio ambientale all'antimicrobico-resistenza' (2021); Claudio Capozzi, Massimo Maurici and Augusto Panà, 'Antimicrobico resistenza: è crisi globale, "un lento tsunami' (2019) Igiene e Sanità Pubblica 22; FAO; Veterinary Medicines Directorate, 'Tackling Antimicrobial Use and Resistance in Food-Producing Animals' (2022).

[131] Ministry of Health, DGSAF, Note No 0001338-P-21/01/2019.

[132] Antibiotics fall within the scope of Legislative Decree 193/2006: Article 1, paragraph. 1, let. a) states that the term "medical products includes: (1) any substance or combination of substances presented as having curative and prophylactic properties for animal diseases; (2) any substance or association of substances that can be used on or administered to the animal for the purpose of restoring, correcting, or modifying physiological functions by pharmacological immunological or metabolic action, or to establish a medical diagnosis.

[133] Directive 2004/28/EC of the European Parliament and of the Council of 31 March 2004 amending Directive 2001/82/EC on the Community code relating to veterinary medicinal products, OJ L 136/58.

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distribution, supply of veterinary medicines (Title VI), and pharmacovigilance (Title VII). Title VIII of the Legislative Decree deals with monitoring and sanctions, which are the responsibility of the Ministry of Health.

However, the recent Regulation (EU) 2019/6[134] is bringing about a change in the domestic legislative framework. The Regulation, which entered into force last January 28, 2022, implicitly repealed Directive (EU) 2004/28/EC and laid down new provisions on veterinary medicinal products. Although it is clearly immediately applicable, its full implementation requires regulatory action by Member States in order to cover both areas left to national regulation and aspects that require harmonization of the European rules with the national ones currently in force. In this context, a new domestic normative intervention is required: some norms of Legislative Decree 193/2006 are no longer applicable as of January 2022 (as they are in conflict with the EU Regulation), and others should be issued.

The Italian mechanism for fulfilling obligations arising from Italy's membership in the EU – which is the European Delegation Law 2021[135] approved last August with the Law No 127 of 4 August 2022 – contains, among other provisions, the adaptation of national legislation to Regulation (EU) 2019/6. Art. 17 of the Law states that the Italian government is delegated to adopt one or more legislative decrees to align the national normative framework with the Regulation. Since the legislative decree(s) has not yet been adopted, it is most likely that we have to rely on the transitional discipline provided by the Note of the Ministry of Health (Note), DGSAF.[136]

Italian national policies on antibiotic use in veterinary medicine have antimicrobial resistance as their main target. The most relevant are as follows:

[134] Regulation (EU) 2019/6 of the European Parliament and of the Council of 11 December 2018 on veterinary medicinal products and repealing Directive 2001/82/EC, OJ L 4/43.

[135] Together with the European Law, the European Delegation Law is one of the legislative instruments for implementing EU rules in Italy.

[136] Details on the temporary discipline are described in the Note of the Ministry of Health, Directorate General of Animal Health and Veterinary Pharmaceuticals <https://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2022&codLeg=85438&parte=1&serie=>. However, the note says almost nothing about the use of antibiotics.

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1. The '*Guidelines For The Prudent Use Of Antimicrobials On Livestock Farms For The Prevention Of Antimicrobial Resistance And Alternative Proposals*'[137] (2018) cited by the Note of the Ministry of Health (*see above*) and currently under revision to comply with Regulation (EU) 2019/6 norms. The Guidelines were drafted by the DGSAF to provide competent authorities, farm veterinarians, and practitioners with practical guidance on the prudent use of antibiotics in animal husbandry;

2. The '*Manual Biosecurity and the correct and rational use of antibiotics in animal husbandry*'[138] (2012), which provides an in-depth look at issues related to the problems arising from the misuse of antimicrobials in the livestock sector and establishes general principles for their responsible use. It also incorporates elements of farm management, biosecurity, welfare, disease surveillance and monitoring, and animal nutrition;

3. The '*Guidelines for the preparation, performance and management of controls on the distribution and use of veterinary medicinal products*' [139] (2012) that were published by the Ministry of Health to emphasize the importance of surveillance on the use of antimicrobials along the distribution chain of veterinary medicines. The aim is to provide regions and other control bodies operating in the territory with operational guidance for planning and implementing pharmacovigilance activities at farms, veterinary drug wholesalers, and pharmacies. The Guidelines seek to ensure coordination, consistency and transparency in the execution of inspection activities by the entire national territory;

4. The National Action Plan on Antimicrobial Resistance (AMR Plan) approved in November 2017, following Council conclusions on '*next steps towards making the EU a best practice region in combatting antimicrobial resistance*' [140], which called on Member States to have national plans on AMR. Among other things, the AMR Plan aimed to digitalize the veterinary chain to "track" veterinary medicines and particularly antimicrobials from production to distribution to consumption. In September 2022, the

[137] The Guidelines <https://www.salute.gov.it/imgs/C_17_pubblicazioni_2782_allegato.pdf>.

[138] Note prot. No DGSAF/2657/P of 13 February 2012.

[139] Note prot. No DGSAF/1466/P of 26 January 2012.

[140] See: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XG0625(01)>.

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new AMR Plan 2022-2025[141], drafted by the Ministry of Health, was forwarded to the regions to finalize the agreement at the State-Regions Conference.[142]

The Italian legislative and policy framework on the use of antibiotics in the veterinary field is clearly determined by the regulatory interventions of the European Union.

Currently, the national landscape is being adapted and updated (as in the case of the Legislative Decree 193/2006 and the '*Guidelines For The Prudent Use Of Antimicrobials On Livestock Farms For The Prevention Of Antimicrobial Resistance And Alternative Proposals*') in light of the new Regulation (EU) 2019/6. Some other policies are outdated: both the '*Manual Biosecurity and the correct and rational use of antibiotics in animal husbandry*' and the '*Guidelines for the preparation, performance and management of controls on the distribution and use of veterinary medicinal products*' described above are from 2012. However, even within the vagueness of this framework, some considerations can still be made.

The national legislator influences the use of antibiotics by providing binding rules on various aspects: registration[143] and pharmacovigilance[144] are significant examples in this regard. Other emblematic specific cases are: (a) Articles 10 and 11 of the Legislative Decree, which contain the discipline for the derogatory use of veterinary medicines containing antimicrobials: any veterinarian who fails to comply with those provisions

[141] See: <https://www.anmvioggi.it/images/Piano_Nazionale_di_Contrasto_allAntibiotico_resistenza_2022_-_2025.pdf> accessed 20 February 2023.

[142] The conference is the main forum for coordination between the prerogatives of the state and those of the regions. The task of this body is to contribute to the formation of a unified will between the state and the regions.

[143] Art. 79 of Legislative Decree No 193 of 6 April 2006 states that owners and persons in charge of food-producing animals must keep a register in which information such as (a) quantity, (b) identification of the animals being treated, and (c) start and end date of treatment must be entered in respect of the purchase, keeping and administration of veterinary medicinal. The national health authority (ASL) carries out an inspection in the course of which it also checks that the register is kept and its regularity. Article 81 adds that in the case of facilities for breeding and keeping food-producing animals authorized to hold stocks of veterinary medicines, a veterinary surgeon is responsible for their safekeeping and use and for keeping maintenance of an appropriate loading and unloading register.

[144] According to Art. 4, (30) of Regulation (EU) 2019/6, pharmacovigilance means the science and activities relating to the detection, assessment, understanding and prevention of suspected adverse events or any other problem related to a medicinal product. Among pharmacovigilance activities, the controls to be carried out at facilities producing medicated animal feed are of particular importance. In fact, the possible cross-contamination of feed with pharmacologically active substances is one of the predisposing causes of antimicrobial resistance.

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shall be liable to a fine ranging from 1,549 EUR to 9,296 EUR (unless the fact constitutes a crime); (b) Art. 91, which establishes that a decrease in the efficacy of a veterinary medicinal product, including those containing antibiotics, must be compulsorily reported, under penalty of a fine ranging from 2,600 EUR to 15,500 EUR. Then, Article 107(7) of the Regulation (EU) 2019/6 grants room for maneuver to individual Member States, allowing them to further restrict or prohibit – with proportionate and justified measures – the use of certain antimicrobials in animals on their territory. This is permitted insofar as the administration of these antimicrobials to animals is contrary to the implementation of a national policy on the prudent use of antimicrobials.

Regarding the governance, responsibility, compliance, monitoring and operation of the use of antibiotics, there are key actors worth mentioning briefly below:

1. The Ministry of Health is responsible for implementing the requirements of European veterinary medicines legislation, including antimicrobial agents;[145]
2. Regional Authorities plan the activities to be carried out in their area of responsibility in the implementation of the AMR Plan and plan surveillance activities on operators in the veterinary drug supply chain. They also coordinate the activities of the Local Veterinary Services that carry out official pharmacovigilance controls;
3. The Food/Feed operator, the owner or keeper of food-producing animals is responsible for preventing infectious disease outbreaks and implementing programmes to ensure the health and welfare of animals on their farms;
4. Trade associations and professional bodies are involved in promoting the responsible use of veterinary medicines through the provision of educational initiatives and guidelines;
5. The National Reference Laboratory for AMR provides advice and technical support to the Ministry of Health and other public health Institutions. It also aims to maintain a monitoring system on antibiotic resistance in veterinary medicine on the Italian territory, with a view to future surveillance, and to communicate the information at the national and international levels.

[145] It is also responsible for marketing authorization and supervision of the distribution and use of veterinary medicines in order to ensure control over the entire distribution chain. It falls under its responsibility to assess the quality, safety, and efficacy of veterinary medicines and to collect and manage reports of suspected adverse reactions, including pharmacovigilance.

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Then, to conclude, policies play a crucial role in the national antibiotic regulatory space:[146] they provide guidance, data, and information to all actors (both public and private) involved in the field. Their role would be even more clarifying and useful if updated to the current legislative framework and national situation.

Poland (Izabela Lipińska)

In Polish law, issues related to the use of antibiotics are regulated from the side of food safety, sourcing of products of animal origin, health protection and control of infectious diseases in animals, and by feed and pharmaceutical law. There is no single act that has a comprehensive impact. Existing legal standards reflect the policy adopted at the EU level regarding their limited applicability.

In broad terms, the issue of antibiotic use is indirectly normalized in the Law of August 25, 2006 on Food and Nutrition Safety Act.[147] This act establishes the requirements and procedures necessary to ensure the implementation of the legal provisions of Regulation 178/2002. Although issues concerning food of animal origin have been excluded from its scope (Article 2 (1) (2)), it indirectly refers to the use of antibiotics in the definition of a harmful foodstuff. It should be understood as a foodstuff, the consumption of which, under normal conditions and as intended, may cause adverse effects on human health or life. This is the case when it contains veterinary medicinal products in excess of permissible levels or prohibited or other harmful substances as defined by EU regulations (Article 3(3)(44)). Its production and marketing is prohibited under penalty of a fine, restriction of freedom or imprisonment for up to 3 years (Article 96(2)).

As a consequence of the exemption mentioned above, the issue in question was addressed in the Law of December 16, 2005 on products of animal origin.[148] According to the wording of Article 16 (1) of the Law, it is unacceptable to administer prohibited substances (e.g., antibiotics) to animals from which or from which such products are

[146] For example, in April 2022, the Ministry of Health published the 'National guidelines on the prudent use of antibiotic in rabbit breeding for meat' <https://www.salute.gov.it/imgs/C_17_pubblicazioni_3219_allegato.pdf> and the Emilia - Romagna Region, with Regional Note No 419182 of June 2018, formalized the 'Guidelines on the prudent use of antibiotic in swine, cattle and companion animals'<https://www.izslt.it/crab/linee-guida-sulluso-prudente-degli-antibiotici/>.

[147] Journal of Laws of 2022, item 2132.

[148] Journal of Laws of 2022, item 1507.

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obtained This prohibition does not apply to animals to which, for example, substances with beta-agonist, hormonal or thyreostatic effects have been administered for therapeutic or zootechnical purposes. The condition is the expiration of the withdrawal period specified for these substances. Control activities in the subject area are carried out by the district veterinarian or an official veterinarian acting under his authority. To ensure the safety of animal products and food, unauthorized substances and medicinal products in animals, animal products and feed are monitored At the same time, the legislator stipulates under Article 25 that anyone who administers prohibited substances to animals from which or from which products of animal origin are obtained is subject to a fine.

A certain control instrument imposed on the veterinarian is the keeping of records for each transaction involving veterinary prescription medicinal products (Article 69(1)). At the same time, on the basis of Article 53 of the Law of March 11, 2004 on the protection of animal health and combating infectious animal diseases [149] certain obligations have been imposed on animal owners (possessors) and veterinarians in this regard. In the first case, the owner (possessor) is obliged to keep records of animal treatment. In the second, however, doctors are obliged to keep veterinary medical records of treatment and prophylactic procedures performed, as well as medicinal products and feed used (Article 53(2)).[150] Evasion of the indicated duties risks criminal liability.[151]

It should be added that products of animal origin may be produced and marketed if they were obtained from animals or from animals that: 1) meet the veterinary requirements set forth in the regulations on the protection of animal health and the control of infectious animal diseases; and 2) have been fed with feed that meets the requirements set forth in the feed regulations. Accordingly, Article 53(1) of the Law of July 22, 2006 on feeds [152] provides for a fine for a person who markets or uses antibiotics other than coccidiostats and histomonostats as feed additives.

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[149] Journal of Laws of 2022, item 1507.

[150] Teresa Malinowska, 'Dokumentacja lekarsko-weterynaryjna według regulacji prawnych' (2016) 3 *Życie Weterynaryjne* 153.

[151] See:: Wojewodzki Inspektorat Weterynarii, 'Information material for free-practice veterinarians on the principles of veterinary medical recordkeeping and veterinary retail marketing records' (2023) <www.gdansk.wiw.gov.pl> accessed 11 January 2023.

[152] Journal of Laws of 2022, item 1507.

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In principle, the basic normative act shaping issues related to medicinal products themselves is the Law of September 6, 2011. Pharmaceutical Law.[153] It applies to both human drugs and veterinary medicinal products. In the first case, a medicinal product is a substance or mixture of substances, presented as having properties for the prevention or treatment of diseases occurring in humans or animals, or administered for the purpose of making a diagnosis or for the purpose of restoring, improving or modifying physiological functions of the body through pharmacological, immunological or metabolic action (Article 2(32)). And in the second, it is a medicinal product used exclusively in animals (Article 2(34)). With regard to the products indicated, the legislator specifies in detail the rules for marketing authorization, the conditions for manufacturing, advertising and marketing them (Article 1(1)). Their use is also subject to monitoring.[154]

A significant role regarding the use of antibiotics in animal production is played by the Veterinary Inspection. Namely, under Article 3(2)(5) of the Law of January 29, 2004 on Veterinary Inspection[155] Its authorities, i.e. the Chief Veterinarian and the provincial veterinarians, among others, supervise the circulation of veterinary medicinal products, the quality of medicinal products in circulation and their quantity. Thus, they have the authority to inspect both medicinal establishments[156], as well as the medicinal products themselves.[157] In addition, it conducts a monitoring programme to test water used for watering animals, feed and food products of animal origin for the presence of antibiotics.[158] If it is confirmed that antibiotics of unknown origin are or have been used on the farm, or the owner of the animals does not have documentation of treatment, the animals will not be allowed for human consumption.

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[153] Journal of Laws of 2022, item 2301.

[154] Regulation of the Minister of Agriculture and Rural Development of October 17, 2008 on the manner of keeping records of retail trade in veterinary medicinal products and the model of these records, Journal of Laws of 2008, No 200, item 1236.

[155] Journal of Laws of 2022, item 2629 as amended.

[156] The inspections concern, among other things, the documentation related to the treatment, the qualifications of the persons conducting it, and, in addition, the premises where medicinal products are traded.

[157] The documentation of their marketing is verified, and the expiration date, packaging, labeling, among others.

[158] See: Antimicrobial veterinary medicinal products <https://www.wetgiw.gov.pl/nadzor-weterynaryjny/przeciwbakteryjne-produkty-lecznicze-weterynaryjne> accessed 18 November 2022.

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Portugal (Catarina Fernandes)

In Portugal there is no specific law on the use of antibiotics in agriculture. Nevertheless, an antibiotic is a medicine capable of fighting an infection caused by microorganisms that cause infections to another organism. In this sense, it falls within what are called plant protection products, which are substances intended to protect plants or plant products from all harmful organisms or to prevent their action (Simões, 2005). Consequently, it is applicable to the use of antibiotics in agriculture the legislation on plant protection products referred to in the previous chapter on pesticides and established, namely, in Law No 26/2013, of 11 April.

On the other hand, the Resolution of the Council of Ministers 86/2020, of 13 October, which approves the Innovation Agenda for Agriculture 2020-2030, establishes a set of measures aimed at reducing the contamination of agricultural products with antibiotics from their application in animals or even humans. In fact, it has been proven that the use of manure of animal origin to which antibiotics have been administered, as well as the use of waste sanitary waters of humans that use antibiotics, can lead to the contamination of agricultural products.

Decree-Law No 145/2015, of July 21, ensures the execution and guarantees the fulfilment, in the internal legal order, of the obligations arising from the Regulation (EC) 1107/2009, of the European Parliament and of the Council, of October 21, concerning the placing of plant protection products on the market and revoking Directives 79/117/EEC and 91/414/EEC, of the Council. Accordingly with this Decree-Law the use of substances in agriculture has to be authorized by the Directorate-General for Food and Veterinary (DGAV). Existing legislation is fundamentally oriented towards placing on the market and reducing the risk inherent in the handling and use of Plant Protection Products.

All these measures aim to implement safety conditions in the distribution and marketing circuits of plant protection products that preserve the environment and protect users in particular, reduce the risks for the environment and public health in the application of those products, strengthening the capacity to monitor residues and the improvement of the infrastructures of the National Agricultural Warning Service, for a more correct and safer use of these same products.

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Since antibiotics are, generally, chemical products with which it is intended to effectively solve a biological problem and have a certain toxicity inherent in themselves, it becomes necessary to assess the risks associated with their use at the level of handlers, applicators, consumers, environment, non-target species. Users must have access to accuracy information through the label. The assessment is a complex and lengthy bureaucratic process comprising three phases: acceptance of administrative elements and technical-scientific data relating to the characteristics, properties and behaviour of the product – active substance and formulated product, provided by the applicant; the study and evaluation of the elements and data presented and the final decision.

At national level, the obligation for these products to be marketed subject to a specific authorization granted after studying their characteristics, verifying the guarantee of an acceptable biological activity and the non-existence of inconveniences for public health.

There are entities controlling the use of plant protection products both at European and national level. At the European level, the European Food Safety Authority (EFSA) was created in January 2002 by the Regulation (EC) 178/2002, to be the cornerstone in the area of food safety in the EU. In close collaboration with national authorities and in open consultations with s*takeholders*, this entity produces and provides scientific advice and clear communication on existing or emerging risks. To this end, it follows operating principles and rules that enshrine a commitment to excellence, independence, openness and transparency in all of the Authority's work. EFSA's remit encompasses food safety, feed safety, nutrition, animal health and welfare, plant health and crop protection. Under the EFSA, the *advisory forum* (Consultative Forum) establishes the link between the European Food Safety Authority and the food safety authorities of the 28 Member States of the EU, participating as observers – the European Commission – and some associated countries – such as Norway, Iceland and Switzerland.

In Portugal, ASAE, as the national authority responsible for assessing risks in the food chain, is the Portuguese member of *advisory forum* of EFSA, in accordance with the Decree-Law No 194/2012, in Article 2(1)(b)(iii). Currently, the permanent Portuguese representative is the General Inspector of ASAE, who, as the highest

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leader, ensures national representation at meetings of this body. ASAE, within the scope of its duties, carries out inspection operations on the activities of distribution, sale and application of plant protection products for professional use and plant protection product adjuvants, as well as verification of monitoring procedures for and use of said products. This matter integrates the National Action Plan (PAN) drawn up by the Directorate-General for Food and Veterinary Medicine and in which ASAE is involved as a market inspection authority. This Plan aims to reduce the risks and effects of using plant protection products on human health and the environment, maintaining the economic viability of agricultural production and effective control of crop enemies. These inspection actions focus, essentially, on aspects relating to the general requirements for carrying out the sales distribution activity, installations and operating procedures, existence of a responsible technician, responsible sales, sales and distribution records, as well as the conditions and security procedures in the scope of management systems for packaging waste and surplus plant protection products.

In a press release issued by ASAE on May 5 of 2016, it is described that an inspection action was carried out, regarding the distribution, sale and application of plant protection products for professional use. Around 72 economic operators were inspected and 9 proceedings were instituted for administrative offences. The main infractions were the lack of posting of the authorization to carry out the activity and the identification of the responsible technician, the failure to present mere prior communication and the lack of registration of sales and maintenance information, with around 800 units of plant protection products having been seized (lack of displaying the authorization to carry out the activity and identification of the responsible technician) for a global value of around 4,000 EUR.

One of the pillars of the European Union is based on the free movement of people and goods. Plant protection products are goods that constitute an exception to this rule, as they can cause public health and/or environmental problems, so that justify the restriction of its commercialization and the consequent regulation of these matters. The main purpose of the rules that restrict the use of plant protection products is related to the danger that these products pose to the environment, to human beings and to the ecosystem. Another factor to take into account is related to the resistance that is created to the effects of antibiotics (Avantika Mann, 2021).

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In the National Plan to Combat Antimicrobial Resistance 2019-2023 entitled "One Health", prepared jointly by the Directorate-General for Health (DGS), Directorate-General for Food and Veterinary (DGAV) and Portuguese Environment Agency (APA), the threats related to the constant use of antibiotics and the problems related to the resistance that organisms are creating are described As explained, bacteria circulate between humans and animals through food, water, and the environment. Even if the antibiotic used has a conservative effect on the culture in question, its use always ends up causing the development of some type of resistance, aggravating the situation when there is an excessive and inappropriate use of these antibiotics. As such, it is necessary that there are restrictions so that use of the respective antibiotics can be controlled.

EU rules require farmers to apply the principle of integrated protection, that is, the use of antibiotics should only be resorted to when there is no other alternative and effective method. Although farmers are obliged to apply the principle of integrated protection, they do not have to keep records on how they have done so and there are low levels of compliance. Following this policy of integrated protection, Member States are obliged to contain sanctioning regimes, although audits carried out recently show that few states actually apply these sanctioning measures.[159]

The Farm to Fork Strategy, launched under the European Green Deal, sets the EU target to reduce the global use and risk of chemical pesticides by 50% and the use of the most hazardous pesticides by 50% by 2030. EU Rural Development as well as interventions programmed in the Strategic Plan of the Common Agricultural Policy in Portugal (PEPAC 2023-2027) contribute to the achievement of these objectives, the latter with indicators of the result of the support given to the practices of Integrated Production and Organic Production (in areas benefited and amount of support), promoting the reduction in the use of plant protection products.

In Portugal, restrictions on the use of antibiotics involve the need for authorization required for them to be placed on the market. This authorization must be granted by the DGAV, in accordance with Decree-Law No 145/2015 of 21 July, and also with Regulation (EC) 1107/2009. According to Article 32(1) of the Regulation, the authorization period is not fixed, depending on the time that was defined in the

[159] See: Special Report of the European Court of Auditors, 2020.

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respective authorization granted Article 33 stipulates that this authorization request is made in each of the Member States where the intention is to introduce and use the plant protection product.

Another existing restriction within the marketing of these products is associated with the obligation of certain conditions for the installation of these products, which must follow the parameters of Law No 26/2013. An additional restriction implemented based on the danger of using antibiotics is related to the mandatory existence of a responsible technician, with proper training, and its regime is contemplated in Law No 26/2013, in Articles 6 and 7.

Failure to comply with the rules relating to the use of products such as antibiotics, in Portuguese law, gives rise to administrative offences. Law No 26/2013, of April 11, which regulates the activity of sale, distribution and application of these products, provides for an administrative offense sanctioning regime in Article 54 and following, leaving ASAE to implement accessory sanctions and fines, and these can vary between 250 EUR and 5,000 EUR in the case of a natural person, and between 500 EUR and 22,500 EUR in the case of legal persons (Article 55). Article 58 stipulates environmental offences, which is based on Law No 50/2006, of August 29, which approves the framework law on environmental offences.

Slovakia (Jarmila Lazíková)

The basic legislation binding both the Slovak legislation and the executive in the field of agricultural inputs and control are EU legislation, primarily:

– Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety,

– Regulation (EC) No 183/2005 of the European Parliament and of the Council of 12 January 2005 laying down requirements for feed hygiene,

– Regulation (EU) 2019/4 of the European Parliament and of the Council of 11 December 2018 on the manufacture, placing on the market and use of medicated feed, amending Regulation (EC) No 183/2005 of the European Parliament and of the Council and repealing Council Directive 90/167/EEC.

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At the national level, the basic law in the field of animal nutrition and feeding is Act No 271/2005 Coll. on the production, placing on the market and use of feed (Feed Act) as amended, which it regulates:

– Conditions for registration of natural persons and legal entities that produce feed, including primary production, process or market it;

– Approving the production process and activities related to the introduction of feed to the market;

– Feed requirements, marketing and use of feed;

– Obligations of the feed business;

– Performance of expert feed control;

– The authority and scope of state administration bodies in the field of animal feed;

– Sanctions for breach of obligations established by this law and binding legal acts of the European Communities;

– Rights and obligations of natural persons and legal entities that prepare and market medicated feed.

The preparation of medicated feed is closely related to Act No 362/2011 Coll. on medicines and medical devices and on amendments to certain laws and Act No 39/2007 Coll. on veterinary care. Control of the preparation of medicated feed and inspection of medicated feed during their preparation is carried out by the Institute for the Control of Veterinary Medicines in cooperation with the relevant regional veterinary and food administration (§ 30 paragraph 3 of Act No 39/2007). In addition, the issue of medicated feed is supplemented by Government Regulation No 41/2004 Coll., establishing requirements for the preparation, placing on the market and use of medicated feed.

The Animal Feed Act and Regulation of the Government of the SR No 380/2009 Coll., establishing the rules for the implementation of official controls of animal feed establish the rules for the procedure of state administration offices in the area of animal feed.

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The Central Agricultural Inspection and Testing Institute (CAITI), specifically the Agricultural Inputs and Inspections Section, ensures the fulfillment of tasks in the area of professional and inspection activities, as well as in the area of administrative procedures in the field of soil and fertilizers; plant protection; animal feed and nutrition; seeds and seedlings; pesticide registration and control. Within it, the Department of Animal Feed and Nutrition is, in accordance with the Animal Feed Act, the administrative authority for monitoring compliance with legislative requirements related to feed safety. CAITI within the given section, there is also an inspection department that performs official inspections. Control in the field of animal nutrition and feed is handled by the Department of Animal Feed and Nutrition Control. This department carries out official control of feed at all stages of production, processing, introduction of feed to the market and its use in the SR. Furthermore, it carries out inspections in the field of registration of fodder enterprises, checks certificates of registration of fodder enterprises in the register and a certificate of professional competence of a person for the activity of a fodder enterprise. Performs the collection of feed samples as part of official control for analytical analyses. CAITI is authorized to decide on administrative offences (Section 12 of the Feed Act).

Another state administration authority authorized to control and impose fines for violations of legislation in the field of animal feed is the State Veterinary and Food Administration. However, when imposing fines for violations of obligations in the field of fee and animal nutrition, it proceeds according to a special regulation, which is Act No 39/2007 Coll. on veterinary care. According to § 48 paragraph 4 letter t) the veterinary administration authority shall impose a fine of between 300 and 800 EUR on a natural person if he uses feed for feeding animals that does not meet the requirements of EU or national legislation, including provisions on additives, which include antibiotics. If, within one year from the date of the decision on the imposition of a fine, there is a repeated violation of the obligation for which the fine was imposed, the veterinary administration authority shall impose a fine of up to twice this amount. In block proceedings, a fine of up to 400 EUR can be imposed for this offence, and in order proceedings up to 650 EUR. Fines are income of the state budget.

Another state administration authority authorized to control and impose fines for violations of legislation in the field of animal feed is the State Veterinary and Food

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Administration. However, when imposing fines for violations of obligations in the field of feed and animal nutrition, it proceeds according to a special regulation, which is Act No 39/2007 Coll. on veterinary care.

The use of antibiotics in addition to coccidiostats and histomonostats in animal nutrition is prohibited without exception only for growth-stimulating purposes. The use of antibiotics is possible, for example, in the production of medicated feed Pursuant to Regulation (EU) 2019/4 of the European Parliament and of the Council on the production, placing on the market and use of medicated feed, medicated feed is feed that is prepared for direct feeding to animals without further processing, consisting of a homogeneous mixture of one or more veterinary drugs or of intermediate products with feed materials or feed compounds. According to § 30 of the Act on Veterinary Care, when preparing medicated feed, placing medicated feed on the market, storing medicated feed, prescribing medicated feed by veterinarians and using it exclusively for medical reasons or medical-protective reasons, or if their mass application is required, must proceed in accordance with a special regulation, which is Government Regulation 412004 Coll. in such a way as to prevent endangerment or damage to the health of animals and to ensure the health harmlessness of products of animal origin obtained from animals that have been given medicated feed.

Medicated feed can only be prepared by producers who have premises and conditions approved for this activity by the Institute for the Control of Veterinary Medicines and who are subject to veterinary supervision.

The control of the preparation of medicated feed and the inspection of medicated feed during their preparation is carried out by the Institute for the Control of Veterinary Medicines in cooperation with the relevant regional veterinary and food administration.

Inspection of the possession, placing on the market and use of medicated feed and inspection of medicated feed during these activities are carried out by the veterinary administration authorities (Ministry of Agriculture and Rural Development of the SR, State Food Administration of the SR and regional veterinary and food administrations). The regional veterinary and food administration carries out inspection of accompanying certificates of medicated feed and inspection of records, storage and use of medicated feed in animal farms. If the inspections reveal, or if based on them, a suspicion arises of non-compliance with the conditions for the preparation of medicated feed, the Institute

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for the Control of Veterinary Medicines will carry out all the necessary checks and measures at the manufacturer of medicated feed, if the relevant regional veterinary and food administration has not done so.

The owner or possessor of animals is obliged to record the use of medicated feed in farm animals in the register and to provide data on the consumption of medicated feed to the competent authority of the veterinary administration.

4. WATER QUALITY (*Susana Almeida*)

Water is the main source for human survival and one of the most important natural resources for all living beings and for regulating the climate. Besides, water plays a paramount role in economy, agriculture and energy production and thus is a vital ingredient for human welfare.

Among the seventeen Sustainable Development Goals (SDGs) outlined within "The 2030 Agenda for Sustainable Development", adopted by all United Nations Member States in 2015[160], Goal 6 is to ensure the availability and sustainable management of water.[161] According to the "Sustainable Development Goals Report 2022", over the past 300 years 85% of the wetlands have been lost, more than 733 million people live in countries with high and critical levels of water stress and, at current rates, in 2030, 1.6 billion people will lack safely managed drinking water.[162]

Regarding Europe, in 2019, 29% of the EU territory was affected by water scarcity, although this is more common in southern Europe "where approximately 30% of its population living in areas with permanent water stress and up to 70% of its population living in areas with seasonal water stress during summer"[163] and water abstraction for agriculture is one of the most significant pressures on freshwater.[164] Plus, according to the European Environment Agency data (2022), about 25% of total groundwater body area in EU territory is in poor chemical status and 9% in poor quantitive status, and

[160] United Nations, The 17 Goals <https://sdgs.un.org/goals> accessed 10 December 2022.

[161] United Nations, The 17 Goals <https://sdgs.un.org/goals> accessed 10 December 2022.

[162] United Nations, *Sustainable Development Goals Report* (2022).

[163] European Environment Agency, *Water scarcity conditions in Europe (Water exploitation index plus)* <https://www.eea.europa.eu/ims/use-of-freshwater-resources-in-europe-1> accessed 23 January 2023.

[164] *Idem.*

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once again the main reason for this poor chemical status is diffuse pollution from agriculture.[165]

Surface and undergroundwaters face indeed multiple pressures including climate change, with widespread droughts, storms, fires and floods, as well as pollution from industrial chemicals, pharmaceuticals or agriculture, affecting the sustainable development worldwide.

Agriculture is one of the major causes of water pollution, often associated with unsustainable management practices. Thus, water is affected by several pressures, including "pollution from pesticide residues, fertilisers, and chemicals; heavy sedimentation caused by spoil erosion; overuse unsustainable abstraction".[166] Additional pressure to agricultural water use is caused by the rising of global temperatures, "with heightened risks of drought in some areas and flooding in others".[167]

Agricultural pollution "provides a source of food for micro-organisms within the water, which in turn expend the water's oxygen supply whilst breaking it down".[168] The impact of this pollution is known as the Biological Oxygen Demand. Water pollution is also caused by the increased use of nitrogen based artificial fertilisers, leading to eutrophication. Eutrophication "is, essentially, the enrichment of individual waterways by nutrients, such as nitrate and phosphate".[169] The excessive consumption of nitrogen compounds by plants leads to its filtering in the aquatic system and causes a rapid increase of toxic algae (algal blooms), which reduce oxygen in water affecting underwater life, besides having an important human impact, as high levels of nitrate in

[165] European Environment Agency, *World water day: attention on Europe's groundwater* <https://www.eea.europa.eu/highlights/world-water-day-attention-on> accessed 23 January 2023.

[166] European Commission <https://agriculture.ec.europa.eu/sustainability/environmental-sustainability/natural-resources/water_en> accessed 21 January 2023.

[167] See also European Environment Agency, *European Waters – Assessment of status and pressures 2018* (2018) 14 <https://www.eea.europa.eu/publications/state-of-water> accessed 23 January 2023.

[168] Brian Jack, *Agriculture and EU Environmental Law* (Available from: VitalSource Bookshelf, Taylor & Francis, Routledge, 2016) 36.

[169] Brian Jack, *Agriculture and EU Environmental Law, cit.,* 7. The Directive 91/676/EEC or the Nitrates Directive defines eutrophication in Article 2(i) as "the enrichment of water by nitrogen compounds, causing an accelerated growth of algae and higher forms of plant life to produce an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned".

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water can cause illness (methemoglobinemia and cancer).[170] The use of pesticides in agriculture raises also multiple concerns, as there is the risk of them entering in the food chain through contaminated agricultural products or public water supplies.[171] In the EU, agricultural pollution, due to the mentioned grounds, is the main cause of groundwater's failure to achieve good chemical status.[172]

Nevertheless, water quality is a fundamental requirement for several aspects of human life and welfare, namely for human consumption, agriculture and food production. Therefore, reliable monitoring data on ambient water quality and the creation of global, interdisciplinary and cross-sectored agri-environmental policies are essential to achieve good ambient water quality.

But how can we define water quality? Water quality "is a general term used to describe the physical, chemical, thermal, and/or biological properties of water".[173] It is often defined "in terms of human usage for consumption, recreation, and aesthetics", but in broader terms "the quality of water affects all components of the aquatic ecosystem" and thus "water quality is a parameter that cannot be defined easily nor can standards be set that meet all uses and user needs". According to the United Nations Environment Programme (UNEP), water quality can be classified into four types: potable water, palatable water, contaminated water and infected water. Moreover, the five water quality parameters, under SDG indicator 6.3.2 that monitors the proportion of bodies of water with good ambient water, in relation to national and / or subnational water quality standards, are: dissolved oxygen (surface water), electrical conductivity (surface water and groundwater), nitrogen/nitrate (surface water and groundwater); phosphorus (surface water); pH (surface water and groundwater).[174] In the European context, although the concept seems to go back to the Surface Water Quality Directive

[170] Brian Jack, *Agriculture and EU Environmental Law, cit.,* 37 and UN Environment Programme, *Four reasons why the world needs to limit nitrogen pollution (2023)* <https://www.unep.org/news-and-stories/story/four-reasons-why-world-needs-limit-nitrogen-pollution> accessed 21 January 2023.

[171] Brian Jack, *Agriculture and EU Environmental Law, cit.,* 38.

[172] European Environment Agency, *European Waters. cit.,* 8.

[173] Jerry C. Ritchie, Frank R. Shiebe 'Water quality' *Remote Sensing in Hydrology and Water Management,* Gert A. Schultz, Edwin T. Engman (eds) (Springer, 2000) 287-303.

[174] UN Environment programme. FAQS on Water quality <https://www.unep.org/explore-topics/water/what-we-do/world-water-quality-alliance-wwqa-partnership-effort/faqs-water> accessed 23 January 2023.

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75/440/EEC of June 1975, in the light of the Directive 2000/60 of the European Parliament and of the Council of 23 October establishing a framework for Community action in the field of water policy (Water Framework Directive), namely Article 2(35), "«Environmental quality standard» means the concentration of a particular pollutant or group of pollutants in water, sediment or biota which should not be exceeded in order to protect human health and the environment". Plus, Article 16 of this Directive establishes a set of environmental quality standards to be met by Member States in order to, within a common strategy, eliminate or reduce the surface and groundwater pollution.

Regarding water quality monitoring, a global health-related water quality monitoring programme as part of the UNEP's Global Environmental Monitoring Systems (GEMS) was launched by the UNEP and the World Health Organization (WHO), after the 1972 UN Conference on the Human Environment held in Stockholm. A programme on water quality monitoring, known as GEMS/Water, was formally founded in 1977 by the interagency UNEP, WHO, UNESCO and World Meteorological Organization (WMO).[175] Moreover, in 2019, in Italy, the UNEP and the Joint Research Centre of the European Commission launched the World Water Quality Alliance (WWQA) that aims to "provide governments and other stakeholders relevant evidence-based assessment, scenarios, solutions and services on water quality issues"[176] in a genuine partnership focused on improving the water quality in a global scale. At an EU level, the Water Framework Directive (WFD) lays down the requirements for the water monitoring programme and the European Commission collects several data indicators related to water through the common monitoring and evaluation framework.[177] The Commission's agri-food data portal contains a dashboard showing the most relevant indicators for

[175] See: United Nations Environmental Programme, *Global Water Quality Monitoring GEMS/Water: A 50 year history* (2022) 3 <https://wedocs.unep.org/bitstream/handle/20.500.11822/40286/GEMS_Water_History.pdf?sequence=3&isAllowed=y> accessed 23 January 2023.

[176] United Nations Environmental Programme. World Water Qulity Alliance launched to tackle global water crisis. See: <https://www.unep.org/news-and-stories/press-release/world-water-quality-alliance-launched-tackle-global-water-crisis> accessed 24 January 2023. For further information on this alliance, see: <https://wwqa.info/> accessed 24 January 2023.

[177] European Commission. Common monitoring and evaluation framework of CAP <https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cmef_en> accessed 24 January 2023.

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water quality and availability.[178] Plus, there is the Water Information System for Europe (WISE), a partnership launched in 2007 between the European Commission and the European Environment Agency that provides "a web-portal entry to water related information ranging from inland waters to marine".[179]

Countries and international organizations worldwide should engage in addressing the multiple challenges that water quality and quantity face, monitoring and creating ecological water quality standards as well as building and respecting global, interdisciplinary and cross-sectored water-agri-environmental policies essential to achieve good ecological and chemical status in all bodies of surface and groundwater.

In the next title we intend to briefly describe the EU's water policies and to demonstrate how the Common Agricultural Policy (CAP) shows a close commitment to the water safeguard. Water protection is also a paramount aspect of the European Grean Deal, "particularly with regard to the zero pollution ambition for 2030 and the achievement of a sustainable food system, as set out in the farm to fork strategy".[180]

4.1 EUROPEAN UNION FRAMEWORK FOR WATER QUALITY (*Susana Almeida*)

Since the first water directives in the 1970s (*v.g.*, Surface Water Quality Directive 75/440/EEC of June 1975), the EU has promoted a serious effort to build an effective and coherent water legal framework and special attention has been devoted to the prejudicial effects of agriculture on water.

One of the important legal acts we must mention in this regard is the Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (91/676/EEC), known as the Nitrates Directive. This Directive aims to reduce pollution caused by nitrates used in agriculture across Europe by i) monitoring nitrate concentrations of water bodies; ii) designating

[178] European Commission. Water Quality and Availability <https://agridata.ec.europa.eu/extensions/DashboardIndicators/WaterQuality.html?select=EU27_FLAG,1> accessed 24 January 2023.

[179] See: Water Information System for Europe <https://water.europa.eu/#about> accessed 24 January 2023.

[180] European Commission, Safe water <https://agriculture.ec.europa.eu/sustainability/environmental-sustainability/natural-resources/water_en> accessed 30 January 2023.

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nitrate vulnerable zones (NVZs)[181]; iii) establishing codes of good agricultural practices and measures (such as fertiliser application limites to prevent nitrate losses from leaching and run-off; spreading conditions or manure storage methods; limiting the periods when fertilisers can be applied on land; and crop rotations, soil winter cover and catch crops); iv) establishing action programmes to be implemented by farmers within NVZs; v) identifying areas that drain into polluted waters or at risk of pollution. The Nitrates Directive forms an integral part of the WFD.[182]

The Directive 2000/60 of the European Parliament and of the Council of 23 October establishing a framework for Community action in the field of water policy or Water Framework Directive plays a paramount role in relation to water pollution caused by agriculture. This Directive establishes with a holistic and a more ecologically-focused approach a framework for the assessment, management, protection and improvement of the good status of water bodies across the EU. It applies to inland, transitional and coastal surface waters as well as groundwaters.[183] The key environmental objectives of this Directive are outlined in Article 4, namely, regarding surface water, to achieve a "good ecological status" and also a "good chemical status" and to prevent deterioration and, as regards groundwater, to ensure a good groundwater status, meaning a "good quantitative status" and a "good chemical status". Technical guidance and the environmental quality standards that Member States must ensure to achieve these goals are set in Annex V of the WFD in accordance to the Environmental Quality Standards Directive.[184] The WFD requires Member States to divide their territories into River Basin Districts and to use their River Basin Management Plans (Articles 4 and 5)

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[181] As we saw, due to agricultural activities some waters are eutrophic or could contain a concentration of more than 50 mg/l of nitrates. These areas are defined as Nitrate Vulnerable Zones. This limit of 50 mg/l is based upon drinking water standards recommended by the World Health Organisation. World Health Organisation, *European Standards for Drinking Water* (Copenhagen: World Health Organisation, Regional Office for Europe, 1970) 28 <https://apps.who.int/iris/bitstream/handle/10665/40025/European_standards_for_drinking-water.pdf;jsessionid=D4BEA7A67D93B0C87044803C86FD8D42?sequence=1> accessed 30 January 2023.

[182] For further information, see Brian Jack, *Agriculture and EU Environmental Law, cit.,* 171 ff. <https://environment.ec.europa.eu/topics/water/nitrates_en> accessed 30 January 2023.

[183] See the definition of these water bodies in Article 2 of the WFD.

[184] Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council.

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and Programmes of Measures (Article 11) to protect and restore water bodies in order to reach the mentioned good status and to prevent deterioration.

Besides the Environmental Quality Standards Directive, the Groundwater Directive[185] also complements the WFD and helps with its implementation. This Directive contains criteria for the characterisation of chemical groundwater status (standards and procedures for assessing this status; uniform EU-wide quality standards for nitrate and pesticides), as well as a minimum list of parameters for which national threshold values are to be derived and criteria for the derivation of these values.

Also in coordination with the WFD is the Flood Directive[186], as the flood risk management required to Member States by this legal act is an integral part of the integrated river basin management foreseen in the WFD.

Other instruments that are part of this legal building of EU water protection are, *inter alia,* the Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment, the Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption, Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse.

Additionally, the objectives for water drawn in the EU's Seventh Environment Action Programme in 2014, together with those delineated in the EU 2030 Biodiversity Strategy and the Blueprint to Safeguard Europe's Water Resources, presented by the Commission in November 2012[187], are key components of the protection of Europe's water-related ecosystems.[188] Plus, the European Commission implemented in 2019 a process of Fitness Check of the EU water legislation and "concluded that water legislation is broadly fit for purpose, with room for improvement related to investments,

[185] Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration.

[186] Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks.

[187] European Commission, Directorate-General for Environment, *A water blueprint for Europe*, Publications Office, 2014 <https://data.europa.eu/doi/10.2779/12145> accessed 3 February 2023.

[188] European Commission. Water <https://ec.europa.eu/environment/water/index_en.htm> accessed 3 February 2023.

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implementation, integrating water into other policies, chemical pollution, administrative simplification and digitalisation".[189]

Following the recommendation of Blueprint to Safeguard Europe's Water Resources, the implementation of the WFD demands a better integration of water policy objectives with other EU policies and funding mechanisms, namely with the Common Agriculture Policy. The main objective "is to ensure that a sufficient quantity of good quality water is available for people's needs, the economy and the environment throughout the EU".[190]

The current CAP promotes sustainable agricultural systems in the EU, ensures the compliance with EU rules and encourages good management practices, and thus guarantees that agriculture contributes to the EU's water policies. Plus, the new CAP (2023-27) puts agriculture in line with the goals of the European Green Deal and one of the its key aspects is safeguarding water.

Under the cross-compliance rules, meaning the interplay between the respect of EU rules and the support provided to farmers, "all beneficiaries of the CAP have their payments linked with a set of statutory management requirements (SMRs) and good agricultural and environmental conditions (GAECs)".[191] Regarding water, the main cross-compliance rules are: i) Nitrates Directive (linked with payments through SMR 1); ii) buffer strips along water courses (GAEC 1); iii) compliance with authorisation procedures for irrigation (GAEC 2); protecting groundwater against pollution (GAEC 3).

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[189] European Commision. EU Water legislation <https://ec.europa.eu/environment/water/fitness_check_of_the_eu_water_legislation/index_en.htm> accessed 3 February 2023.

[190] European Commission. A Water blueprint – taking stock, moving forward <https://ec.europa.eu/environment/water/blueprint/index_en.htm> accessed 3 February 2023.

[191] European Commission, Safe water <https://agriculture.ec.europa.eu/sustainability/environmental-sustainability/natural-resources/water_en> accessed, accessed 3 February 2023. Regulation (EU) No 1306/2013 of the European Parliament and of the Council of 17 December 2013 on the financing, management and monitoring of the common agricultural policy and repealing Council Regulations (EEC) No 352/78, (EC) No 165/94, (EC) No 2799/98, (EC) No 814/2000, (EC) No 1290/2005 and (EC) No 485/2008; Commission Implementing Regulation (EU) No 809/2014 of 17 July 2014 laying down rules for the application of Regulation (EU) No 1306/2013 of the European Parliament and of the Council with regard to the integrated administration and control system, rural development measures and cross compliance; Commission Delegated Regulation (EU) No 640/2014 of 11 March 2014 supplementing Regulation (EU) No 1306/2013 of the European Parliament and of the Council with regard to the integrated administration and control system and conditions for refusal or withdrawal of payments and administrative penalties applicable to direct payments, rural development support and cross compliance.

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In addition, according to CAP rules, farmers will only receive the green direct payment if they comply with three mandatory practices that can bring benefits to water: crop diversification and maintaining permanent grassland help to improve soil structure and strengthen its ability to retain water and, on the other hand, restrictions on the use of pesticides and fertilisers on ecological focus areas (they must dedicate 5% of arable land to areas beneficial for biodiversity) reduces the risk of pollution.[192]

Moreover, "Improving water management and increasing efficiency in water are two key focus areas for rural development (the so-called 'second pillar' of the CAP)" and EU Member States can contribute to these areas "by supporting farmers who make extra steps towards sustainable water use: through agri-environment-climate measures (AECMs), in which farmers commit to adopting actions that protect water quality and improve efficiency; investment measures can be used to cover the costs of capital-heavy changes, such as more efficient irrigation installations; Water Framework Directive payments support farmers who adapt their land as part of river basin management plans".[193]

There is also the common monitoring and evaluation framework that collects several data indicators relevant to water (water quality and availability).[194]

[192] Regulation (EU) No 1307/2013 of the European Parliament and of the Council of 17 December 2013 establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy and repealing Council Regulation (EC) No 637/2008 and Council Regulation (EC) No 73/2009; Commission Delegated Regulation (EU) No 639/2014 of 11 March 2014 supplementing Regulation (EU) No 1307/2013 of the European Parliament and of the Council establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy and amending Annex X to that Regulation; Commission Implementing Regulation (EU) No 641/2014 of 16 June 2014 laying down rules for the application of Regulation (EU) No 1307/2013 of the European Parliament and of the Council establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy.

[193] European Commission, Safe water <https://agriculture.ec.europa.eu/sustainability/environmental-sustainability/natural-resources/water_en> accessed 3 February 2023. Regulation (EU) No 1305/2013 of the European Parliament and of the Council of 17 December 2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and repealing Council Regulation (EC) No 1698/2005.

[194] See: Article 110 of Regulation (EU) No 1306/2013; Commission Implementing Regulation (EU) No 834/2014 of 22 July 2014 laying down rules for the application of the common monitoring and evaluation framework of the common agricultural policy.

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4.2 WATER QUALITY IN DOMESTIC LAW

Italy (Enrico Mezzacapo)

The Italian answer to the communitarian directives on the protection of the quality of water started with the controversial[195] "Merli Law" No 319 of 10 May 1976. Indeed, while the EU policies were setting up to define quality objectives for the "receiving water environment", so to make the use of the resource by different users and for different uses compatible, the Italian legislator instead gave preeminence to the indication of specific limits for substances discharged into water bodies that were regulated by the organization of technical services and a general rehabilitation plan drawn up by the Italian Regions.[196] This was followed by numerous regulatory interventions, among which is certainly worth to mention the Law No 36 of 5/1/94 "Provisions on water resources", known as the "Galli Law" that established the need of analysis of the water cycle, and therefore the integrated water service underpinning it, which was then repealed by Legislative Decree 152/2006 which transposed the European Directive 2000/60, covering the water cycle in all its aspects, both management and environmental. With the latter, two classes of "quality objectives" are defined that must be ensured for significant water bodies: The "destination-specific" quality objective identifies the status of water bodies suitable for a particular use and the "environmental quality" objective is defined according to the ability of water bodies of maintaining their natural self-purification processes and to support large and well-diversified animal and plant communities. With this provision, the entire national territory, including the minor islands, was subdivided into hydrographic districts; in each hydrographic district the District "Basin Authority" is established and the "District Basin Plan" is adopted This constitutes the cognitive, regulatory and technical-operative instrument through which actions and rules of use are planned and programmed for the conservation, defense and valorization of the soil and the correct use of water, on the basis of the physical and environmental characteristics of the territory concerned With

[195] The Court of Justice in the case *"Commission vs Italy"* stated that the Italian regulation of 1976 known as "Legge Merli" was incompatible with the EU directives because of the evaluation procedure of dangerous pollutants disposal that would create potential risks that are not in line with the EU requirments. To know more, please see: *Commissione delle Comunità europee contro Repubblica italiana* (1991) Corte di giustizia Causa C-360/87 <https://eur-lex.europa.eu/legal-content/IT/SUM/?uri=CELEX:61987CJ0360>.

[196] See: Giovanni Cordini and Claudio Stroppa, 'Il bene acqua: realtà e prospettive sociali'(2006), *Aracne A14.* Vol 109.

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the decree of 1999, 2000 and 2001, the sanctions regime for the violations of water quality rules and standards was framed The administrative sanctions, like the ones for the exceeding of emission limit values obligations, are the sanctions you find the most at the present case. Instead "criminal sanctions" are present on a purely residual basis. The sanctions under criminal law have been limited to the violations considered most serious, like in the cases of industrial wastewater discharged without authorization, discharges containing hazardous substances, discharges in which certain limit values set by technical regulations are exceeded.[197] In relation to the monitoring system, at the European level, there is the EU Network for the Implementation and Enforcement of Environmental Law (IMPEL).[198] Looking at the specific case of Italy, the national normative framework is very complex and fragmented Nevertheless, according to the Law No 183/1989, an *ad hoc* public agencies have been introduced, named River Basin Authorities, whose main objective is to develop and apply the River Basin Management Plan and to monitor and implement control activities and quality standards evaluations.

The relations between the quality of the water and the agriculture activity are particularly significant in the EU, especially in Italy. Pesticides and fertilizers are applied heavily in intensive agricultural regions of Europe, which contributes to excessive nutrient and pollutants quantity in soils, groundwater, and surface waters. It is estimated that Agriculture may contribute 55% to nonpoint source pollution of surface waters in the EU.[199] The Agriculture effects at stake are the ones on water chemistry, nutrient lost, eutrophication alteration of hydrological cycles and consequentially food modification.[200] In the Italian context, the agricultural sector is by far the most water-intensive sector in the Country, and it is estimated to be around the 60% of the entire

[197] To know more about the Italian sanction regime: Amendola, Le sanzioni del nuovo decreto sulle acque: un dubbio di costituzionalità In (1999) *Rivista Giur. dell'Ambiente* 466.

[198] This is an international network of the environmental authorities of EU Member States, which has been created in order to enforce the environmental law by providing a platform for policymakers, environmental inspectors and enforcement officers to exchange ideas and best practice <https://www.impel.eu/it>.

[199] Martin Volk, Stefan Liersch and Gerd Schmidt, 'Towards the Implementation of the European Water Framework Directive?: Lessons Learned from Water Quality Simulations in an Agricultural Watershed' (2009) 26 Land Use Policy 580 <https://www.sciencedirect.com/science/Article/pii/S0264837708000902> accessed 9 November 2022.

[200] Brian Moss, 'Water pollution by agriculture'(2008) 363 *Philosophical Transactions of the Royal Society B* 659–666.

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Italian water demand.[201] In particular, in the areas of the South and the Islands, irrigation accounts for the largest share (56-60%), due both to the greater needs of crops and to the lower natural inputs.

The actual availability of water is, however, strongly depleted by the important losses that occur in the distribution network. In addition to the quantitative problems of water availability, there are also qualitative ones; it is well known, indeed, how production activities, industrial and agricultural, and civil settlements, concur in determining widespread water pollution problems. Problems that in several areas, especially in the south of Italy, constitute a real emergency. In the Agri-food sector, among all the pollution threats to water bodies, the Nitrate contamination of water has been historically one of the most demanding issues to solve in the EU agri-food sector. The dispersion of nitrates can cause contamination of drinking water and serious repercussions on human health.[202] In addition, these substances also cause environmental damage through a massive impact on rivers, lakes and coastal waters, as they promote, together with phosphorus, the phenomenon of eutrophication.[203] Therefore, the EU Commission issued the Nitrates Directive (91/676) in December 1991, through which Member States were asked to take appropriate remedies both to identify the problem on their own territory and to implement suitable solutions.[204] Italy answered to this communitarian needs with the Legislative Decree 152 in 1999 and delegated to its Regions the designation of nitrate vulnerable zones (NVZs) and specific action programmes for vulnerable areas.

In November 2020 the European Commission has announced the opening of the infringement procedure No 2018/2249 against Italy for incorrect implementation of Directive 91/676/EEC for the nitrates pollution caused by agricultural sources, with the objection of a series of violations like the failure in designating nitrate-vulnerable zones,

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[201] "*Le risorse idriche nel contesto geologico del territorio italiaNo Disponibilità, grandi dighe, rischi geologici, opportunità*" (July 2020) *Istituto Superiore per la Protezione e la Ricerca Ambientale*) <https://www.isprambiente.gov.it/it/pubblicazioni/rapporti/le-risorse-idriche-nel-contesto-geologico-del-territorio-italiano-disponibilita-grandi-dighe-rischi-geologici-opportunita>.

[202] It is no coincidence that there is a limitation on their concentration in drinking water, which European legislation has set at 50 mg L-1 (see council directive notes number 15).

[203] Di Marco Antonio, Il Diritto Dell'acqua. Principi Internazionali e Regolamentazione Europea (2018); Centro interdipartimentale di ricerche sul diritto europeo dell'Università di Bologna.

[204] Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources 1991 676.

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the appropriate monitoring of its waters and the unsuccessful implementation of additional measures in a number of regions affected by nitrate pollution. This infringement procedure is another example of a long history of the Italian non-compliance conduct with the EU water quality framework.[205] It has been analyzed[206] that the main reason for the difficulties encountered by Italy in adapting to the EU model and in ensuring adequate protection of water resources is not so much due to shortcomings in the regulatory system, but to structural causes like weak planning of interventions, limits and delays in allocations, shortcomings in the effective use of available funds, slow implementation of works and to inefficiencies and culpable carelessness that previous legislative interventions tent to overcome.[207]

Poland (Damian Puślecki)

The legal protection of water in Poland encompasses within its scope not only the protection of water quality, but also water resources. With regard to the impact of agriculture on this element of the environment, these issues should be understood more broadly, covering not only groundwater and surface water, but also including aspects of the protection of the Baltic Sea.[208] 'Water protection' consists in ensuring the best possible water quality and quantity that guarantees the protection of the natural balance, in particular by achieving or maintaining a water quality that corresponds at least to the requirements set out in the Water Law.[209]

The term 'water quality' is defined as the characterisation of the composition and properties of water in terms of its suitability not only for drinking but for various purposes. It is defined by indicators of water quality status, i.e. the amounts and types of pollutants contained in the water and the condition of aquatic biocoenoses.

[205] Italy is currently subject to four infringement proceedings for failure to or inadequate compliance with the Urban Waste Water Treatment Directive 91/271: Procedures 2004/2034, 2009/2034, 2059/2014, 2017/2181. The disputes relate to the violation of the Articles of the Directive.

[206] Andrea Agapito Ludovici, Nicoletta Toniutti and Paolo Negri, 'La Direttiva Quadro Acque 2000/60/CE: stato di attuazione e prospettive in Italia e in Europa' 9.

[207] Cordini and Stroppa (see note n 11).

[208] Based on the regulations of the 1992 Helsinki Convention and the Marine Strategy Framework European Parliament and the Council Directive 2008/56/EC of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (2008) OJ L 164/19, Dorota Łobos-Kotowska (ed), *Contemporary problems of civil and agricultural law*, Monika A. Król Water resources management in rural areas and the legal protection of the Baltic Sea against *eutrophication,* (FAPA Warsaw 2018).

[209] Water law Act, 2017, Journal of Laws No 2021 item 2233.

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A distinction is made between the following indicators: biological, physical and chemical.[210] The terms indicated above are therefore not unambiguous.

In addition to EU law, the basic legal act on water protection in Poland is the Act of 20 July 2017 – Water Law. As water is an element of the environment, these issues are regulated, among others, by the Act of 27 April 2001 – Environmental Protection Law, the Act of 10 July 2007 on fertilisers and fertilisation, the Act of 14 December 2012 on waste, the Act of 3 February 1995 on the protection of agricultural and forest land, the Act of 26 November 2013 on plant protection products and the Act of 16 April 2004 on nature protection or the Act of 13 April 2007 on the prevention of damage to the environment and its remediation.[211]

The scope of water protection in the indicated legal acts mainly concerns water pollution by nitrates and phosphates. In addition, the regulation includes prohibitions and prohibitions as well as rules adopted in the code of good practice in agriculture. The Water Law sets out instruments for the management of water resources. These include water management planning, water consents, fees, charges or the water management information system. The regulation here identifies the authorities competent to issue decisions, supervision and control. The Water Law stipulates the prohibition of the discharge of waste into waters and regulates issues that arise from the typical agricultural use of wastewater.[212] Polish regulation seeks to protect waters in such a way as to ensure food security and to preserve and protect the most effective production possibilities of Polish agriculture. Issues concerning the protection of resources such as water, soil and air should be considered together in agricultural production because of their mutual complementarity and synergy.[213]

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[210] Lexicon of ecology and environmental protection, water quality <https://www.ekologia.pl,> accessed 28 November 2022.

[211] Water law Act, 2017, Journal of Laws No 2021 item 2233, Environmental Protection Law Act, 2001, Journal of Laws No 2021 item 1973, Fertilisers and fertilization Act, 2007, Journal of Laws No 2021 item 76, Waste Act, 2012, Journal of Laws No 2022 item 699, Protection of agricultural and forest land Act, 1995, Journal of Laws No 2021 item1326, Plant protection products Act, 2013, Journal of Laws No 2020 item 2097, Nature protection Act, 2004, Journal of Laws No 2022 item 916 and Environmental damage prevention and remediation Act, 2007, Journal of Laws No 2007 item 493.

[212] Article 84 of the Water law Act, 2017, Journal of Laws No 2021 item 2233.

[213]See: Projekt Planu Strategicznego dla WPR na lata 2023-2027 (wersja 0.4) – projekt przyjęty przez Radę Ministrów i przekazany do KE <https://www.gov.pl/web/wprpo2020/plan-strategiczny-dla-wpr-na-lata-2023-2027-wersja-40--przyjety-przez-rade-ministrow> accessed 1 December 2022.

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Agriculture uses water resources and impacts the environment widely. The negative impact of agriculture is often mentioned first and issues of degradation or devastation are raised.[214] Water is essential for the development of living organisms – plant and animal. Agriculture draws on surface and groundwater resources and, at the same time, impacts on these resources through their chemicalisation or waste discharge. The positive impact of agriculture with regard to water should also be recognised This includes various measures to conserve surface water or properly conducted irrigation of fields.[215] For years, the literature has pointed out that, in addition to the issues of nitrate and phosphate pollution, there is a need to intensify research into the individual impact of agriculture on water.[216]

Improper agricultural activities pose a threat to water purity. This problem includes issues related to land use, fertilisation, use of plant protection products, and the impact of agriculture on surface and groundwater. The most important threats include the intensification of agricultural production and the associated modernisation of farms. In particular, large-scale animal husbandry and the microbiological risks involved, as well as the intensive use of chemical fertilisers or plant protection products. The faulty water and drainage systems used in agricultural production should not be forgotten either.[217]

In Poland, the Act of 13 April 2007 on Preventing Environmental Damage and Remedying Environmental Damage, [218] transposes Directive No 2004/35/EC on Environmental Liability with regard to the prevention and remedying of environmental damage, aims at the actual implementation of the "polluter pays" principle.[219] The legislator in the aforementioned act has defined measures of a preventive nature in

[214] Karolina Rószczka 'Legal protection of water in the agricultural production process' (2007) Vol 2 *Agricultural Law Review* 77.

[215] Wojciech Radecki, *Legal protection of the environment in agriculture* (ARR Zielona Góra 1996).

[216] Joanna Perzyna (ed), *Expert opinion water in agriculture, Living Earth Coalition,* (PKE Warsaw 2020).

[217] Izabela Zimoch (ed), *Water and wastewater management in the Baltic Sea basin,* Zbigniew Bukowski, Manure management in the Helsinki Convention on the Protection of the Baltic Sea and national acts (PZIiTS Poznań 2012).

[218] Environmental damage prevention and remediation Act, 2007, Journal of Laws No 2007 item 4933.

[219] European Parliament and the Council Directive 2004/35/EC of 30 April 2004 on Environmental Liability with regard to the prevention and remedying of environmental damage (2004) OJ L 143/56.

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order to prevent the occurrence of environmental damage. The law distinguishes between liability for imminent danger and for environmental damage. The provisions relating to the environment also apply to water as one of its elements. The aforementioned act introduces criminal sanctions for failure to take preventive or remedial action and for breach of information obligations.[220]

The amendment to the Criminal Code that came into force on 1 September 2022 increased the penalties for environmental offences.[221] The Water Law introduces sanctions of an administrative nature. The sanction for farmers is either in the form of a decision by the environmental authority to remedy the irregularity or it involves the obligation of the agricultural producer to pay a fee. This fee currently amounts to: 548 PLN for lack of a fertilisation plan, 2,192 PLN for improper use of fertilisers contrary to the Act and 3,288 PLN for improper storage of natural fertilisers. The fee rates indicated above are low and cannot perform a preventive function. The amount of the above amounts is determined by the announcement of the Minister of Infrastructure.[222]

In Poland, the competent authority for water management is the Chief Inspector of Environmental Protection. It is a central government administration body supervised by the minister responsible for climate affairs. The Inspectorate for Environmental Protection controls compliance with environmental law, including water law, and is responsible for monitoring the state of the environment. The current Polish regulation, however, does not ensure adequate protection of water mainly due to its dispersion, too weak impact on the protection of water resources and insufficient sanctions for environmental pollution. The challenges posed by the newly defined CAP and the support of agriculture from EU funds represent a real opportunity to improve the current situation. The need to protect water in agricultural production requires the construction of legal regulations on the basis of well-balanced models: the command and prohibition model and the stimulus model. Here, there is a need to systematise the legal regulation taking into account the issues of food security, preservation of the

[220] See: Articles 28 and 29 of the Environmental damage prevention and remediation Act, 2007, Journal of Laws No 2007 item 493.

[221] Amending certain laws to Counter environmental crime Act, 2022, Journal of Laws No 2022 item 1726.

[222] Amounts determined in accordance with the Notice of the Minister of Infrastructure of 6 October 2021, Polish Monitor No 2021 item 937.

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production capacity of agriculture and the rational use of water, soil and air in the agricultural production process.

Portugal (Mário Frota)

In Portugal The National Water Plan[223] should cover multiple domains, such as: ecosystem services; energy and climate change; agriculture; forestry; economy; management of shared river basins; urban water cycle; enhancement of rivers and coasts; risk management; conservation of species and natural habitats. The concept of water quality under the Portuguese legal framework is in line with the definitions contained in the WFD, as this act was transposed to the Portuguese legal system by the Law No 58/2005, of 29 December[224], known as Water Act. Besides, the Decree-Law No 236/98, of 1 August, sets the standards, criteria and quality objectives in order to protect the aquatic environment and improve water quality according to its main uses. This law establishes criteria for the minimum frequency of sampling and analysis for quality monitoring, depending on the classification of surface freshwater intended for the production of water for human consumption (Annex I to V). Plus, the Decree-Law No 306/2007, of 27 August, regarding the quality of water for human consumption, defines the attributions and competences of the managing entities of public supply systems, namely regarding the verification of water quality standards (Article 10). Moreover, the Decree-Law No 103/2010 of 24 September, which transposes into national law the Directive 2008/105/EC, establishes environmental quality standards for priority substances and other pollutants, with the aim of ensuring the gradual reduction of pollution and achieving good surface water status.

It is clear that agricultural activities in the strict sense and, in particular, agri-livestock farming, have a very negative impact on water quality. In this regard, we should mention the Decree-Law No 235/97, of 3 September 1997, which transposes Council Directive 91/676/EEC of 12 December 1991 (Nitrates Directive), concerning the protection of waters against pollution caused by nitrates from agricultural sources

[223] See: Plano Nacional da Água. O Plano Nacional da Água define a estratégia nacional para a gestão da água. <https://apambiente.pt/agua/plano-nacional-da-agua>.

[224] See: <https://www.pgdlisboa.pt/leis/lei_mostra_articulado.php?nid=1191&tabela=leis&ficha=1&pagina=1>. This Law was amended by Decree-Laws 245/2009, of 22 September; 60/2012, of 14 March and 130/2012, of 22 June and by Laws 42/2016, of 28 December and 44/2017, of 19 June.

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into national law.[225] As stated in the preamble of this Act, "The pollution of the water environment in Portugal by nitrates of agricultural origin is almost always associated with intensive agriculture, in which, in certain areas, some excesses are committed in the use of fertilizers". Encouraging good agricultural practice will therefore contribute to improving the level of protection of waters against diffuse pollution of agricultural origin.

On the other hand, drainage conditions in certain parts of river basins are known to make them particularly vulnerable to nitrogen pollution, with adverse consequences for surface and groundwater, requiring special protection measures.

The original edition of the Code of Good Agricultural Practice dates back to 1997. This act was amended and republished by Decree-Law No 218/2015, of 7 October, due to the transposition of the Directive 2013/39/EU. Following the lines of the Nitrates Directive, a set of actions were implemented There is the "Code of Good Agricultural Practices for the protection of waters against pollution with nitrates and phosphates of agricultural origin" (Order No 1230/2018, Official Journal 25/2018, Series II of 05/02/2018), implemented by the National Institute for Agricultural Research and Veterinary (INIAV[226]), with the joint coordination of the Directorate General of Agriculture and Rural Development (DGADR[227]), after hearing the Portuguese Environment Agency, the competent services of the Ministry of Agriculture, Forestry and Rural Development and the organizations of the agricultural sector. There is also the Order No 238/2014 of 7 January that defines the powers, composition and operation of the Technical Committee for Monitoring the Nitrates Directive.

In an extensive document with pronounced technical characteristics and full of a multitude of annexes, rules are established, which are perhaps difficult to grasp and assimilate, and which justify extensive basic training so that good practices in this area may go from being a rash of intentions to a feasible plan of action in everyday agricultural activity.

[225] This act was amended by Decree-Law No 68/99, of 11 March.

[226] See: <https://www.iniav.pt/>.

[227] See: <https://www.dgadr.gov.pt/>.

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The extensive arsenal of legislation published in this area is particularly impressive. It would be preferable to adopt the maxim "fewer laws, better law" so that the universe of those to whom it is addressed can fully assimilate it.

One of the principles enshrined in the Water Framework Directive (DQA)[228] and expressly translated into national laws is that of the economic value of water: by virtue of which the current or potential scarcity of such a resource is recognised and the need to ensure its use in an economically efficient manner, with the recovery of the costs of water services, even in environmental and resource terms, and based on the principles of the polluter pays and the user pays, which are considered as being ex ante, in the foundations, in the hollows of the system itself.

The Water Law – Law No 58/2005, of 29 December[229] – contemplates, in effect, such a principle – that of the polluter pays –, in harmony with what is stated, in particular, in its Article 95, which, under the heading “civil liability for environmental damage” reads as follows: “Whoever causes a deterioration in the condition of waters, without such deterioration arising from use in accordance with a corresponding title of use and with the conditions laid down therein, shall bear the full cost of the measures necessary to restore the condition that would have existed if the activity due had not taken place”.

The obligation provided for therein, if the harmful activity is attributable to a corporate body, also applies jointly and severally to the respective directors, managers and administrators.

The national water authority – Portuguese Environment Agency (APA) – and the entities competent in matters of supervision may also determine the administrative possession of the property where the offence is being committed so as to enable the enforcement of the measures provided for.

These provisions are without prejudice to civil liability for damage caused to third parties, under the general terms of the law. In addition to the civil liability emerging from the general principles enshrined in the Civil Code: “Whoever, with intent or mere

[228] See: Bem-Vindo ao sítio oficial da Directiva Quadro da Água<https://www.apambiente.pt/dqa/index.html>.

[229] See: <https://dre.pt/dre/legislacao-consolidada/lei/2005-34506275>.

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fault, unlawfully violates the right of another or any legal provision intended to protect the interests of another shall be obliged to compensate the injured party for the damages resulting from the violation", in this circumstance, the so-called administrative offence liability subsists, in addition, subject to fines [pecuniary sanctions and other accessory penalties] which the law establishes under these terms:

1. "The special system of administrative offences, administrative embargoes and accessory sanctions for infringements of the provisions of this law [the Water Framework Law] and the legislative acts provided for therein shall be defined in a separate statute, observing the principles and rules inherent therein;

2. Until such legislation is published, the legal provisions in force shall apply, without prejudice to the provisions of the following paragraphs;

3. The applicable fines vary between a minimum limit of (euro) 250 and a maximum limit of (euro) 2,500,000 and the fixing of a specific fine depends on the seriousness of the offence, the culpability of the agent, its economic situation and the economic benefit obtained;

4. The fine must, whenever possible, exceed the economic benefit that the offender derived from the commission of the offence;

5. The valuation of the domain assets from which users who do not hold a valid title of use benefit is established by estimate by the Water Resources Authority, and the fine due must always exceed the value of the fee that ceased to be paid, calculated based on that estimate;

6. Without prejudice to criminal liability for disobedience, the entities competent in matters of supervision may establish a penalty payment under the terms to be defined in the [referenced] regulation".

Now, the penalty payment, commonly known as the "astreinte" [a measure capable of imposing a civil "penalty" on the defaulting party], which the Portuguese Civil Code incorporated into its body [through the added Article 829-A], translates as:

1. "In obligations to provide an infungible fact, positive or negative, except in those requiring special scientific or artistic qualities of the obligor, the court shall, at the

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request of the creditor, order the debtor to pay a pecuniary sum for each day of delay in performance or for each breach, as is more convenient to the circumstances of the case;

2. The national water authority and the entities competent in matters of supervision may also determine the administrative possession of the property where the offence is being committed so as to enable the enforcement of the measures provided for;

3. The provisions of the preceding paragraphs are without prejudice to civil liability for damage caused to third parties, under the general terms of the law;

4. The penalty payment provided for in the preceding paragraph shall be fixed in accordance with criteria of reasonableness, without prejudice to the compensation to which it may give rise;

5. The amount of the penalty payment is intended for the creditor and the State in equal shares;

6. When any payment in current money is stipulated or judicially determined, interest at the rate of 5% per annum shall automatically be due as from the date on which the sentence of conviction becomes final and unappealable, which shall be added to the default interest, if any is also due, or to the compensation to which it may give rise."

The State will also be the beneficiary of part of the quantum that will be arbitrated, in this respect, besides obviously the plaintiff who is, in fact, the one who exactly provokes the incident and gives it the adequate impulse. The terms of Decree-Law No 235/97, albeit with the adjustments arising from developments in numerous areas, lay down rules which must be strictly observed The standards are established, as the 2018 Code of Good Practices, in addition to the Action Programmes set out in the basic law, extensively warns. Action Programmes:

1. "In order to pursue the objectives set out [the reduction of water pollution caused or induced by nitrates of agricultural origin, as well as to prevent the spread of this pollution], action programmes to be applied to the zones qualified as vulnerable ... shall be approved by order of the Minister of Agriculture, taking into account the scientific and technical data available as well as the environmental conditions, in particular soil and climatic conditions, in the different regions;

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2. An Action Programme may cover all vulnerable zones in the national territory or several programmes may be drawn up for different zones or parts of vulnerable zones;

3. The action programmes must contain the measures referred to in Annex IV to this statute, which forms an integral part thereof, as well as the rules of the Code of Good Agricultural Practice that are considered relevant;

4. The action programmes must be implemented within a period of four years from their approval;

5. It is the responsibility of the Regional Directorates of Agriculture to establish forms of control to assess the effectiveness of the action programmes established under this Article, which shall include, apart from other measures deemed necessary, those resulting from the application of the provisions of Article 5;

6. If, as a result of the implementation of the programmes, the measures ... prove insufficient for the pursuit of the objectives previously set out, the necessary supplementary measures and actions shall be adopted;

7. The action programmes and the supplementary measures and actions shall be the object of analysis and, if necessary, revised at least every four years;

8. The National Water Institute shall be responsible for notifying the European Commission of the action programmes, any amendments to them and any supplementary measures and actions".

Control is the responsibility of the Regional Directorates for the Environment and Natural Resources, within the framework of the Regional Coordination and Development Commissions:

1. "It is up to the Regional Directorates of Environment and Natural Resources (DRARN), under the coordination of the National Water Institute (INAG)[230] and in concert with the Regional Directorates of Agriculture (DRA) and other entities with specific technical competence for the purpose and available laboratory capacity, to carry out a programme of control of nitrate concentration in surface freshwaters and

[230] INAG was extinguished in 2013 and its competencies integrated into APA.

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groundwater and an assessment of the trophic state of lakes, other freshwater bodies, estuaries and coastal waters;

2. The reference analysis methods set out in Annex II to this statute, which forms an integral part thereof, shall be used in carrying out the aforementioned monitoring and assessment;

3. The conception and implementation of the referenced programme and assessment must take into account the compliance with other Community directives on water quality;

4. The analytical results obtained through compliance with the provisions of paragraph 1 shall be sent to INAG, which must keep them in appropriate records for their permanent updating and easy availability;

5. The operational conditions of the programme for the monitoring and assessment of trophic state will be established by joint order of the Ministers for Agriculture, Rural Development and Fisheries and for the Environment, which will also establish the parameters to be analysed, the respective sampling frequency and the organisational aspects considered relevant."

The legal framework seems adjusted to the requirements set by the European Union through the normative instruments of the European Parliament and, in co-decision, of the Council of the Union. The point is that there is not an abyss between "law in books" and "law in action".

Slovakia (Ľuboš Jurík)

In Slovakia the concept of water quality is based on two pillars – the requirements of the EU Water Framework Directive (WFD) 2000/60/EC and the supplementary legislation related to national requirements expressed in Government Regulation No 269/2010 Coll., which lays down the requirements for achieving good water status. The EU directive focuses on water quality in waterbodies. The present national legislation incorporates the requirements of several subsidiary directives and, in addition to the general requirements for surface and groundwater, also addresses the requirements for waters in accordance with their use. It even addresses the conditions for discharge of treated water from WWTPs into both surface and groundwater. For example, annexes of the Government Regulation contain requirements for special waters – surface waters

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designated for irrigation purposes. The basis of the concept of surface and groundwater quality is not to achieve water that is categorically clear, but rather the kind of water that is clean enough to enable good living conditions for aquatic organisms and that can be of sufficient quality to its consumers. In order for an organism to live, several aspects need to be fulfilled, such as a specific amount of nutrients (nitrogen and phosphorus) and other important microelements. Simultaneously, the environment cannot have more than a small number of harmful elements and compounds. The fundamental objective is to achieve a good quality of water. Therefore, the first assessment criterion has become the biological quality of water, then the hydro and morphological quality, and the final and third criterion is the chemical quality of water.

Regional parameters reflecting the climate zone and altitude of the waterbody under consideration have also been included in the quality assessment. For that reason, in Slovakia, we assess waterbodies in the Carpathian region and those in the Pannonian lowlands separately.

The main issue concerning water quality and its relation to the use of agricultural land is a phenomenon called eutrophication. It is the increased level of various forms of nitrogen in surface waters.

This is also a requirement of the most commonly used EU directive called The Council Directive 91/676/EEC, which concerns the protection of waters against pollution caused by nitrates from agricultural sources (i.e., the Nitrates Directive). Other water-related problems are associated with sources of phosphorus in surface waters, as these accelerate eutrophication. An indirect, but significant threat to water is erosion. The transfer of soil into surface waters causes the transmission of not only nutrients (such as N, P), but also of other protective substances and heavy metals that can be found in artificial fertilizers. Agriculture contributes to the pollution of both surface and groundwater bodies. The sources of agricultural pollution can be divided into area and point sources. An example of an area source is agricultural land with a slope, from which water runs during intense rainfall. This water contains everything used for the cultivation of the crops that are grown in the area - this may include fertilizers or components of plant protection products. Another possibility is water outflow from meadows and pastures, which contains animal excrements as well as any residues of medication given to the animals.

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Point sources are not limited to centers of animal breeding (any kind from poultry to cattle), they can also be processing centers for crop or livestock production, or even repair and maintenance centers for agricultural machinery. Other source types are silage or haylage storage facilities, as well as field fertilizer sites that are located outside of agricultural centers.

The legislation in Slovakia makes it compulsory to build or use measures to prevent the above-mentioned types of pollution. Their enforcement, however, is difficult and costly, especially for farmers who need to ensure the prevention. A national network of monitoring stations has been set up to detect violations that have a subsequent impact on water quality. The operating expenses of such stations are fairly high. Because the monitoring stations can only detect pollution once it is already present in surface or groundwater, they cannot prevent it. What the network can prevent is the subsequent spread of pollution.

National legislation adopts the requirements of EU legislation to full extent. In fact, some national legislation requirements are stricter than those in the EU legislation, due to the fact that stricter limits were enforced in Slovak legislation before the country joined the EU.

The issue with national legislation is claiming and enforcing the necessary in practice. In accordance with the requirements of the Water Framework Directive, Slovakia should have achieved a minimum status of good for its waterbodies by 2015 or 2022, at latest. Despite being anchored in legislation, the requirement has yet to be fulfilled in practice, which is also the case in many other EU countries. The biggest barriers are encountered in the area of hydromorphological quality of waterbodies. Due to their high cost, transverse obstructions that form migration barriers for aquatic organisms are not being removed fast enough.

Another issue is that Slovakia has a very low share of population connected to public sewerage and, consequently, to wastewater treatment in comparison to other countries.
Water quality control is subject to several levels of direct control. Essentially, monitoring the quality of water is the responsibility of the Slovak Hydrometeorological Institute, which reports directly to the Ministry of Environment.

Some of the monitoring sites as well as the quality monitoring itself is managed by the Water Research Institute, which has a national monitoring laboratory. The results from the national laboratory are sent as an official report for the purpose of assessing

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requirements of the European Union directives. The administrator of surface waters in Slovakia also maintains a separate monitoring system called the Slovak Water Management Enterprise Banská Štiavnica. It is a state-owned enterprise that grants permits for the discharge of used waters into rivers and subsequently monitors the impact of these discharged waters on the rivers' water status. Examples include discharges from wastewater treatment plants in cities and towns. The process of water discharging is subject to specific fees set according to the associated level of pollution.

The results from the monitoring are not directly available to the Slovak citizens, however, the Ministry of Environment has a national report on the state of environment that annually analyzes the past year. The report is published through the Slovak Environment Agency and includes a chapter on the quality and quantity of territorial water.[231]

Special regulations in agriculture are contained within advocacy for the nitrates directive. In Slovakia, as in other EU countries, we have designated Vulnerable Zones – areas of municipal cadasters with a significant share of agricultural land. These areas have regulations concerning the permitted amount of fertilizers containing nitrogen (N). Similar regulations concerning limitations of phosphorus are not currently present in Slovakia or in the EU. Indirect regulation of water pollution is addressed by a recent amendment to the law about fertilizers where the conditions for soil erosion and the need for anti-erosion measures are demonstrated

The historical foundation of water protection derives from the Austro-Hungarian Empire's legislation, where the Reich Act 93/1869 r.z. was issued in 1869 specifying water law as a particular legislation. Subsequently, the territory of Slovakia was outlined by the Ugrian Water Act XXIII/1885, later supplemented by Act XVIII/1913, also known as the Ugrian Water Act. Because it was originally issued in Hungarian language, the water management association of the Danube river basin decided to translate all valid Ugrian regulations, decrees, and ordinances. They were published in a collection called Water law in Slovakia in 1936. In addition to the Water Act, the

[231] Reports can be found on Enviroportal's website, specifically at <https://www.enviroportal.sk/spravy/kat21>. Publicly available information regarding a more detailed overview of surface water quality is available on the website of SHMU in Bratislava at <https://www.shmu.sk/sk/?%20page=1776>. Similarly, more detailed information on the status of groundwater quality is available on the same website on the following link: <https://www.shmu.sk/sk/?page=949>.

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collection also contains 98 other regulations and ordinances “the knowledge of which is necessary for implementation of the water law”.

After 1955, several variations of the act have been introduced, reflecting the needs of the state in the water management field, but diminishing emphasis on the aspect of quality. The primary concern was sufficient supply of water for industrial purposes and agriculture, while the quality requirements were not an outstanding concern. Presently, it is the Water Act (Act No 364/2004 Coll.) that outlines the terminology, explaining that water pollution is the direct or indirect introduction of substances or heat into air, water or soil as a result of human activity, which may be harmful to human health, to the quality of aquatic ecosystems or to terrestrial ecosystems that are directly dependent on aquatic ecosystems, and which results in damage to material property, damage to or impairment of the aesthetic values of the environment and its other legitimate uses.

The significance of water endangerment is determined in a similar manner. According to the law, it is such handling of waste waters, special waters or hazardous substances, that may result in the deterioration of the water status. In terms of water protection, its content and scope in Slovakia is defined in the latest version of the Danube and Vistula River Basin Management Plan. The plan addresses the issue of water pollution separately for surface water and groundwater. The scope of water protection in Slovakia does not distinguish between water protection in rural and urban areas, nor in forest or other environments.

Water protection is unified because the water flows continuously throughout all of these types of landscapes, alternating between rural landscapes and urban areas or forested environments. The same is true for water, soil and air protection. Similarly to the EU legislation, the national legislation in Slovakia has a section dedicated to the protection of nature and consequently, its other elements as well. Contrarily to the EU, Slovakia has a very strict soil protection legislation. The stricter aspects include, for example, the use of sewage sludge or bottom sediments on agricultural land to ensure groundwater protection from contamination by hazardous substances. Council Directive 86/278/EEC from June 12th, 1986 on the protection of the environment and in particular of the soil during the usage of sewage sludge in agriculture, has the following in its preamble: “ (...) because sludges from small sewage treatment plants, which treat mainly domestic waste water, pose little danger to human, animal, plant or environmental health, they should be exempt from certain specified information

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obligations. Following, the preamble states that sludges may have valuable agricultural properties, for which their promotion of use in agriculture is fully justified, given proper employment; because the use of sewage sludges must not impair the quality of the soil and of the agricultural products".

The direct application of sewage sludges into land is nearly impossible in our country. In our strategies, we see soil as the natural carbon and water bank of the country and its watersheds Therefore, soil and water conservation are closely intertwined.

Slovak law provides specific sanctions for water protection. They cover damaging the quality or quantity of water are established in several legislation bills. The basis for dealing with sanctions is instituted in the Criminal Code – Act No 300/2005 Coll. of Criminal Law, which directly renders the requirements of Directive 2008/99/EC of the European Parliament and of the Council from November 19th, 2008 on the protection of the environment through criminal law. Criminal offences against the environment pertain to sections § 300 to 310 of the Act. Endangering and damaging the environment is the subject of section § 300. Anyone who intentionally puts the environment in danger of serious harm by violating the regulations on environmental protection or on the management of natural resources (environmental endangerment) shall be punished According to another Article, anyone who causes environmental endangerment, even out of negligence, will be punished Violations of water and air protection are contained in § 303. It is considered a criminal offence if someone acts in contradiction to the generally binding legislation on water and air protection and if by doing so, causes deterioration to the quality of surface water, groundwater or air in a manner that causes damage on a significant or large scale.

Regulatory offences are contained in § 74 of the Water Act. The state water administration authority shall impose a fine on an entity or a person-entrepreneur, who withdraws surface water or groundwater without a permit from the state water administration authority or if it's done so in a violation of such permit. Another instance of law violation is the pollution or endangerment of surface water or groundwater by defying the obligations instituted in § 39 – the handling of pollutants. Approximately 20 more reasons can be found that are in violation of water protection and should be apprehended.

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The polluter pay principle is addressed in Slovak legislation bills which discuss environmental protection. Payments for water pollution are dealt with in Act 364/2004 Coll. – The Water Act. The twelfth part of the Act is entitled Charging for the use of water. Following, section 79 is called Charges for the use of water. These parts contain cases where payments are needed in exchange for water pumping or its pollution.

What is not yet charged for, according to the Slovak requirements, is pollution by diffusion of nutrients and pesticides in agriculture. These are payments made by the polluter for water pollution in the form of an environmental tax. Because their consumption in Slovakia is relatively low compared to the EU numbers (as confirmed by EUROSTAT data), an environmental tax on fertilizers (particularly of nitrogen kind) and pesticides has not yet been introduced here. Another case of charges for water pollution by diffusion are ones for indirect discharges of waste water, which also considers nutrient drainage from agricultural land into surface and groundwaters. This form of charges is not yet applied in EU's current water pricing policy.

Control is a twofold aspect. Generally, it is a matter for the national monitoring network. Both surface and groundwater are monitored based on their significance up to several times a year. On important streams it can be 12 or 24 samples for monitoring per year.

In the event of an accident that might threaten a stream, a separate organization is established in Slovakia, called The Slovak Inspectorate of the Environment, which deals with these accidents and other significant threats to surface or groundwater.

The protection of waters against agricultural pollution in the EU is addressed in the Council Directive of December 12th, 1991, addressing the protection of waters against pollution caused by agricultural nitrate sources (91/676/EEC). Member States are required to establish action programmes to enforce the directive in practice.

The Nitrates Directive demands 3 main obligations in its implementation, such as: 1) to define vulnerable areas of threat to water resources, 2) to develop and publish a Code of fair agricultural practice, and 3) to develop and publish the management conditions in the vulnerable areas. All of the Directive's requirements were met. The farming management conditions in vulnerable areas are a part of the renewed act on fertilizers No 136/2000 Coll. in amendment No 394/2015.

The vulnerable areas in Slovakia have been selected through the Government Regulation No 617/2004 Coll. Farming entities operating in the specified vulnerable

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areas are obligated to respect given farming management principles. For ease of use, the National Agricultural and Food Centre's application allows each user of land to find not only the indicator of soil quality, but also the classification of the land unit within the vulnerable areas, in addition to the degree of management restrictions.[232]

5. ORGANIC FARMING (*Izabela Hasińska*)

The term agriculture itself is usually identified with the production of agricultural crops and animal husbandry. In the opinion of some authors, conventional agriculture is a great burden on the environment associated with the pollution of soils and groundwater with mineral fertilizers, plant protection products.[233] Currently the term is strongly differentiated and in many respects.[234] Agricultural areas are not only used to carry out production, but are also agrocenoses, i.e. a place of intermingling of areas transformed by man with elements of wild flora and fauna. The proper formation of such areas and their natural resources, as well as their sustainable development, are closely related to organic farming, a method of farming that is beneficial to both climate protection and biodiversity.[235] Organic farming requires different qualifications and methods from the farmer than in the case of conventional farming. However, public interest in agricultural production in accordance with the criteria of organic farming is steadily growing.

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[232] In particular, it can be found in their Soil protection research institute section on this link: <https://portal.vupop.sk/portal/apps/webappviewer/index.html?id=75d6cf2d953f42bc9e36050b9e3f7035>.

[233] See more: Holger Rogall, *Economics of Sustainable Development. Theory and practice* (Zysk i S-ka 2010) according to which the reckless use of min. mineral fertilizers and plant protection products contributes to the extinction of many species of fauna and flora and has a large share in greenhouse gas emissions.

[234] Three farming systems can be distinguished in agriculture, namely conventional, organic and integrated agriculture. These systems are distinguished by the degree of dependence of agriculture on industrial means of production and the ability to achieve sustainable development goals. In the organic farming system, the implementation of ecological and ethical goals is a priority. Conventional agriculture, on the other hand, focuses primarily on economic effects. On the other hand, integrated agriculture does not resign from industrial means of production, but uses them in a moderate way, trying to combine efficiency with the principles of ecology. This results in dilemmas of owners and users of farms related to the choice of farming method. From the consumer's point of view, the market should be dominated by organic food, produced without the addition of artificial fertilizers and without pesticides, see in more detail Jan Kuś, Jarosław Stalenga, J.'Prospects for the development of various agricultural production systems in Poland' (2006) No 242 *Bulletin of the Plant Breeding and Acclimatization Institute*; Henryk Runowski, 'Organic farming – development or regress?' (2009) Series G, Vol 9, issue 4 *Annals of Agricultural Sciences.*

[235] Tomasz Motyka, *Organic Agriculture of the Agri-Environmental Programme 2007-2013* (Ministry of Agriculture and Rural Development 2010).

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In the conventional view, organic farming is defined as the cultivation of crops to the exclusion of synthetic fertilizers and pesticides. By contrast, according to a broader definition, it is a system of farming that relies primarily on the use of the natural qualities of the habitat and the use of a closed organic cycle on the farm. According to the International Federation of Organic Agriculture[236], organic farming is a system of production that sustains the health of soils, ecosystems and people. This system serves to preserve a high degree of biodiversity and ensure the continued fertility and fertility of the soil, as well as conserve natural resources. In addition, the priority tenets of organic agriculture include high standards of animal welfare and crop production, meeting consumer demand for products produced using natural means and processes. Thus, organic farming brings diverse benefits that are part of the concept of sustainable development, namely: economic-social, environmental, health, ethical-aesthetic. Organic farming also produces fewer greenhouse gas emissions than conventional agriculture. In recent years, the organic farming sector in the Union has seen both dynamic growth in terms of the area used for organic farming and the number of farms and the total number of organic operators registered in the Union.

The organic farming system itself is characterized by duality. On the one hand, it has a positive impact on the environment, contributing to the widely understood agri-environmental benefits, and on the other hand, it is a response to the changing structure of market demand.[237] Undoubtedly, one of the most important goals of organic farming is the production of safe, high-quality food. The number of farms interested in organic production is systematically increasing. This is because the agricultural products from organic production are a guarantee of safe food, and at the same time organic production promotes the preservation of the natural environment.

Organic food gives consumers the opportunity to eat healthily, to provide their bodies with high-quality food, containing only natural ingredients and devoid of any

[236] The International Federation of Organic Agriculture (IFOAM) plays an important role in creating the legislative framework for organic farming. The federation was formally established as a regional group within IFOAM in February 2000 and replaced the EU working group established in 1990. In turn, in 2002, the EU group IFOAM was registered in Sweden as an international non-profit organization. It is the first institution that has established international rules for organic farming, objectives and frameworks for its operation, which until now have been a reference for national legal regulations.

[237] Dorota Krupa, Agnieszka Żołądkiewicz, 'Supporting entrepreneurship in agriculture on the example of organic agricultural producers' (2014) No 111 *Economic Problems of Services* 134-142.

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additives that can be harmful to health. Conducting organic production has become a factor in the development of the modern enterprise.[238] The pro-environmental attitude is particularly evident in relation to the food industry. Measures indicating the company's commitment to improving the quality of the environment and meeting the ecological requirements of the consumer are implemented at every stage of the product life cycle. However, consumers need to be assured that producers are applying regulations for organic production. Accordingly, the European Union has introduced and maintains a rigorous system of inspection and enforcement to safeguard the proper application of organic production rules and regulations.

The objectives of the EU organic production policy are aligned with the requirements for organic farming. Thus, the legal framework established for the implementation of this policy should serve to ensure fair competition and the proper functioning of the internal market for organic products, maintain and justify consumer confidence in products labeled as organic, and should aim to create such conditions in which the policy can be shaped in accordance with production and market trends.

5.1 ORGANIC FARMING IN EUROPEAN UNION LAW (*Mariagrazia Alabrese and Eloisa Cristiani*)

Organic farming was regulated by voluntary international standards long before the European legislator introduced the first legal discipline.[239] The EU intervened for the first time with the Regulation No 2092/91[240] aiming at regulating the organic production method. This discipline outlined a harmonised regulatory framework for the production, labeling and control of products characterized by the use of cultivation techniques aimed at eliminating the deployment of fertilizers and pesticides deriving from chemical synthesis. The scope of the legislation initially concerned only unprocessed vegetable

[238] Władysława Łuczka-Bakuła, *Market of organic food* (Polish Economic Publishing House 2007) 76.

[239] The International Federation of Organic Agriculture Movements (IFOAM) introducing international standards dates back to 1972. See: Bernward Geier, *IFOAM and the history of the international Organic Movements,* in W. Lockeretz (ed), *Organic farming: an international history* (Wallingford 2007) 175.

[240] Council Regulation (EEC) No 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs. See: Eloisa Cristiani, 'I Prodotti Dell'agricoltura Biologica' in P.Borghi and others (eds), Trattato Di Diritto Alimentare Italiano e dell'Unione Europea (Giuffrè 2021) 454; Irene Canfora, L'agricoltura Biologica Nel Sistema Agroalimentare. Profili Giuridici (Cacucci Editore 2002); Eloisa Cristiani, La Disciplina Dell'agricoltura Biologica Fra Tutela Dell'ambiente e Sicurezza Alimentare (Giappichelli 2004).

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products and foodstuffs composed essentially of vegetable ingredients. Only with the Regulation No 1804/99, of 19 July 1999, applicable from August 24, 2000, the discipline was extended to animal products.[241]

It is also worth mentioning that the regulations disciplined the method of production and did not refer to the products. The rules relating to the labeling of the organic production method aimed to guarantee the consumers about the production methodology applied in the breeding of animals and cultivation of plants rather than to the product obtained This is made clear in the Article 10.2, of the Regulation 2092/91, according to which «No claim may be made on the label or advertising material that suggests to the purchaser that the indication shown in Annex V [i.e. 'organic farming'] constitutes a guarantee of superior organoleptic, nutritional or salubrious quality.» In fact, the guarantee does not pass down from the process to the product.

This legislation was replaced by Regulation 834/2007,[242] complemented for the implementation by Regulation 889/2008.[243] According to this discipline, organic production is deemed to be "an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards and a production method in line with the preference of certain consumers for products produced using natural substances and processes. The organic production method thus plays a dual societal role, where it on the one hand provides for a specific market responding to a consumer demand for organic products, and on the other hand delivers public goods contributing to the protection of the environment and animal welfare, as well as to rural development."[244]

[241] Council Regulation (EC) No 1804/1999 of 19 July 1999 supplementing Regulation (EEC) No 2092/91 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs to include livestock production.

[242] Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91.

[243] Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control.

[244] Council Regulation (EC) No 834/2007, recital 1.

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As of 1 January 2022, the EU legal framework for organic production is provided by Regulation 2018/848.[245] Its application date was postponed by one year by Regulation 2020/1693 because of the COVID-19 pandemic and the related public health crisis.[246] This new regulation significantly broadens the scope of the EU's legislation on the production and labelling of organic products to also cover products closely linked to agriculture, such as cork, salt, essential oils, cotton and wool.[247] It also reviews the livestock organic production rules and introduces rules for new species, such as rabbits. There is a sector to which the new Regulation does not apply, which is the field of mass catering operations. According to recital No 14, because of the local nature of mass catering operations, measures taken by Member States and private schemes in this area are considered adequate to ensure the functioning of the single market. This means that food prepared by mass caterers should not be labelled or advertised with the organic production logo of the European Union.[248]

A key point of the Regulation 2018/848 is related to the harmonization of the rules applicable to organic operators in the EU Member States and non-EU countries through the introduction of a compliance system. This is aimed on the one side to respond to consumer expectations that imported organic products meet standards as high as those of the Union; on the other side, to ensure the access of Union organic products to the international market. Indeed, a product may be imported from a non-EU country to be sold in the EU as an organic product if complies with the production and control rules of the non-EU country, which are recognised under an international agreement as being equivalent to those in the EU; and if it brings a certificate issued by the relevant control authorities or control bodies in non-EU countries confirming that the product complies with EU standards.[249]

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[245] Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007. See: Nicola Lucifero, 'Il Regolamento (UE) 2018/848 Sulla Produzione Biologica. Principi e Regole Del Nuovo Regime Nel Sistema Del Diritto Agroalimentare Europeo (Regulation (EU) 2018/848 on Organic Production. Principles and Rules of the New Regime in the European Agri-Food La' (2018) 3 *Rivista di diritto agrario* 477, 447.

[246] Regulation (EU) 2020/1693 of the European Parliament and of the Council of 11 November 2020 amending Regulation (EU) 2018/848 on organic production and labelling of organic products as regards its date of application and certain other dates referred to in that Regulation.

[247] See: Annex 1 to the Regulation (EU) 2018/848.

[248] See: also Article 2, paragraph 3.

[249] See: Chapter VII of the Regulation (EU) 2018/848.

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The second key aspect of the new discipline is related to small farmers. The Regulation 2018/848 simplifies access to the scheme of organic farming for small operators in so far as it introduces a new system of group certification for small farmers. A system of group certification may reflect better the needs and resource constraints of small farmers that individually may find inspection costs and administrative burdens linked to organic certification too high.[250] The possibility to rely on group certification may stimulate them to switch to organic farming.[251]

Organic production forms part of the Union's agricultural product quality schemes, together with geographical indications and traditional specialities recognized under Regulation (EU) No 1151/2012 of the European Parliament and of the Council.[252] This is due to the link which is made clear by the legislation between the method of production adopted under the organic certification and the quality of the product. Indeed, the observance of high standards for health, the environment and animal welfare in the production of organic products is deemed to be intrinsic to the high quality of those products. Of course, organic production is also considered as a model of sustainable agriculture.[253] The importance of the environmental issues is at the forefront of the discipline at stake. According to recital No 5 of the Regulation 2018/848, organic farming contributes to the achievement of the objectives of the Union's environmental policy, and to the environmental legislation.[254]

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[250] See: Luca Petrelli, 'La Certificazione Di Gruppo: Una Nuova Opportunità per i Piccoli Produttori Biologici Europei?' (2015) 2 Rivista di Diritto Alimentare 50.

[251] Articles 35 and 36 of the Regulation (EU) 2018/848. See: Luca Petrelli, 'La Certificazione Di Gruppo: Una Nuova Opportunità per i Piccoli Produttori Biologici Europei?' in VV.AA. (ed), I diritti della terra e del mercato agroalimentare. Liber Amicorum Alberto Germanò vol II (2016).

[252] Regulation (EU) No 1151/2012 of the European Parliament and of the Council of 21 November 2012 on quality schemes for agricultural products and foodstuffs.

[253] On sustainable agriculture, see Terry Gips, 'What Is a Sustainable Agriculture?' in Patricia Allen and Debra Van Dusen (eds), Global Perspectives on Agroecology and Sustainable Agricultural Systems (Proceedings of the Sixth International Conference of the International Federation of Organic Agriculture Movements 1988) (1988). Olaf Christen, 'Sustainable Agriculture: History, Concept and Consequences for Research, Education and Extension' (1996) 741 Berichte Uber Landwirtschaft. Eric Lichtfouse et al (eds), Sustainable Agriculture (Springer 2009).

[254] Such as Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy; Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants; Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides; Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds; Council Directive 91/676/EEC of 12 December 1991 concerning the

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In fact, organic production should comply with many environmental requirements, such as respecting natural systems and cycles; maintaining and improving the state of the soil, water and air, and plant and animal health, and the balance between them; preserving the natural landscapes; using energy and natural resources responsibly; excluding the use of genetically modified organisms (GMOs) and products produced from or by GMOs, as well as excluding animal cloning.

These objectives can be met by respecting biodiversity and using seeds and animals with a high degree of genetic diversity, disease resistance and longevity, or choosing plant varieties and animal breeds that take into account the characteristics of specific organic production systems. Moreover, to avoid adverse effects on the environment, producers are required to take preventive measures at each stage of production, preparation and distribution to prevent the occurrence of pests and diseases, as well as to take proportionate and precautionary measures to avoid contamination with products or substances not authorised for use in organic production.

As far as labelling is concerned, Regulation 2018/848 completements the general rules laid down in Regulation No 1169/2011.[255] Thus, specific provisions aimed at protecting both the interests of operators in having their products correctly identified on the market and in enjoying conditions of fair competition, and the interests of consumers in being able to make informed choices. In order to protect organic farmers and increase consumer trust, the terms (and their derivatives and diminutives, such as 'bio' and 'eco') suggesting to the purchaser that the product, ingredients or feed materials have been produced in accordance with the Regulation 2018/848, shall not be used anywhere in the Union, in any language, for the labelling, advertising material or commercial documents of a product which does not comply with such Regulation. Moreover, a product for which Union law requires the labelling or advertising to state that the product contains GMOs, consists of GMOs or is produced from GMOs cannot

protection of waters against pollution caused by nitrates from agricultural sources; Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. On organic farming and the environment, *inter alia*, Paola Migliorini-Alexander Wezel, 'Converging and Diverging Principles and Practices of Organic Agriculture Regulations and Agroecology' (2017) Agronomy for Sustainable Development.

[255] Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers.

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be labelled using the organic production logo.[256] The logo can be used for products which contain only, or almost only, organic ingredients. It is therefore not allowed to use it in the labelling of in-conversion products or processed products of which less than 95% by weight of their ingredients of agricultural origin are organic.[257]

At the international level, in 2005 the Codex Committee on Food Labelling developed the Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods. This work by the Codex Alimentarius Commission shows the relevance of production and international trade in organically produced foods.[258]

One of main goal of the EU legislator with the adoption of Regulation 2018/848 is to make a strong connection of the discipline related to organic farming with other European policies, such as the Common Agricultural Policy. This emerges from the recitals No 3 and 4 of the Regulation that stresses how organic production is a system that contributes to the integration of environmental protection requirements into the CAP and that promotes sustainable agricultural production. This is the reason why measures that support organic production financially have been introduced under the CAP. In particular, the objectives of the organic production policy are embedded in the objectives of the CAP by ensuring that farmers receive a fair return for complying with the organic production rules.

The organic farming sector in the Union has developed rapidly in the past years, in terms not only of the area used for organic farming but also of the number of holdings and the overall number of organic operators registered in the Union. These numbers are destined to increase in the next years due to the attention given to organic farming under the European Green Deal[259] and the subsequent strategies, in particular the Biodiversity Strategy[260] and the Farm to Fork Strategy.[261] These strategies aim to reconcile food

[256] Irene Canfora, 'Ogm e Agricoltura Biologica' (2006) 3 Agricoltura Istituzioni Mercati 427; Eleonora Sirsi, 'A Proposito Degli Alimenti Ogm (Note Sulle Regole Di Etichettatura Di Alimenti e Mangimi Costituiti, Contenenti e Derivati Da OGM Con Particolare Riferimento All'etichettatura Negativa)' (2005) 1 *Rivista di diritto agrario* 30.

[257] Chapter IV, Article 30 of the Regulation (EU) 2018/848.

[258] Elisa Morgera, Carmen Bullòn Caro, Gracia Marìn Duràn, Organic agriculture and the law, (2018) No 107 *FAO Legislative Study*.

[259] EU Commission, The European Green Deal - COM(2019) 640 final 2019.

[260] EU Commission, 'EU Biodiversity Strategy for 2030. Bringing Nature Back into Our Lives - COM(2020) 380 Final' (2020).

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production with environmental protection while spurring investment and sustainable production, an objective that the Commission will seek to promote within the context of the Sustainable Development Goals.[262]

In its Farm to Fork Strategy and the Biodiversity Strategy, the EU has introduced the ambitious objective of "at least 25% of the EU's agricultural land under organic farming and a significant increase in organic aquaculture by 2030". After the Commission defined this goal, the other EU Institutions endorsed the initiative: in its resolution of 15 January 2020 on the European Green Deal, the European Parliament highlighted that organic farming is a sustainable practice that has the potential to help the EU reduce its carbon emissions.[263] In the same fashion, soon after the Parliament, the Council, in its conclusions of 19 October 2020 on the Farm to Fork strategy, emphasized the role of organic production in a sustainable food system.[264]

Regulation 2018/848 was issued before these new documents and strategies were conceived Thus, for aligning the EU organic production to the new objectives, the Commission set forth an action plan for organic farming concerning the 2021-2027 timeframe.[265] Taking into consideration that in a business-as-usual scenario, the share of organic agriculture should reach between 15% and 18% of agricultural land by 2030, the action plan aims to encourage an increase of the share of organic farming in the EU, through encouraging farmers to convert to organic farming, also by boosting education and training opportunities. Indeed, an "extra effort" is necessary to reach a 25% target by 2030.

Among the actions suggested by the action plan, there is the integration of organic products into school meals and workplace canteens through public procurement, into

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[261] EU Commission, 'A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System - COM(2020) 381 Final' (2020).

[262] Pamela Lattanzi, 'Il 'New Green Deal', La Pac 2021-2027 e La Sostenibilità Nelle Produzioni Alimentari' in P Borghi and others (eds), *Trattato di diritto alimentare italiano e dell'Unione europea* (Giuffrè 2021) 705.

[263] European Parliament resolution of 15 January 2020 on the European Green Deal <https://www.europarl.europa.eu/doceo/document/TA-9-2020-0005_EN.html>.

[264] Council conclusions on the Farm to Fork strategy: <https://www.consilium.europa.eu/media/46419/st12099-en20.pdf>.

[265] EU Commission, 'An action plan for the development of organic production' - COM(2021)141' (2021). See: Giulio Sgarbanti, 'Il Piano Di Azione Europeo per l'alimentazione e l'agricoltura Biologica', Il nuovo diritto agrario comunitario. Atti del Convegno di Ferrara-Rovigo 19/20 Novembre 2004 (2005).

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the hospitality sector through incentives and visibility, into supermarkets through promotion campaigns. In order to promote organic products into everyday home cooking, the Commission acknowledges the need to address the issue of economic affordability of organic food, and to increase access to organic food for low-income families.

The action plan interestingly highlights that organic farming is a sustainable farming system and – at the moment – it is the only system which has been recognised by a robust certification method. This makes it clear that at the European Union level we have only one formal certification that can be placed under the umbrella concept of sustainable agriculture.

The action plan is organised along three axes that follow the structure of the food supply chain (production, processing, and retailers and consumers). Axis 1 is referred to the final part of the food chain and aims to stimulating demand and ensuring consumer trust in the EU organic logo.[266] With this purpose, this axis proposes measures finalized to increase the awareness of the benefits of organic farming for the environment and also for people's health. Under this axis, the Commission includes the action related to promoting organic canteens and increasing the use of green public procurement, specifying also that in the implementation of such procurement procedures, special attention should be paid to small farms, micro-enterprises and SMEs.[267]

Moreover, axis 1 suggests that, in line with the Farm to Fork strategy, Member States should prioritise the distribution of organic products under the EU school scheme. Indeed, the EU school schemes are a good tool for supporting the distribution of fruit, vegetables, milk and milk products to children. Combined with educational activities, school schemes can also reach the objective of reconnecting children with agriculture and teaching healthy eating habits, thereby encouraging a healthy diet and sustaining the short- and long-term consumption of the products under the scheme. To increase the consume of organic producing, the EU has also considered the need for improving trust

[266] According to a Eurobarometer on this subject <https://europa.eu/eurobarometer/surveys/detail/2665>, published in June 2022, 61% of consumers in the EU recognise the EU organic logo.

[267] In October 2019, the Commission issued new EU GPP criteria for food, catering services and vending machines (SWD(2019) 366 final – EU green public procurement criteria for food, catering and vending machines). See: A Boyano Larriba and others, EU GPP Criteria for Food Procurement, Catering Services and Vending Machines (Publications Office of the European Union 2019).

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of consumers and, in this regard, to trace products from the fork back to the farm, even by using digital technologies and digital passports. Artificial intelligence, blockchain and similar technologies can help strengthen organic certification, in particular by ensuring transparency along the supply chain and the traceability of products contributing to consumer trust. Control bodies play a fundamental role in this field. The European legislator has provided a detailed regulation on the controls but, since the very first regulation 2092/1991, left the Member States free to designate the authorities responsible for the system of controls, regulating the possibility of conferring control tasks also to accredited private bodies that possess the necessary equipment and infrastructure and provide the guarantees of competence and impartiality identified by the European legal framework.

Axis 2 of the European action plan for organic farming is aimed at stimulating conversion of agricultural land to organic farming. The CAP remains a key tool for supporting the conversion. The CAP 2023-27 includes eco-schemes that can be deployed to boost organic farming. Measures to boost organic farming can also help the EU reduce its dependency on synthetic inputs. However, assessments by IFOAM Organics Europe found that the ambition of draft CAP Strategic Plans fell short of the Green Deal's 25% organic land target: achieving this target requires tripling the organic land area between 2019 and 2030,[268] while national measures and budgets to support organic farming are insufficient to significantly develop organic land in many countries.[269]

A stronger criticism of the way in which the CAP, and in particular Member States, with their Strategic Plans are promoting organic farming comes from a review of 17 final National Strategic Plans published in December 2022.[270] This report highlights that several countries included the area of organic eco-schemes under indicator K.31 of the CAP related to preserving habitats and species. The analysis stated that "Organic farming has been shown to be beneficial for biodiversity, with studies showing that species richness on organic farms is higher than in conventional farming systems.

[268] IFOAM, Prospects & Developments for Organic Farming in National CAP Strategic Plans (2021).

[269] IFOAM, The Ambition Gap. Assessing organic farming support measures in current draft national CAP Strategic Plans for the Common Agricultural Policy 2023-2027, 2021.

[270] Birdlife International, EEB, New CAP unpacked … and unfit, 2022 <https://www.birdlife.org/wp-content/uploads/2022/12/New_CAP_Unpackedpdf>.

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However, the benefits of organic farming systems for biodiversity stem from a number of factors, including reduced management intensity and heterogeneity of the whole system – not required by the certification of organic production that is largely restricted to banning synthetic agrochemicals. Including large areas under this indicator can be extremely misleading. Organic farming can support in some Member States extensive and biodiversity friendly systems in broad terms, but it does not include any provisions on improving the status of habitats and species and does not address key factors driving biodiversity loss neither on grasslands nor on arable land (e.g. grass harvest frequency and dates, semi-natural spaces, plot size). Including organic under indicator R.31 is therefore very problematic as it significantly inflates the sup- posed ambition without genuine action supporting biodiversity conservation and restoration".[271]

Moreover, axis 2 contains an important action which stresses the relevance of data analysis for shaping, monitoring and evaluating EU policy on organic production. Consequently, the axis has the development of data analysis, in particular on production, prices, trade and consumer preferences, amongst its objectives. In this regard, the Commission commits to publish regular reports on organic production in the EU and a yearly report on imports of organic products from third countries.

A further instrument that is to put in place under axis 2 is critical in the pathway towards sustainability and the reduction of climate change impact of the agri-food sector. It is related to the reinforcement of local and small processing factories of organic production for minimizing food mileage while ensuring organic farmers an outlet for their production and benefit from the added value of the processed food.

In line with the consideration of the organic farming as a key sector for realizing sustainable and resilient agri-food systems, axis 3 is devoted to step up the role of organic agriculture that could lead the way to a better use of natural resources. Regulation 2018/848 on organic production introduces specific objectives and related principles to protect biodiversity, which will strengthen the role of organic farmers as promoters of biodiversity preservation. However, the issue of lower yield compared with conventional crops is acknowledged by the action plan, according to which the Commission is tasked to take steps towards the final objective of enhancing biodiversity

[271] Birdlife International, *cit.*, 33.

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and increasing yields. In this regard, research and innovation are central, as well as the farm advisory services, notably the Agricultural Knowledge and Innovation System (AKIS) that is receiving greater attention under the CAP 2022-27.

The contribution of organic farming to more sustainable food systems, however, could be watered down by using agricultural inputs, such as plant protection products having a lower impact on the environment and on the soil. Indeed, the legislation authorises certain substances, such as copper, which are harmful for soil and fauna, and once leaked into ground waters, can also have a negative impact on waters. In this regard, it is stressed the need for introducing and incentivizing the use of alternative plant protection products, such as those containing biological active substances. A great deal of attention is devoted to the pollution of both fresh waters and marine waters, which are currently under pressure due to pollution from nutrients, such as nitrogen and phosphorus, and pesticides. The extension of organic farming in the EU can contribute significantly also to the pesticide reduction target and the target on the reduction of the nutrients surplus.

5.2 ORGANIC FARMING IN DOMESTIC LAW

Italy (Alabrese Mariagrazia and Eloisa Cristiani)

Italian agriculture has always shown great interest in organic farming. The number of operators in the field of organic producing exceeded 86,000 units in 2021, with 2.2 million hectares of organically grown land.[272] Italy ranks among the first organic producing countries in Europe.

These figures place Italy at a favourable starting point for the achievement of the ambitious target set down by the EU Farm to Fork Strategy,[273] which requires a significant increase (up to 25%) in European organic farming by 2030.

The Italian legal framework for organic agriculture was updated after the adoption by the European Union of Regulation EU 848/2018. Currently the sector is regulated by

[272] CREA, Annuario dell'Agricoltura Italiana 2021 <https://www.crea.gov.it/documents/68457/0/Annuario_CREA_2021_Volume_LXXV.pdf/49fc57e1-a325-50f4-22bb-d044d0f24dbe?t=1671527592245>.

[273] EU Commission, 'A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System – COM(2020) 381 Final' (2020).

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the Italian Law No 23/2022,[274] which was followed by Decree 229771 of 20 May 2022 adopted by the Italian Ministry of agriculture for implementing the EU Regulation 848/2018.[275]

According to the current Italian relevant discipline, organic production is deemed to be a comprehensive management system for farm and food production, based on the interaction between best environmental practices for conservation of natural resources and climate action. By applying strict production standards, such a system contributes to quality of products, food safety, rural development, environmental protection, preservation of biodiversity and reduction of greenhouse gas emissions,[276] contributing to the achievement of the objectives of the 2030 Agenda for Sustainable Development. [277] Thus, the Italian law acknowledges the unique role of organic production for social development and environmental sustainability.

This broad definition of organic farming was amended before the adoption of the Law No 23/2022, because its previous version raised a public debate which resounded at the international level.[278] A draft version[279] of the law granted legal recognition and, consequently also public funding, to biodynamic agriculture, a farming practice which scientists that questioned this choice considered as lacking scientific basis. The original Article 1 of the Law, before its amendment during the legislative process, equated the biodynamic farming method to organic farming. But "while organic farming is precisely regulated by European standards, biodynamic agriculture has theoretical foundations and agricultural practices based on mystical and spiritual beliefs described a century ago by the founder of anthroposophy, the German philosopher, Rudolf Steiner.

[274] Legge 9 marzo 2022, No 23 – Disposizioni per la tutela, lo sviluppo e la competitività della produzione agricola, agro-alimentare e dell'acquacoltura con metodo biologico (GU Serie Generale 69 del 23.3.2022).

[275] Decreto recante disposizioni per l'attuazione del regolamento (UE) 2018/848 del Parlamento e del Consiglio del 30 maggio 2018 relativo alla produzione biologica e all'etichettatura dei prodotti biologici.

[276] Article 1, paragraph 2, Legge 9 marzo 2022, No 23.

[277] UN General Assembly, Transforming our world: the 2030 Agenda for Sustainable Development, 21 October 2015, A/RES/70/1.

[278] Nicola Nosengo, Scientists call for clarity on new farming law, Nature Italy, 15 June 2021, <https://www.nature.com/Articles/d43978-021-00072-z>.

[279] A first comment on the first draft id provided by Eloisa Cristiani, 'L'agricoltura Biologica Come "Attività Di Interesse Nazionale Con Funzione Sociale": Osservazioni Critiche Sulla Proposta Di Legge Nazionale in Discussione Al Senato' in A Di Lauro and G Strambi (eds), *Le funzioni sociali dell'agricoltura* (ETS 2020) 115.

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The foundations of biodynamic agriculture cannot be verified rationally, since they assume the existence of unspecified cosmic flows generating forces that would have a non-material origin. Additionally, the biodynamic certification is often awarded for a fee by private organizations".[280]

Given the pivotal role of organic production for sustainability of agriculture, its promotion is pursued also through the creation of a new label for organic Italian products. According to Article 5 of the Italian Law No 23/2022, this label is aimed to characterise the organic products obtained from Italian raw materials. This provision implements Article 33, paragraph 5 of the Regulation EU 848/2018, which states that national logos and private logos may be used in the labelling, presentation and advertising of organic products. The Italian organic label is the exclusive property of the Italian Ministry of agriculture and its use can be requested on a voluntary basis.

Since the very first EEC Regulation No 2092/91, the European legislator has chosen to lay down detailed rules on the procedures, timing and documentation by which the system of organic controls must be organised, as well as the sanctions applicable in the event of irregularities or infringements, but the EU discipline has always left to the Member States the choice of the authorities and/or bodies to be tasked with the correct functioning of the system. It is therefore up to the Member States to set up the control system and to identify one or more authorities to be entrusted with the responsibility for the controls. The authority so designated may, in turn, confer control powers on one or more other supervisory authorities or rather delegate control tasks to one or more control bodies.

In the latter case, the inspection body should be accredited under the relevant harmonised standard for conformity assessment and comply with the requirements of structure, impartiality and competence specifically listed by the European legislator. With a legislative act dated 2018,[281] in Italy the Ministry of agriculture has been appointed for managing the control system in the field of organic farming. This does not mean that the Ministerial officers carry out the controls directly, but it means that the

[280] Gennaro Ciliberto, Fiorella Lo Schiavo, Alessandro Vitale, 'A welcome revision, but organic farming law still needs work', *Nature Italy*, 15 March 2022 <https://www.nature.com/Articles/d43978-022-00035-y>.

[281] D.lgs. 23 febbraio 2018, No 20 recante «Disposizioni di armonizzazione e razionalizzazione della normativa sui controlli in materia di produzione agricola e agroalimentare biologica.

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Ministry delegates the actual performance of the control activity to private bodies "recognized" or accredited, on which the Ministry is required to exercise its supervision.[282]

The recent Italian Law No 23/2022 aims at improving the impartiality of the controls. In order to achieve this goal, it provides several principles and criteria that must be followed by subsequent regulation that should introduce: measures to ensure greater transparency and protection of competition through the definition of instruments for overcoming and resolving conflicts of interest between controllers and auditees; rules and instruments for protecting consumers by providing for the obligation to supply information on provenance, quality and traceability of organic products, including through the use of digital platforms.

The Italian Law also supports scientific research and training in organic agriculture. Article 11 provides that specific educational paths are promoted in the universities, with the possibility to activate master degrees, PhD programmes, and other training courses also devoted to teachers of secondary schools of public agricultural technical institutes. Article 12 provides that the State and the Italian regions promote theoretical and practical training for public officers responsible for carrying out the inspections, and also for technical advisors and producers, in particular for producers who decide to convert from conventional to organic production.

As for the funding of these activities, it must be highlighted that since first years of 2000, the Italian ministry for agriculture has been managing a fund for research on organic and quality farming.[283] This law will partially reform the way in which this fund is utilized Article 9 establishes the Fund for the development of organic production. Interestingly, it is financed, as it was in the past, by an annual contribution of 2% on revenues from selling fertilisers and agrochemicals used in conventional farming. This makes very much clear the preference and the most favourable treatment of organic production over conventional farming. Law No 23/2022 provides that the fund is

[282] Alberto Germanò, 'Sugli Organismi Di Controllo' (2018) 1 *Rivista di Diritto Alimentare* 66.

[283] Eloisa Cristiani, 'Il Prodotto Biologico Come Prodotto Di Qualità' in Alejandra Carretero Garcia (ed), *Agricultura transgenica y calidad alimentaria. Analisis de derecho comparado* (Ediciones de la Universidad de Castilla-La Mancha, Cuenca 2011) 559.

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destined not only for financing research programmes, but also for other purposes, such as the Italian organic label.

According to Article 7 of the Italian Law No 23/2022 a national plan for organic production and organic products is expected to be adopted by the Ministry of agriculture in a few months.[284] As of this writing, the Ministry has already launched a public consultation on a first structure of the plan which is based on three axes and very much mirrors the European plan for organic farming.[285] Article 7 provides also twelve objectives that the Italian plan is expected to pursue, such as: 1. encouraging the conversion of conventional agricultural and agri-food operators to organic farming, with particular regard to small producers; 2. supporting associative and contractual forms of organization amongst farmers to strengthen the creation of organic product chain; 3. encourage the consumption of organic products through information initiatives, training and environmental and food education, including catering; 4. monitor the trend of the sector also through the integration of data collected and disseminate these data; 5. promoting the creation of biological districts; 6. encouraging new businesses in rural mountain areas; 7. improving the control and certification system for quality assurance of organic products also through simplification of legislation, the use of IT tools and the provision of training; 8. stimulating public institutions and bodies to use organic production methods in the management of public gardens and stimulating the consumption of organic products in public and private canteens; 9. encouraging and supporting research and innovation in the field organic production; 10. promoting projects for the traceability of organic products to share data related to the different phases, information on environmental sustainability, on soil health, on distance from transformation plants, on the use of environmentally friendly plant protection products and on processing and packaging techniques used; 11. enhancing the typical Italian organic production; 12. promote environmental sustainability by defining actions to increase and maintain natural soil fertility and the use of conservation methods, as well as packaging and environmentally friendly distribution.

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[284] Luca Petrelli., *Il piano di azione italiano per l'agricoltura biologica fra piano di azione europeo, Nuova normativa italiana e riforma della politica agricola comune* (Cannara (Perugia 2004) 17.

[285] The webpage for the public consultation is: <https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/18456>.

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The very brief analysis of the Italian main legal tools in the field of organic production clearly shows the importance of the sector in the governance of the national agriculture, being organic food production acknowledged as an agricultural system that focuses on restoring the natural environment while promoting human and animal wellbeing.

Poland (Izabela Hasińska)

In Poland until the introduction of the provisions of Regulation (EU) 2018/848 of the European Parliament and of the Council of May 30, 2018 into the Polish legal order, issues related to organic farming were primarily regulated by the Law of June 25, 2009 on organic farming[286], which implemented Council Regulation (EC) No 834/2007 of June 28, 2007 into the national legal order. As of January 1, 2022, Regulation 834/2007 was repealed and replaced by Regulation 2018/848, so the national legislature was obliged to adopt a new Law on Organic Agriculture and Production implementing the new EU regulation.

Due to the change in the scope of products covered by the European Union law on organic farming to include non-agricultural products, such as salt and other products listed in Annex I to Regulation 2018/848, the title of the proposed law was expanded and finally reads "on organic farming and production" to specify the actual subject of the law. The new law of June 23, 2022 on organic farming and production [287] implements the provisions of EU regulations on organic production and labeling of organic products, and aims to guarantee a high level of confidence of producers and consumers in the system of control and certification for organic production.

[286] Journal of Laws. 2009, No 116, item 975.

[287] Journal of Laws. 2022, item 1370, this Act amended: the Act of October 19, 1991 on the management of agricultural properties of the State Treasury, the Act of December 21, 2000 on the commercial quality of agri-food products, the Act of December 19, 2003 on the organization of fruit and vegetable markets and the hops market, the Act of March 11, 2004. on the organization of certain agricultural markets, the Law of December 17, 2004 on the Registration and Protection of Names and Designations of Agricultural Products and Foodstuffs and Traditional Products, the Law of July 10, 2007 on Fertilizers and Fertilization, the Law of February 10, 2017. on the National Center for Agricultural Support, the Law of February 13, 2020 on the protection of plants against agrophages, the Law of February 13, 2020 on the State Plant Protection and Seed Inspection, the Law of March 2, 2020. on special solutions related to the prevention, prevention and eradication of COVID-19, other infectious diseases and emergencies caused by them, and the Law of November 17, 2021 on counteracting the unfair use of contractual advantage in the trade of agricultural and food products, and repealed the Law of June 25, 2009 on organic farming.

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The national legislator has assumed that the priorities on which the new regulations must be based should be environmental protection and safeguarding consumer interests, and they require the systematic introduction of appropriate instruments of state environmental policy. These instruments consist of both legal, administrative solutions such as environmental standards and penalties for non-compliance, permits and administrative decisions, as well as economic solutions in the form of fees and subsidies.[288] The purpose of the national law has become to promote environmental protection, maintain biodiversity, gain consumer confidence in organic products and ensure food safety.

Changing the way of farming and undertaking organic activities also has an economic dimension. Thus, subsidies can be provided from the state budget for: conducting research on organic farming, subsidizing research related to the recognition of an organic production product as meeting the requirements set forth in the regulations on organic farming, subsidizing the cost of inspection of organic producers, subsidizing promotional and informational activities in organic farming, subsidizing tasks related to the performance of analyses for the content of substances not allowed to be used in organic farming, subsidizing the performance of analyses and research related to the performance of analyses for the content of genetically modified organisms in organic crops and products.

The Law on Organic Agriculture and Organic Production also provides for subsidies for the implementation of contracts or agreements concluded within the framework of international cooperation on the coordination of research related to organic production.[289] When operating a certified organic farm, one can receive additional crop subsidies. In addition to traditional area payments, one then receives a so-called organic payment, financed by EU funds under the Rural Development Programme.

In Poland, the system of control and certification for undertaking and carrying out organic production is carried out by the Chief Inspector of Commercial Quality of Agricultural and Food Articles and twelve certification bodies, to which the tasks of official inspections and certain tasks related to other official activities have been

[288] Jacek Wysocki, *Pro-ecological activities of large production enterprises in Poland – results of surveys*, in *New Forms of Innovation*, ed Krystyna Poznańska (Warsaw 2018) 83.

[289] See: Article 22 of the Law on Organic Agriculture and Production.

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delegated[290]. The Chief Inspector of Commercial Quality of Agricultural and Food Products is the competent authority to delegate to certification bodies the tasks of official inspections and certain tasks related to other official activities, as well as the supervisory authority for certification bodies and organic production. The functioning of the system of control and certification in the field of organic farming is aimed at securing organic production and thus guaranteeing to the consumer that the products on the market have been produced in accordance with the applicable regulations.[291]

The national law regulates the conditions for notification of organic production activities. Notification is made through a selected certification body, on the basis of a form made available on the website administered by the Chief Inspectorate of Commercial Quality of Agricultural and Food Articles. The authority competent to accept the application is the Provincial Inspector of Commercial Quality of Agricultural and Food Articles.[292] No fees are charged in permit cases. Data and information provided by certification bodies to the competent authority are publicly available data. Each certificate issued to an entity covered by the control system in organic production shall include its name and surname or name and address.

The selected certification body, together with the producer, is responsible for the quality of organic products. Certification bodies have been authorized both to carry out official inspections and to regularly report their results to the competent authorities. The basis of inspection in organic farming is verification of the production method. It should be noted here that on organic farms compliance with the principles of organic agronomy is verified By way of example, in food processing, the assessment covers the entire process of processing organic raw materials, including the documentation required for the facilities where processing will be carried out and the practices used, as well as measures for processing lines, packaging facilities for processed organic products and warehouses for storing them. Also important is information on the sources of raw materials such as copies of certificates from suppliers, purchase-sale invoices, shipping documents, as well as a description of the processing process, including

[290] See: <https://www.gov.pl/web/ijhars/jednostki-certyfikujace> accessed 21 January 2023.

[291] See: <https://www.gov.pl/web/ijhars/system-kontroli-i-certyfikacji> accessed 22 January 2023.

[292] See: Article 17(1) of the Law on Organic Agriculture and Production.

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recipes, a list of additives used, receipts certifying the flow of raw materials and finished products.

Both the certification body and the producer are subject to fines for failure to comply with the regulations and conditions for organic production. A fine of up to ten times the average salary for the year preceding the year of initiation of the penalty proceedings is imposed on a certification body that, among other things, fails to provide or provides false or incomplete data or information, fails to perform its notification obligation, fails to provide control documentation or information that it is required to provide by the applicable regulations.[293]

In turn, a certification body that issues a certificate for production that does not meet the requirements set forth in the regulations on organic farming, or, contrary to the regulations on organic farming, deems that the conversion period has been completed, or conducts an official inspection or other official activities not in accordance with the rules or manner required by the regulations is subject to a fine of up to 20 times the average salary for the year preceding the year in which the proceedings for imposing the fine were initiated Also covered by this sanction are such actions of the entity in which it conducts official inspection or other official actions through persons not enrolled in the register of organic farming inspectors, or in a scope inconsistent with the scope of the types of specialization in the conduct of official inspection, or through persons who are enrolled in this register, but do not meet the obligation to raise the level of knowledge.[294]

On the other hand, entities that prevent the inspection authority from carrying out inspection activities in the framework of supervision are subject to a fine of up to 20 times the average salary for the year preceding the year in which the proceedings for imposing the fine are initiated In a situation in which they hinder this body from carrying out inspection activities in the framework of supervision, then they are subject to a monetary penalty of up to fifteen times the average salary for the year preceding the year of initiation of proceedings for imposing a penalty.

[293] See: Article 23 (1) of the Law on Organic Agriculture and Production.

[294] See: Article 23(2) of the Law on Organic Agriculture and Production.

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Placing on the market products or substances, not authorized for use in organic production, which have been labeled in a manner suggesting that the products or substances in question are legally authorized for use in organic production, including by labeling with the term, "organic" or a derivative of this term, or the term, "eco" or , "bio", shall be subject to a pecuniary penalty in the amount of up to 200 percent of the pecuniary benefit that it obtained or could have obtained for the marketed product, product or substance for the year preceding the year of initiation of proceedings for imposing a penalty.[295]

In determining the amount of the fine, the authority that imposes it is obliged to take into account the degree of harmfulness of the act, the degree of culpability, the scope of the violation, the previous activity of the market operator and its potential. Thus, as rightly emphasized in the doctrine for a long time and currently, the actual imposition of the maximum penalty, although reasonable in many cases, is significantly difficult. It is characteristic to adjudicate penalties in minimum amounts. A fine, on the other hand, should be effective, proportionate and deterrent. A low penalty has nothing to do with the realization of its preventive function. This makes it very difficult in practice to "consume" the profits from cheating consumers, and the preventive dimension of the penalties applied, if at all possible to achieve, is small.

The clarification in the new legislation of the procedures for taking up organic production, as well as the operation of the inspection and certification system, should better ensure consumers the due quality of organic products while taking care of the legitimate interests of honest producers. This goal is also served by the unification of the labeling of organic products and the introduced obligation of information regarding their origin.

As can be seen, the regulations governing organic farming cover the entire food chain, i.e. from production, storage, packaging, labeling, disposal, transportation, advertising, up to the final consumer's choice of the product. This comprehensive method of regulation promotes environmental and social protection, for at its core remains the premise of protecting all participants in the chain. In the clarification and expansion of sanctions for non-compliance with regulations on organic farming can also

[295] See: further Article 24 of the Law on Organic Agriculture and Production.

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be seen the strengthening of consumer protection. It should be considered right to make the amount of the fine dependent on the size of the financial benefit that the entity in question has obtained or could obtain for products placed on the market contrary to the conditions of organic production. This significant increase in the amount of the monetary penalty means that the entity in question will not, "pay off" such action. The realization of the preventive function of the financial penalties provided for non-compliance with the conditions of organic production, will be able to properly assess only on the basis of their application in a specific factual situation. So far, the penalties applied have remained at the lower limit of the basis for their assessment, and their severity has been low.[296] Enforcing compliance with the requirements for organic farming and production can therefore be considered a challenge for both controlling and applying authorities.

Portugal (Rute Couto)

In Portugal there is currently a National Strategy for Organic Agriculture (ENAB) and an Action Plan (PA) for the production and promotion of organic products 2017-2027. The ENAB has 5 strategic objectives to fulfill in a 10-year time horizon: "1) To encourage the expansion of Organic Production areas in the Agriculture, Livestock and Aquaculture sectors, by improving their technical viability and strengthening their economic attractiveness; 2) To increase the supply of agricultural and agro-food products obtained in Organic Production, promoting their competitiveness and their commercial profitability in domestic and foreign markets; 3) To develop the demand for organic products, through the structuring of the sectors, the opening of new markets, the promotion of their notoriety, their availability and the reinforcement of trust and credibility with the consumer; 4) To promote the knowledge and raise the level of competence on Organic Agriculture and Production in the specific national edafo-climatic conditions; 5) To dynamize business innovation and the availability of statistical, market and technical support information to the organic agricultural, livestock and aquaculture production."[297]

[296] See more extensively Izabela Hasińska, 'Unreliable organic marketing in the context of organic production conditions' (2022) No 2 *Review of Agricultural Law* 81-97 with the literature cited therein.

[297] See: <https://files.dre.pt/1s/2017/07/14400/0420704231.pdf >.

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There are 10 strategic goals of the ENAB: "1) Doubling the area of Organic Agriculture, to about 12% of the national utilised agricultural area (SAU); 2) Tripling the areas of horticultural fruit, legumes, protein crops, nuts, cereals and other vegetable crops for direct consumption or transformation; 3) Doubling the livestock and aquaculture production in organic production (PB), with particular focus on the production of pigs, poultry, rabbits and beekeeping; 4) Doubling the internal processing capacity of organic products; 5) Increasing by 50% the consumption of organic products; 6) Tripling the availability of Portuguese organic products in the market; 7) Reinforcing the technical capacity in organic farming, doubling the number of certified technicians and reinforcing the State's specific technical capacity; 8) Increasing, by at least 20%, the capacity to offer training; 9) Creating an organic farming experimentation network, with the installation of at least one certified experimental unit in each of the country's agricultural regions; 10) Creating a "BIO" portal for the dissemination, promotion of innovation and diffusion of specific technical and scientific information."[298]

In addition to the European Union Regulations on organic production, directly applicable and binding in the Member States, Decree-Law No 256/2009 of 24 September (republished by Decree-Law No 37/2013 of 13 March) applies at national level, establishing the principles and guidelines for the practice of integrated protection and integrated production and the system of technical standards applicable to integrated protection, integrated production and organic production, in the context of primary agricultural production, and regulates the training of technicians and the access and exercise of the activity of the respective training entities. The law stipulates that only authorized plant protection products, veterinary medicines and products for veterinary use and authorized biocidal products for veterinary use may be used in organic production. It also refers to the technical standards published by the Directorate-General for Agriculture and Rural Development (DGADR).[299]

The DGADR also makes available an "Organic Producer Guide".[300] In this Guide are described:

[298] Idem.

[299] See: <https://www.dgadr.gov.pt/>.

[300] See: <https://www.dgadr.gov.pt/mediateca?task=download.send&id=388&catid=46&m=0>,

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1. Rules regarding the start of the organic production method (MPB) activity, namely the prior assessment and conversion period to MPB, notification of the activity to the DGADR, commitment to respect the applicable legal provisions and adherence to an organic production control system and submission to the control of the production process, including the obligation to access, provide information and present results, as well as the maintenance of documentary records;

2. General rules for parallel production and prohibition of the use of GMOs, ionizing radiation and landless production;

3. Rules relating to the Farm Management Plan, regarding plant production in MPB, animal production in MPB, management of effluents, by-products and farm waste, and collection, packaging, transport, and storage of products.

When in receipt of institutional support, the organic producer must also meet the eligibility criteria and commitments specific to each support.[301] Agricultural practices beneficial for the climate and environment (greening) are particularly supported These include crop diversification (DC), maintenance of permanent grassland (PP) and holding ecological focus area (SIE).[302]

In Portugal there are funding opportunities available for those wishing to develop organic production projects, such as the Rural Development Programme (PDR-2020)[303] under the European Agricultural and Rural Development Fund (FEADER), support from the Agriculture and Fisheries Financing Institute (IFAP) [304] and support from the Portuguese Organic Agriculture Association (AGROBIO).[305]

The organic production process is subject to an official control, defined by a "Control Plan in Quality Regimes (Organic Production) – PNCP".[306] This Plan is coordinated by the DGADR and covers all stages of production, preparation, distribution, and import, until the organic products are made available to the final consumer.

[301] See: <https://www.ifap.pt/portal/mpb-regras>.

[302] See: <https://www.ifap.pt/greening-regras>.

[303] See: <http://www.pdr-2020.pt/>.

[304] See: <https://www.ifap.pt/portal/web/guest/ajudas-apoios>.

[305] See: <https://agrobio.pt/>.

[306] See: <https://www.dgadr.gov.pt/images/docs/val/mpb/plano_controlo_MPB_2020_2022.pdf>.

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The control activities are delegated to control bodies (OC), which verify the conformity of agricultural products and foodstuffs produced according to the Organic Production Mode (MPB), according to specific control plans for each area of operation, with prior validation by the DGADR.

There are currently 10 control and certification bodies[307] in Portugal that are recognized and supervised by the DGADR. The OCs conduct control-visits at least once a year to organic operators. Additional controls can be performed depending on the annual assessment of the risk status of the operator. Depending on the risk of non-compliance with the organic production rules, samples are taken (the minimum number of analyses to be performed each year by the OC is 5% of the total number of operators under their control) to search for unauthorized products or to verify production techniques that do not comply with the organic production rules.

The DGADR also designates the official control laboratories for organic products[308], accredited for the analysis of samples collected in the scope of official controls to be carried out by the OCs on organic operators. Producers, preparers, distributors, importers and exporters who produce, handle or market organic products and who comply with the EU organic production and labeling rules can be certified organic. After being placed on the market, the control of the commercialization of organic products is ensured by the Food and Economic Security Authority (ASAE)[309], which develops proactive (verification of compliance with legislation, labeling analysis, and sampling) and reactive (following complaints) inspection actions.

In 2017, a National Observatory for Organic Production (ONPB)[310] was created, with the mission to collect, process and disseminate in a freely accessible portal on organic agriculture, the available information on production, processing, trading of organic products, including their consumption and the various existing markets.

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[307] See: ECOCERT (<https://www.ecocert.com/pt-PT/home>), Kiwa SATIVA (<https://www.kiwa.com/pt/pt/>), CERTIPLANET (<https://www.certiplanet.pt/>), CERTIS (<https://certis.pt/>), AGRICERT (<https://agricert.pt/>), TRADIÇÃO E QUALIDADE, CODIMACO (<http://www.codimaco.pt/>), SGS Portugal (<https://www.sgs.pt/>), NATURALFA (<https://naturalfa.pt/>) and IVDP (<https://www.ivdp.pt/>).

[308] See: <https://www.dgadr.gov.pt/images/docs/val/mpb/Labs_habilitados_RQ.pdf>.

[309] See: <https://www.asae.gov.pt/>.

[310] See: <https://producaobiologica.pt/>.

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Organic Production is also encouraged in the following areas:

1. Research and Development, through a "Network of Experimentation and Research Projects". The "Innovation for Agriculture"[311] portal stands out, with relevant information about the Operational Groups and technical research documents in the scope of Agriculture and Organic Production;

2. Training and Education, either through the offer of higher education courses dedicated exclusively to organic agriculture, or through training and accreditation in Organic Production;[312]

3. Associativism and Representation, through organic producer organizations.[313]

In the framework of the mentioned ENAB 2017-2027, a SWOT analysis of the strengths, weaknesses, opportunities, and threats facing organic agriculture and production in Portugal was carried out and that motivated the 3 axes of the Action Plan (PA) for the production and promotion of organic products: Production; Promotion and markets; Innovation, Knowledge and Information Dissemination. Of the identified parameters, we perceive the most relevant challenges to be:

1. In the Production axis, strengthening the economic attractiveness of the MPB. Given the aging of the agricultural population and adverse economic environment, it is important to enhance technical knowledge, foster the organization of organic producers and streamline the certification procedures and investment support system, as well as legislative measures of positive discrimination of organic products;

2. In the axis Promotion and markets, the increase of consumption and strengthening of consumer confidence in these products. The economic recession combined with the price of organic products must be countered through innovative commercial strategies for the promotion of organic products supported by transparent information to consumers. Furthermore, it is important to integrate organic products in a generalized way in educational, health, leisure, etc. establishments;

3. In the Innovation, Knowledge and Information Dissemination axis, investment in R&D and in the technical training of the support structures for organic producers.

[311] See: <https://inovacao.rederural.gov.pt/>.

[312] See: <https://producaobiologica.pt/index.php/producao-biologica/investigacao-e-desenvolvimento-2>.

[313] See: <https://producaobiologica.pt/index.php/producao-biologica/associativismo-e-representacao>.

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Slovakia (Lucia Palšová)

Organic farming is applied in Slovakia since 1991 under the regulatory standard "Rules of organic farming valid for the territory of the Slovak Republic". In 1995, the Ministry of Agriculture adopted the "Conception of organic farming in Slovakia". This fundamental document determined the basic direction of organic farming until 2010, in order to create legal, organizational and economic conditions for the development of organic farming, under which it should reach its representing 4-6% of the total agricultural land in Slovakia until 2010. In the same year, the Act 152/1995 Coll. was adopted, based on the requirements of the EU legislation in order to harmonize Slovak legislation with the EU legislation. This arrangement puts emphasis on ensuring conditions of safe food production in relation to the protection of consumers' health and to safeguard the rights of consumers. Approximation of the SR EU legislation on organic farming was finalized by the Act 415/2002 Coll., which amends Act 224/1998 Coll. on organic farming and organic food production. This fulfilled one of the basic tasks set out by the concept of development of organic agriculture for the period until 2010 (MASR, 2005). The Slovak Republic also confirmed that it is one of the countries that can meaningfully protect its nature, the environment, care for the health and quality nutrition of its population, and where the expansion of sustainable land management system gradually restores harmony between nature and man.

A key moment for the development of organic farming itself was Slovakia's accession to the EU. It was necessary to adapt the internal market, which required legislative and organizational changes that would allow the inclusion of organic farming in the EU. At that time the Act. 421/2004 Coll. on organic farming was adopted necessarily amending the Council Regulation (EEC) No 2092/1991 on organic production of agricultural products and indications referring there to on agricultural products and foodstuffs. In 2005, the Action plan for the development of organic agriculture in the Slovak Republic until 2010 was adopted, setting out the objectives and priorities for its further development. The Action plan, based on the needs of multisectoral framework, provides inter spheres of government’s priorities for control components and non-governmental organizations active in this field. The global objective of the Action plan was to increase the efficiency in the sector of agricultural production and the quality of life of the rural population, which was to be achieved by meeting specific objectives: to empower farming and increase its competitiveness,

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support activities with higher added value and expand the organic food market, improve information base and promote organic farming, better vocational guidance, training and research in organic farming, complete the institutional framework of organic farming.

1 January 2009, the Council Regulation (EC) No 834/2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91 entered into force. In accordance with Art. 3 of the regulation the ecological production will follow the below objectives:

a) Creating a sustainable agricultural management system that:

– Respects the natural systems and cycles, maintain and enhance the health of soil, water, plants and animals and the balance between them;
– Contributes to a high level of biological diversity;
– Responsibly uses energy and natural resources, such as water, soil, organic matter and air;
– Observes high standards of animal welfare, and particularly respecting species-specific behavioural needs;

a) Aims to produce high quality products;

b) Focuses on the production of a wide variety of foods and products that meet consumer demands for goods manufactured practices that do not harm the environment, human health, plant and animal health.

As it is apparent from the regulation (paragraph 3 of Council Regulation (EC) No 834/2007), governing the sector of organic production, the legal framework should ensure fair competition and the proper functioning of the internal market with organic products, as well as maintain and satisfy consumer confidence in products labelled as organic. The legal framework should further aim at providing conditions under which this sector can progress in line with production and market developments. Detailed rules for the implementation of the regulation are amended by the Regulation (EC) No 889/2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control, as amended.

In regards with changes in European legislation in Slovakia the Law No 282/2020 Coll. on ecological agricultural production as amended, was adopted, which in its material scope (paragraph 1) provides:

– Rules of organic agricultural production according to special regulations;

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– The scope of state administration bodies in the field of organic agricultural production;

– Rights and obligations of persons carrying out organic agricultural production (hereinafter referred to as "operator");

– Performance of the initial verification of the prerequisites for organic agricultural production;

– Maintaining the register of operators and the register of inspection organizations;

– Performance of official control of organic agricultural production of operators;

– Authorizations and obligations of inspection organizations;

– Labeling of products of organic agricultural production;

– Misdemeanors and other administrative offenses in the field of organic agricultural production.

The legislative framework for organic farming in the SR is set in accordance with European legislation, which does not differ from other EU countries with developed organic farming. The questionnaire survey showed that the level and quality of legislation in the field of organic farming is good and understandable. In terms of legislative changes reduction of state bureaucracy would be appreciated by farmers (e.g. farmers must regularly submit different written reports, statistics for Agricultural Paying Agency and CCTI).

The institutional framework of organic farming is constituted by:

a) EU authorities;

b) Government bodies: the Ministry of Agriculture and Rural Development of the SR (§ 3 of the Act No 189/2009 coll.) and the Central Control and Testing Institute of Agriculture (§4 of the Act No 189/2009 coll.);

c) Inspection and certification organization in organic farming Sk – Naturalis, Ltd.;

d) Consultancy: Agroinštitút Nitra, state enterprise – Centrum of agriculture consultancy. From the view of typology of financing of agricultural consultancy. The advisory system for organic farming in the SR is primarily financed by the government as a service, paid by taxpayers . Advisory system is further financed by EU funds, as well as international organizations, non-governmental organizations and personal user resources;

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e) Independent agricultural consultants;

f) Scientific research and departmental institutions;

g) Third Sector – voluntary association of organic farmers (e.g. Ekotrend – Association of organic farming , etc.).

Consultancy in this area is provided by Agroinštitút Nitra (from 01.01.2023 it was renamed to the Institute of Knowledge-Based Agriculture and Innovation), state enterprise and also independent consultants who are not methodically coordinated In the SR, not every chain store has a cash register software able to differentiate between selling organic and non-organic product, so it is not possible to prove that the demand for organic products is growing, although individual surveys prove it. Primary producers and manufacturers miss the feedback on whether the consumers are interested in organic products, or whether their consumption is increasing. It would be appropriate to adopt the legislation in this respect.

6. ECOSYSTEM SERVICES (*Krzysztof Różański*)

Ecosystem functions refer variously to the habitat, biological or system properties or processes of ecosystems.[314] Some researchers define this term as 'the capacity of natural processes and components to provide goods and services that satisfy human needs, directly or indirectly'[315] whereas the concept 'ecosystem services' relate to flows of materials, energy, and information from natural capital stocks which combine with manufactured and human capital services to produce human welfare.[316] The term 'ecosystem services (landscape services)' means the set of outputs and functions of an ecosystem (landscape) that are useful to human society.[317] Outputs include material goods that are directly used. In contrast, useful functions include, inter alia, functions that sustain the possibility of life (e.g. cleansing functions) and enhance the its quality (e.g. aesthetic qualities and cultural or scientific goods). In this view, landscape services

[314] Robert Costanza et al., 'The value of the world's ecosystem services and natural capital' (1997) Vol. 387 *Nature* 253.

[315] Rudolf S. de Groot et al., 'A typology for the classification, description and valuation of ecosystem functions, goods and services' (2002) Vol 41 *Ecological Economics* 393.

[316] Robert Costanza et al., cit.

[317] Jerzy Solon, 'Koncepcja „Ecosystem Services" i jej zastosowania w badaniach ekologiczno-krajobrazowych' (2008) Vol 21 *Problemy Ekologii Krajobrazu* 25.

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are related to ecosystem processes and include the extraction of matter, energy and information from the environment natural environment. Together with the products of human hands, they satisfy fundamental needs of society and have a direct impact on human health or material well-being.

Since 2009, a uniform definition and a standardised typology for ecosystem services has been developed in the European Union, namely – the Common International Classification of Ecosystem Services[318]). According to this Classification, we shall distinguish provisioning services[319], regulating and maintenance services[320], as well as cultural and social services.[321] Within the provisioning services three major classes of services are recognised: nutrition, which includes all ecosystem outputs that are used directly or indirectly for as foodstuffs (including potable water), materials (both biotic and abiotic) that are used in the manufacture of goods and biotic and abiotic renewable energy sources. In terms of and maintenance services, four major classes of Services are recognised: regulation and remediation of wastes, arising naturally or as a result of human action, flow regulation, which covers all kinds of flows in solid, liquid or gaseous mediums, regulation of physical environment, including climate at global and local scales as well as regulation of biotic environment, including habitat regulation and maintenance, through such phenomena as pest and disease regulation, and the nursery functions that habitats have in the support of provisioning services etc. Within the cultural or social services we shall distinguish symbolic and intellectual and experiential services.

The amounts of services are not permanent, but evolve with the with social objectives, which determine to what extent something is a benefit and what is a cost.[322]

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[318] Roy Haines-Young, Marion Potschin 'Common International Classification of Ecosystem Services (CICES): 2011 Update' (2011) *Report for the European Environment Agency'*, <https://seea.un.org/sites/seea.un.org/files/1_116.pdf > accessed 19 December 2022.

[319] Includes all material and energetic outputs from ecosystems; they are tangible things that can be exchanged or traded, as well as consumed or used directly by people in manufacture. Both biotic and abiotic outputs are covered, but in the context of material outputs those derived from sub-soil assets (e.g. minerals) are excluded. Similarly, in the context of energy outputs, sub-soil assets such as coil and oil are excluded.

[320] Includes all the ways in which ecosystems control or modify biotic or abiotic parameters that define the environment of people, i.e. all aspects of the 'ambient' environment; these are ecosystem outputs that are not consumed but affect the performance of individuals, communities and populations and their activities.

[321] Includes all non-material ecosystem outputs that have symbolic, cultural or intellectual significance.

[322] Robert Costanza et al., therein, 254.

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The total supply of the seven ecosystem services (crop pollination, crop and timber provision, water purification, flood protection, carbon sequestration and recreation in high-value natural areas) amounts to 172 billion EUR.[323] It is estimated that crops dependent on pollination affect approximately 12% of the agricultural area in the European Union.[324] Forests deliver 47.5% of the total supply of these seven ecosystem services in the EU, croplands contribute 36% and urban ecosystems less than 1%. While correcting these percentages for the extent of each ecosystem type (forest being one of the dominant ecosystem types in terms of coverage in the EU), the combined value of these seven ecosystem services supplied by a unit of area of forests is almost 9 times more than by a unit of urban area.[325]

6.1 ECOSYSTEM SERVICES IN EUROPEAN UNION LAW *(Krzysztof Różański)*

As far as ecosystem services are concerned, it is important to emphasise that at EU level this issue has been addressed mainly at the level of policies, strategies and reports. Although some specific environmental policy areas derived from particular ideas or concepts can be distinguished, such as pollution prevention or biodiversity conservation, concepts are not always framed as distinct policy areas.[326] Indeed, there is no specific EU policy framework addressing ecosystem services, despite the fast increasing use of the concept. Instead, the ES concept might – and in fact is already to some extent implicitly – included in existing policies on nature and natural resources.[327]

The EU legislation relating to environment very often focuses on improving the status of ecosystems. In particular, the EU aims to bring habitats and threatened species into favorable conservation status, freshwater and coastal ecosystems into good

[323] The European Court of Auditors, therein, 28.

[324] Christoph Jonathan Erich Schlup, Sven Lautenbach, Peter Verburg, 'Quantifying and mapping ecosystem services: Demand and supply of pollination in the European Union', (2014) Vol 36 *Ecological Indicators* 131.

[325] The European Court of Auditors, therein, 28.

[326] Irene Bouwma, Christian Schleyer, 'Adoption of the ecosystem services concept in EU policies' (2018) Vol 29 Part B *Ecosystem Services* 213.

[327] Joachim Maes, et. al, 'Mapping and assessment of ecosystems and their services-An analytical framework for ecosystem assessments under action 5 of the EU biodiversity strategy to 2020' (2013) Vol 7 *Ecosystem Services* 14.

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ecological status and marine ecosystems into good environmental status.[328] The concept of ecosystem services appeals to help the implementation of environmental legislation. Mainstreaming ecosystem services in the EU policies that focus on the protection of terrestrial, freshwater or marine ecosystems assumes that there is a connection between ecosystem status and the services they deliver. However, this connection is until now poorly explored across Europe and needs to be demonstrated yet, also considering that the relationships between ecosystem functioning, ecosystem status, biodiversity and ecosystem services are issue of scientific debate.[329]

The EU Biodiversity Strategy for the protection of biodiversity in the period up to 2020 – Our life insurance and our natural capital[330] was one of the first ever documents to explicitly include recommendations on ecosystem services. The headline target mentions to stop their degradation in the EU, and in one of the priority objectives, to maintain and enhance ecosystems and their services through the establishment of green infrastructure. The EU committed Member States, in cooperation with the European Commission to develop compensation or offsetting schemes to ensure zero net loss, identify and assess the status and economic value of economic value of ecosystems and their services, and integrate these values into accounting and reporting systems at EU and national level by 2020. It is worth noting, that in order to promote an approach based on ecosystem services, the European Commision in 2013 presented a strategy on green infrastructure (natural and semi-natural areas designed and managed to deliver ecosystem services such as flood defences) in the EU.[331]

Europe's growing population and the increasing urbanisation and consumption are putting pressure on ecosystems and the services they provide. Therefore, the EU prioritises the protection of 30% of the EU land and sea area by 2030 and the restoration of degraded ecosystems as key policy initiatives of its EU Biodiversity Strategy for

[328] Joachim Maes et. al., 'Mapping ecosystem services for policy support and decision making in the European Union' (2012) Vol 1(1) *Ecosystem Services* 31.

[329] Therein.

[330] The EU Biodiversity Strategy for the protection of biodiversity in the period up to 2020 (COM(2011) 244.

[331] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Green Infrastructure (GI) – Enhancing Europe's Natural Capital /* COM/2013/0249 final.

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2030.[332] The Strategy[333] identified natural capital accounting as one of the key tools to integrate biodiversity considerations into public and business decision making. The Strategy includes an EU nature restoration plan. Ecosystem accounts can be used to guide large scale restoration by mapping where ecosystems are degraded, by monitoring changes in ecosystem condition following restoration, and by assessing the benefits of ecosystem restoration through ecosystem services.[334] The Strategy also aims at strict protection of 10% of EU's ecosystems – including protection of all primary and old growth forests.[335] The EU Commission clearly states that „nature is in a state of crisis" and declared that „at least one third of protected areas – representing 10% of EU land and 10% of EU sea – should be strictly protected".[336] The EU Commission also emphasized, that "it will be crucial to define, map, monitor and strictly protect all the EU's remaining primary and old-growth forests".

6.2 ECOSYSTEM SERVICES IN NATIONAL LAW

Italy (Antonio Manzoni)

The Italian law does not provide an explicit definition of ecosystem services (ES). However, it is evident from the legislation on the issue (examined henceforth) that Italy fully endorses the 2005 *Millennium Ecosystem Assessment* definition of ecosystem services.[337] Namely, the Italian legislation recognizes the four functional types of services that ecosystems offer to humankind, as identified by the just-mentioned Assessment: *provisioning* services (such as food, water, coal, timber, fiber), *regulating* services (i.e., those that regard the way in which ecosystems regulate other

[332] See: <https://environment.ec.europa.eu/news/measuring-what-ecosystems-do-us-new-report-ecosystem-services-eu-2021-06-25_en> accessed 5 January 2023.

[333] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions EU Biodiversity Strategy for 2030 Bringing nature back into our lives COM/2020/380 final.

[334] Accounting for ecosystems and their services in the European Union (INCA) 2021 edition Final report from phase II of the INCA project aiming to develop a pilot for an integrated system of ecosystem accounts for the EU.

[335] Matthias Schickhofer, 'The EU Biodiversity Strategy 2030: Ecological change in the forest sector?' <https://gef.eu/wp-content/uploads/2020/11/GEF_Article_Biodiversity_English-2.pdf> accesed 10 January 2023.

[336] Matthias Schickhofer, therein.

[337] Cf. Millennium Ecosystem Assessment, *Ecosystems and Human Well-Being: Synthesis* (Island Press 2005).

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environmental processes, such as climate, water quality, floods, wastes), *cultural* services (providing recreational, aesthetic, ethic, social and spiritual benefits), and *supporting* services (i.e., all those services that are necessary for the production of all the others, such as the photosynthesis, or soil formation). Besides, pursuant to the UN Agenda 2030 and 1992 the Convention on Biological Diversity, Italy fully endorses the concept of *natural capital* (NC) in its legislation, as well as the importance of carrying out biophysical quantifications and monetary estimates to measure the environmental costs associated with the exploitation of biodiversity and, at the same time, the benefits obtained for human welfare. For these reasons, Italy also endorses the related concept of *Payment for Ecosystem Services* (PES), which can be understood as the elaboration of opportunities for remuneration for public and private entities that maintain and/or improve natural ecosystems, preserving their fitness and keeping them able to provide ecosystem services useful to the community over time.[338]

Reflecting its membership to the EU, the Italian legislation on ESs has always been affected by the EU regulatory framework. Until the 1980s, ES in Italy were mainly protected by regulatory instruments (constraints, emission standards, authorization procedures, taxes, etc.). Since the early 1990s, with the agri-environmental measures and forestry measures envisaged by the 1992 CAP reform, the range of instruments has expanded considerably, to include even incentives and compensations for compliant farmers on a voluntary basis. At the end of the 1990s, with the affirmation of the *decoupling* of CAP support measures for agricultural production from income support measures and the *conditionality* of public aid to compliance with minimum standards of environmental protection, innovative criteria were also introduced for an enhanced promotion of agri-environmental ES. Notably, the creation of the Natura 2000 network and the provision of compensation to operators of the protected areas contribute to the diversification of SE protection instruments. Last, but not least, it is essential to mention the Biodiversity Strategy for 2020 (now the new version sets the horizon in 2030),

[338] The definition of PES is explicitly recognized by the art. 70 of the Law 221/2015 (see detailed analysis in par. 2) as a "remuneration of a share of the value added resulting from negotiating mechanisms, in the logic of direct transaction between consumer and producer, without prejudice to the preservation over time of the collective function of the good".

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which sets ambitious but necessary goals of ecosystems preservation at the EU level for all the Member States (MSs), Italy included.[339]

If we look at the most recent Italian legislation on ES, the most important measure is for sure the Law 221/2015, titled "Environmental provisions to promote green economy measures and for the containment of the excessive use of natural resources".[340] With this law, indeed, the Italian parliament explicitly provides some specific elements to orient the PES policy in Italy. The most relevant Articles are 67 and 70, directly concerning PES and NC. Indeed, the former focuses on Natural Capital accountability, and it establishes a "Committee for Natural Capital" within the Ministry of the Environment. According to this Article, every year the Committee must elaborate a report on the state of the Italian NC. Besides, it must also elaborate an *ex ante* and *ex post* evaluation of the effects of public policies on NC and ES, by following methodologies defined by the UN and the EU. Another task of the Committee is promoting the adoption of environmental accountability systems by local authorities, and the preparation of specific environmental reports aimed at monitoring and reporting the implementation, the effectiveness and efficiency of the policies and actions carried out by the predisposed entity for environmental protection, as well as the state of the environment and of the NC. Art. 70 instead, commits the Government to adopt one or more decrees for the introduction of the PES system in Italy. This system is intended to be activated in the presence of a public intervention of assignment of a naturalistic asset of common interest in concession to a designated beneficiary. The Article establishes that these decrees must respect certain guiding principles regarding PES mechanisms. In

[339] As a member of the EU, Italy did also take part to the *Mapping and Assessment of Ecosystems and their Services, MAES* envisaged by the 2020 Biodiversity Strategy, aimed at achieving a standardized mapping on the state of ES in all MSs.

[340] As highlighted by a report from the Italian Ministry of the Environment in 2009, some earlier traces of Italian legislation regarding ESs could be found in the Law 959/1953, which established that concessionaries of mountain water resources had to be charged with a certain amount, that was to be destined to the specific area development and to compensate local populations for the presence of the just-mentioned water infrastructures. A proper recognition of PES, instead, can be found in the Law 36/1994 (Legge Galli), which, in its Art. 24, established that a share of the water tariff may be used to safeguard areas in the catchment area. This law also introduced another basic principle of PESs, that is the "polluter pays" and "user pays" one. The law was implemented specifically by the Piedmont Region (art. 8 paragraph 4 of its Regional law 13/97) and by the Emilia Romagna Region (Regional law 25/99 and subsequent amendments). Cf. Italian Ministry of the Environment, 'Definizione Del Metodo per La Classificazione e Quantificazione Dei Servizi Ecosistemici in Italia. Verso La Strategia Nazionale per La Biodiversità' (2009). Cf. also Davide Marino and Davide Pellegrino, 'Can Payments for Ecosystem Services Improve the Management of Natura 2000 Sites? A Contribution to Explore Their Role in Italy' (2018) 10 *Sustainability* 665.

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particular, PES must maintain or increase in any case an array of specific ES (among which, services of carbon fixation from forests and arboriculture; of water regulation in mountain basins; of biodiversity preservation and landscape quality; of river beds cleaning, and others), identifying the providers and the final beneficiaries (municipalities, protected areas, mountain basin authorities, organizations of collective management of common goods). In addition, Article 70 explicitly recognizes the role played by the agricultural and agro-forestry territory in the provision of SE, envisaging incentive mechanisms with the aim of remunerating farmers who provide these services. As an additional incentive for the adoption of PES practices by the designated subjects, the Article even envisages the introduction of awards for those municipalities that consistently embrace innovative environmental and urban accountability systems. Unfortunately, despite the honorable goals of this law, at present the Italian government has not still adopted the above-mentioned decrees accounting for PES.[341]

However, there are other legislative interventions in Italy mentioning ES in the context of other measures. For instance, the government decree 39/2015 ("Regulation laying down the criteria for defining the environmental cost and the cost of the resource for the various water use sectors") provides a definition of some water ES in its Annex A. Or, more recently, the government decree 77/2021 ("Governance of the National Recovery and Resilience Plan and first measures to strengthen administrative structures and accelerate and streamline procedures"), which, to promote the circular economy in the Italian wood sector, it envisages the conclusion of "forest agreements", namely public-private agreements with the goal of "exploiting private and public areas with an agro-forestry-pastoral vocation, and ensuring the conservation and provision of ES, respecting biodiversity and forest landscapes".[342]

Despite the just-mentioned inaction of the Italian government in adopting the prescribed decrees for the introduction of PES mechanisms, it is possible to identify some cases of PES implementation by Italian regions. At a general level, we could state

[341] It is worth reporting that in Italy there are two legislative proposals regarding PES that have been submitted to the parliament in the past years, but they have not been discussed yet. Notably, the legislative proposal S.899/2013 ("Provisions for the support and enhancement of small municipalities and the redevelopment of Italian rural and mountain areas") which, very interestingly, anticipates some of the PES measures introduced by the Law 221/2015 and, more recently, the legislative proposal C.1711/2019, titled "Regulation of systems of remuneration of ecosystem and environmental services".

[342] Government decree 77/2021, art. 35-bis.

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that woods and forests surely represent the most extensively widespread ecosystem in the Italian territory[343], delivering various types of ES (timber and wood products, mushrooms and truffles, recreational spots for agro-tourism, but also carbon fixation, pollution absorption, and others).[344] There are different examples of PES in Italian regions. For instance, with its Regional law 17/2014, the Liguria Region has promoted the establishment of voluntary consortia among the owners (public and private) of certain portions of forest, for the collection and the sale of mushrooms and for the management of the relative agricultural production. These activities are allowed only under the release of apposite licenses, whose revenues are directly used for the maintenance and enhancement of the land owned by the members.[345] Another example of PES in Italy, developed during the 2007-2013 CAP Rural Development Programme of the Umbria Region, is the project "Operation Pollinator", promoted by a multinational agro-chemistry company (Syngenta) with the technical/scientific support of the University of Perugia, and the additional sponsorship of the Regional Agency for Agriculture for Development and Innovation (ARUSIA). This project proposed to provide agro-environmental habitats to increase the number of pollinating insects on agricultural land, to protect and improve the biodiversity, to increase the pollination of crops and yields, and to ensure economically sustainable agriculture in the region. In concrete terms, farmers could devote 1 hectare every 10 to the Operation Pollinator protocol, receiving up to 1,270 EUR in annual agri-environmental payments for each of these hectares under the protocol. The outcome resulted in a "win-win" situation, where a larger productivity for the farmers has been accompanied by an increased biodiversity and agro-environmental ES in the area. Another example of PES can be found in the Tuscany Region where, in 2007, a group of local municipalities concluded an agreement with approximately 40 farmers and forest owners in the area of

[343] According to the official 2019 data from the Italian Ministry of the Environment, in Italy forests cover 36.4% of the total national area, for an extension of 10.9 million hectares.

[344] While regarding water ES, for instance, Italy is seriously behind in the implementation of the requirements of Directive 2000/60/EC (EU Water Framework Directive).

[345] Liguria Regional law 17/2014. Cf. Davide Marino, 'I Pagamenti Dei Servizi Ecosistemici in Italia Dalla Sperimentazione All'applicazione Attraverso Il Progetto LIFE + MGN' (2017) 3 CURSA (pas)SAGGI. Cf. also Uta Schirpke and others, 'Positive Effects of Payments for Ecosystem Services on Biodiversity and Socio-Economic Development: Examples from Natura 2000 Sites in Italy' (2018) 34 *Ecosystem Services* 96. Cf. also Sergio Mattia, Alessandra Oppio and Mina Di Marino, 'How to Conserve and Develop Vulnerable Agricultural Land. Assessment and Monitoring of Policy and Planning Options on Ecosystem Services' in Maria Crescimanno, Lorenzo Casini and Antonino Galati (eds), *Evoluzione dei Valori Fondiari e Politiche Agricole* (2013).

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the Serchio river, with the purpose of improving the monitoring and control of flood risk on over 500 km of watercourses within the mountain basin. Farmers and forest owners receive around 5,000 EUR per year for monitoring and assessing the level of risk, and for providing an alert service to the public authority in case of hydrogeological hazards (landslides, obstructions, etc.). On the basis of this report, farmers and forest owners may also provide some services, such as the removal of trees and other sediments that accumulate along the banks of watercourses. This example demonstrates how PES schemes may provide environmental benefits (reducing flood risks), social benefits (enhanced farmer involvement), and economic benefits (saving up to 80% of the annual costs of maintenance).

Poland (Krzysztof Różański)

As far as ecosystem services are concerned, it is important to emphasise that it is the European Union which is engaged in developing the concept of ecosystem services and its practical application. In Poland, however, for a long time this was hardly reflected in documents of a legal or strategic nature.[346] As late as in the Fifth National Report on the Implementation of the Convention on Biological Diversity (2014)[347], it was pointed out that no comprehensive analysis of the importance and value of ecosystem services has been carried out so far. and value of ecosystem services, and Polish valuations of national assets do not directly address this topic, although its social importance is not in doubt. Our life insurance and our natural capital – the EU Biodiversity Strategy for the protection of biodiversity in the period up to 2020[348] (COM(2011) 244) was one of the first ever documents to explicitly include recommendations for ecosystem services.[349]

[346] Jerzy Solon et al., *Świadczenia ekosystemowe w krajobrazie młodoglacjalnym Ocena potencjału i wykorzystania* (Wydawnictwo Akademickie SEDNO Spółka z o.o. 2017) 55.

[347] Ministerstwo Klimatu i Środowiska, 'Piąty Krajowy Raport z wdrażania Konwencji o Różnorodności Biologicznej' (2014) <http://archiwum.nfosigw.gov.pl/download/gfx/nfosigw/pl/nfoekspertyzy/858/147/1/2012-713.pdf > accessed 28 December 2022.

[348] Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions - Our life insurance, our natural capital: an EU biodiversity strategy to 2020, COM(2011) 244 final.

[349] Jerzy Solon et al., *cit.,* 55-56.

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The implementation of the EU strategy at the national level, and at the same time an element of the implementation of the Convention on Biological Diversity[350] in Poland, was the Programme for the Protection and the Sustainable Use of Biological Diversity and the Action Plan for 2015-2020.[351] The Programme has been adopted on the basis of the article 111(3) of the Nature Conservation Act of 16 April 2004.[352] The Programme, inevitably repeats the provisions contained in the EU strategy, places additional emphasis on the development and implementation of a system (methods) for valuing ecosystem services and incorporating these values into national development strategies and sectoral planning systems, so that biodiversity becomes a determinant of socio-economic development and is so that biodiversity becomes a determinant of socio-economic development and is perceived differently by society, e.g. in terms of shaping individual consumption behavior.

Currently, the issue of ecosystem services has been addressed by the EU Biodiversity Strategy 2030.[353] References to the new EU Strategy are included in the Strategy: Ecological policy of the state 2030 – development strategy in the area of environment and water economy[354] adopted pursuant to Article 14(5) of the Act of 6 December 2006 on the principles of development policy.[355]

According to its contents, one of the priorities of Polish ecological policy until 2030 will be the protection of Poland's natural heritage, inter alia, through taking action to improve the state of biodiversity and more fully linking its protection with the social and economic development of the country, including the improvement of the system of nature protection system, preserving and restoring natural habitats and populations of

[350] Convention on Biological Diversity,Rio de Janeiro, 5 June 1992, ratified by Poland and published in: Polish Journal of Laws 2002 No 184 item 1532.

[351] Resolution No. 213 of the Council of Ministers of 6 November 2015 on the approval of the 'Programme for the conservation and sustainable use of biodiversity with an Action Plan for 2015-2020' Polish Journal of Laws: ‘Monitor Polski’ 2015 item 1207.

[352] Nature Conservation Act of 16 April 2004, Journal of Laws 2022 item 916 – consolidated text.

[353] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM/2020/380 final.

[354] Resolution no. 67 of the Council of Ministers of 16 July 2019 on the adoption of the "Ecological policy of the state 2030 - development strategy in the area of environment and water economy, Polish Journal of Laws: Monitor Polski 2019 item 794.

[355] Act of 6 December 2006 on the principles of development policy, Polish Journal of Laws 2023, item 225 – consolidated text.

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endangered species, maintaining and restoring ecosystem functions which are a source of services to humans. Socio-economic development requires the rational and responsible disposal of space physical space, taking into account the state of ecosystems and the services they provide. In this regard, activities will be carried out to better inventory the resources of habitats and species. This will result in an improvement in the quality and effectiveness of both the management system of nature resources as well as the system of environmental impact assessments and other development planning tools development at national, regional and local level.

The issue of maintaining and restoring ecosystem services will cover the whole country, be based on an assessment of the state of ecosystems and their services. This requires the development of a system for valuing of ecosystem services and the incorporation of these values into development strategies, the planning system, national accounting and reporting systems. Biodiversity will then be recognised as a determinant of social and economic development and thus be perceived differently by society. perceived differently by society. Integrating the value of ecosystem services into national decision-making processes will allow for a proper assessment of the extent of any biodiversity loss, apply trade-offs, and improve coordination between different sectors and levels of government.

Issues relating to ecosystem services were also addressed in the SWOT analysis of the new Strategic Plan for Poland for 2023-2027.[356] Its content shows that rural areas in Poland are characterized by a significant diversity of landscape, natural and semi-natural ecosystems dependent on agriculture and forestry. In order to maintain this trend it is extremely important to establish mid-field afforestation and agroforestry systems, in particular on arable land deprived of such landscape elements. Establishing them with a high proportion of diverse tree and shrub species has a positive effect on maintaining biodiversity of agricultural areas, as they are a habitat for many organisms and a food for, among other things, birds and insects.

The above mentioned analysis also identified threats in the form of progressive climate change and associated disruption to weather patterns, increasing extreme events and disruption to water management, disease and pest outbreaks affecting natural habitats, biodiversity, landscape and ecosystem services Other threats include changes

[356] See: <https: //ksow.pl/wspolna-polityka-rolna/wpr-2023-2027> accessed 11 January 2023.

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to the rural landscape due to changes in agricultural production and building pressure, loss of biodiversity outside Natura 2000 sites if support is concentrated on bird sanctuaries and habitat sanctuaries, progressive agricultural intensification leading to biodiversity decline and habitat loss, over-extensification or abandonment of agricultural activities leading to habitat conversion and biodiversity decline. In addition, the following were also highlighted: the danger of losing or reducing the value of ecosystem services due to biodiversity loss in the rural landscape, expansion of arable land at the expense of permanent grassland acreage, insufficient measures to protect the environment (including valuable habitats, landscape), shortcomings in the scope and access to environmental information, high costs of implementing solutions to protect biodiversity, including habitat restoration, as well as increased use of plant protection products.

In this context, attention should be paid to actions: *'I.4.1 Ecoscheme from the Strategic Plan for Poland – Areas with melliferous plants*' One of the weaknesses identified in the SWOT analysis is the decline of pollinating insect populations. The ecosystem services provided by pollinators are virtually indispensable to agricultural production processes. In Europe alone, more than 4 000 vegetable varieties depend on pollination.[357] The pollination process carried out in the geographical conditions of Poland mainly by insects, is one of the key ecosystem services conditioning the maintenance of agricultural production. Ekoschemat addresses the threat of losing or reducing the value of this ecosystem service by encouraging farmers to create areas with melliferous plants that provide long-lasting, diverse and safe foraging grounds for honeybees and wild pollinators. Such areas contribute to the protection of biodiversity. It is planned that around 30,000 ha will be supported each year.

Meeting the objective of protecting biodiversity, landscapes and strengthening ecosystem services will require the provision of adequate resources of advisory staff (*I 14.3. Professional development of advisory cadres*) and services (advice and training) for farmers. Training and advisory services will be provided as part of the intervention: *I 14.1. Professional development of farmers, I 14.2. Comprehensive agricultural advisory services, and I 14.4. Support for demonstration farms*. In this respect, the need will be realized through support for the professional development of farmers in the field

[357] Christoph Jonathan Erich Schlup, Sven Lautenbach, Peter Verburg, 'Quantifying and mapping ecosystem services: Demand and supply of pollination in the European Union' (2014) Vol 36 *Ecological Indicators* 133.

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of farming farming and the use of farm resources, continuing professional development of agricultural advisors and through the implementation of comprehensive advisory programmes under the cross-cutting objective. It is envisaged that around 20% of the assumed number of recipients of training and advisory services will be covered by measures on environmental and climate issues.

It is vital to mention that activity: *R.30 Promoting sustainable forest management* contributes to maintaining biodiversity in rural areas, enhancing ecosystem services and protecting habitats and landscapes. The SWOT analysis indicated that private forest owners often do not have sufficient resources to properly and sustainably nurture young stands of trees. At the same time identified the need to increase biodiversity in private forests. The answer to these problems is to support owners of newly established forests and land afforested through natural succession natural succession by paying them care premiums, which contribute to strengthening the sustainability and resilience of resilience of young forests by compensating for the costs associated with their care, as well as ensure the protection and permanence of naturally created afforestation. In addition to afforested agricultural land, afforestation premiums will be paid for 12 years to compensate for lost income from agricultural activity. Afforestation premiums for 5 years will also be granted to land afforested as a result of natural succession, as compensation for income lost as a result of the commitment made. In this way, in the long term, the protection of forests and ecosystem services in private forests.

Portugal (Júlio Moreira)

According to the Constitution of the Portuguese Republic in its Article 66.2.c and 'd', it is the duty of the State, with the participation of the citizens, to protect the fundamental natural values through the creation and classification of spaces, and to promote the rational use of natural resources safeguarding their capacity for renewal and ecological stability, with respect for the principle of solidarity between generations. This constitutional provision is, in some way, the roots of the legal basis of ecosystem services legislation in Portugal.

Nevertheless, the Convention on Biological Diversity (CBD) of 1992 gave ecosystem services legal status. Therefore, according Articles 6º, 'b' and 8º, 'd', each party shall integrate the conservation and sustainable use of biological diversity in plans, programmes and sectoral or cross-sectoral policies (principle of integration), and

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,as far as possible, promote the protection of ecosystems and natural habitats, respectively. Moreover, as above, Parties shall, as far as possible, adopt measures that are economically and socially appropriate, and that act as incentives for the conservation and sustainable use of biological diversity components (Article 11 of CBD).

The Legal Framework for Nature Conservation and Biodiversity – Decree-Law No 142/2008, of 24th July, envisages, *inter alia*, the adequate payment of the services provided by nature conservation and its systems either through the application of fees, particularly for access and visits to areas integrated in the National System of Classified Areas that belong to the State, and are under the national authority's management, or through direct payment for goods and services provided However, the achievement of the goals set out in this Decree-Law requires the involvement, participation and responsibility of the whole of society in the allocation of the financial and material resources that make them feasible.

Along these lines, the Legal Framework for Nature Conservation and Biodiversity defines ecosystem services in its Article 3.q, as following: the benefits that people obtain directly or indirectly from ecosystems, distinguished by**:**

i) ‘Production services', understood as the goods produced or provided by ecosystems, namely food, fresh water, firewood, fibre, biochemicals or genetic resources, among others;

ii) ‘Regulatory services', understood as the benefits obtained from regulation of ecosystem processes, namely the regulation of climate, disease, floods or detoxification, among others;

iii) ‘Cultural services', understood as the non-material benefits obtained from ecosystems, notably at the spiritual, recreational, aesthetic or educational level, among others;

iv) ‘Supporting services', understood as those services necessary for the production of all other services such as soil formation, nutrient cycles or raw materials productivity, among others.

In accordance with constitutional provisions (Article 66.2.c, aforementioned), Article 12 of the Legal Framework for Nature Conservation and Biodiversity, states that the classification of a protected area aims to grant it a legal protection status, appropriate for

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the maintenance of biodiversity and ecosystem services and geological heritage, as well as for landscape valorisation.

Besides the legal provisions of ecosystem services conferred by Decree-Law No 142/2008 – Legal Framework for Nature Conservation and Biodiversity, Portuguese legislation addresses this issue, directly and indirectly in several other laws. In this regard, Portuguese Decree-Law No 147/2008, of 29th July, establishes the legal framework for liability for environmental damage and transposes into national law, the Directive 2004/35/CE, of the European Parliament and of the Council, of 21st April, on environmental liability with regard to the prevention and remedying of environmental damage, defines in Article 11 the following:

j – 'baseline condition' means the condition at the time of the damage of the natural resources and services that would have existed had the environmental damage not occurred, estimated on the basis of the best information available;

n – 'remedial measures' means any action, or combination of actions, including mitigating or interim measures to restore, rehabilitate or replace damaged natural resources and/or impaired services, or to provide an equivalent alternative to those resources or services as foreseen in Annex V of this Decree-Law[358];

p – 'recovery', including 'natural recovery', means, in the case of water, protected species and natural habitats the return of damaged natural resources and/or impaired services to baseline condition and in the case of land damage, the elimination of any significant risk of adversely affecting human health;

q – 'services' and 'natural resources services' mean the functions performed by a natural resource for the benefit of another natural resource or the public.

These definitions are complementary to those prescribed in *section 6.1*, and are directly and indirectly related to ecosystem services.

Furthermore, Articles 14 and 15 of Decree-Law No 147/2008, addresses preventive and remedial measures, highlighting the following:

–Article 14.3 – The measures for preventing damage or preventing new damage are determined in accordance with the criteria of annex V – items 1.3.1, 'a' to 'f'.[359]

–Article 15.1.b – Take immediately and without the need for prior notification or administrative action all feasible measures to immediately control, contain, remove or

[358] See: Annex V, No 1 and 2.

[359] Ibidem.

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manage the pollutants involved and any other harmful factors in order to limit or prevent further environmental damage, adverse effects on human health, or further damage to services.

Along these lines, the Environment Policy Framework Law No 19/2014, of 14th April (updated version), has as one of its goals, the enforcement of environmental rights through the promotion of sustainable development, supported by adequate management of the environment in particular of ecosystems and natural resources, contributing to the development of a low-carbon society and a "green economy", rational and efficient in the utilization of natural resources, which ensures the well-being and the progressive improvement of citizens' quality of life (Article 2.1).

Moreover, the Law No 19/2014, in its Article 10, emphasizes that the environment policy has for its subject matter the natural environmental components, such as air, water and sea, biodiversity, soil and the underground-soil, the landscape, and recognizes and values the importance of natural resources and ecosystem goods and services.

And yet, the Environment Policy Framework Law in terms of economic and financial tools, highlights in Article 17.1.c: the instruments that ensure the adequate payment of the services, provided by the environment and by the public entities in charge of the environment policy which may imply the charging of fees, prices or tariffs in order to promote the rational and efficient use of environmental resources.

The Decree-Law No 166/2008, of 12th August, concerning the National Ecological Reserve – REN (Portuguese acronym), in its Article 2.3.a, has as one of its goals, to protect the natural resources water and soil, as well as to safeguard biophysical systems and processes associated with the coast and the hydrological-terrestrial cycle, which ensure environmental goods and services, that are essential for the development of human activities.

Regarding the economic-financial regime, the Act on the National Ecological Reserve establishes that the rules for the application of public funding programmes shall positively discriminate actions that contribute to the sustainable management of the REN areas. Consequently, public or private projects that contribute to the sustainable management of the REN areas may be financed by the Environmental Fund, especially those relevant to the safeguarding and integrated management of water resources,

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biodiversity, soil protection and the prevention or mitigation of associated risks (Articles 32 and 33, respectively).[360]

Portuguese legislation establishes the articulation of legal regimes for the coverage of ecosystem services in several specific legal diplomas, as is the case of Article 3 of the National Ecological Reserve – Decree-Law No 166/2008, which is articulated with the strategic and normative framework set out in the National Programme for Land Use Planning Policy, in regional land use planning programmes and in relevant sectoral and special programmes; it also contributes to the sustainable use of water resources in coherence and complementarity with the planning tools, and the protection and valorisation measures, under the provisions of Article 17 of the Water Law enacted by Law No 58/2005, of 29th December; and yet, it is one of the components of the Fundamental Network for Nature Conservation, favouring connectivity between the core areas of nature conservation and biodiversity, integrated in the National System of Classified Areas.

The Environment Framework Law No 19/2014, strengthened this coordination, highlighting that the cross-cutting nature of environmental policy imposes its consideration in all areas of economic, social and cultural life, and requires its articulation and integration with other sectoral policies, focusing on the promotion of coherent and complementary relationships (Article 13.1).

In the National Agricultural Reserve Legal Regime – RAN (Portuguese acronym), Decree-Law No 73/2009, of 31 March,[361] we underline some of the goals set out in Article 4: (a) protecting the soil resource, a fundamental element of the land as a support for the development of agricultural activity; (d) contributing to the preservation of natural resources; (g) adopting precautionary management measures that take into account the need to prevent situations that are deemed unacceptable, for the perennity of the "soil" resource.

The RAN Act is articulated with the strategic and normative framework established in the Rural Development Programme, the National Programme for Land Use Planning

[360] See more: Annex I of Decree-Law No 166/2008, of 12 August, concerning the National Ecological Reserve.

[361] The RAN is the set of areas that in agro-climatic, geomorphological and pedological terms are most suitable for agricultural activity (Article 2, No 1).

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Policy, the National Forestry Strategy, the sectoral programmes with territorial incidence, and the regional programmes (Article 5. 1).

Meanwhile, Law No 58/2005, of 29 December – Water Law, has in its wording some provisions related to ecosystem services, among which we underline some points of Article 28.3 – The National Water Plan shall comprise the following themes: (a) water and ecosystem services; (c) water and agriculture; (d) water and forests.

Another example is the Forestry Policy Framework Law No 33/96, of 17th August (updated version), which defines in Article 2 the following as general principles of forestry policy: No 1, 'c' – forest resources and associated natural systems shall be managed in a sustainable way to meet the needs of present and future generations within an integrated rural development framework; No 3 – the State is responsible for defining the regulations regarding the use of natural resources, in harmony and with the direct participation of all the entities that produce and use forest goods and services, and associated natural systems.

A project entitled New Policy for the Provision and Payment of Ecosystem Services in Rural Spaces in Portugal – the Problem, Policy and Implementation[362], published in September 2019, prepared a study for the development of the new policy for the provision and payment of ecosystem services in rural areas, which is materialised for forest and agroforestry areas through the Payment for Ecosystem Services in Forest and Agroforestry Areas Tool (RSE_AF – Portuguese acronym). The design of this tool is based on six fundamental orientations:[363]

a. There is a need to recognise the value, promote the provisioning of and pay for ecosystem services that are not valued, or are insufficiently valued, by markets;

b. Through long-term contracts;

c. With payments that stimulate change;

d. Promoting cooperation between land-owners/managers of neighbouring rural properties;

[362] *See more*: Rui Ferreira dos Santos, Paula Antunes, Carlos Rio Carvalho, Alexandra Aragão, *Nova Política para a Provisão e Remuneração de Serviços dos Ecossistemas em Espaços Rurais – o Problema, a Política e a Implementação. CENSE – Centro de Investigação em Ambiente e Sustentabilidade, FCT Universidade NOVA de Lisboa e Faculdade de Direito da Universidade de Coimbra. Fundo Ambiental, Ministério do Ambiente e Transição Energética* (Lisboa 2019) 45.

[363] Ibidem, 6.

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e. Innovating in relation to existing tools, namely through direct payment for the provision of ecosystem services and the introduction of territorial competition mechanisms, and;

f. Ensuring that the state defines the priorities for the choice of areas to be valorised, in accordance with the aims of environmental policy and other sectoral policies.

The implementation of the project was designed by the Resolution of the Council of Ministers No 121/2019, of 30th July, which approved the first phase of the Programme for Payment of Ecosystem Services in Rural Spaces. According to the Environmental Fund Notice No 13655/2019 (call for tenders)[364], the First Phase of the Programme aimed to develop, between 2019 and 2038 (ongoing project), a model for the payment for the services provided by ecosystems through the adoption of measures to restore, value and protect biodiversity, in two protected areas – the Hill of Açor Protected Landscape and the Tagus International Natural Park.

The new policy on payments for ecosystem services in rural áreas, is based on recognition of the many important contributions that these spaces can provide to the welfare of society, in a long-term perspective which are not valued by the market such as erosion control, carbon storage, regulation of the hydrological cycle, conservation of biodiversity, reducing susceptibility to fire, and improving landscape quality.[365]

Another example is the operationalisation of the offsetting compensation mechanism foreseen in the Legal Regime applicable to Arborisation and Rearborisation actions – Decree-Law No 96/2013, of 19 July, and its subsequent amendments. To this end, Article 3-B.1, states that for the purposes of item 'c', of paragraph 5 of the previous Article, compensation projects shall contemplate the commitment to invest in areas that guarantee agricultural or ranching use, or with rearborisation with native species in the case of forest use.[366]

Thus, ecosystem services are apparently seen as a legal duty of the Portuguese State. However, despite the articulation and interconnection of Portuguese legislation on this

[364] *See more*: Fundo Ambiental – Aviso No 13655/2019, 1.ª Fase do Programa de Remuneração dos Serviços dos Ecossistemas em Espaços Rurais Paisagem Protegida da Serra do Açor e Parque Natural do Tejo Internacional.

[365] Ibidem, 86.

[366] *See more*: Decreto-Lei No 96/2013, de 19 de Julho - Estabelece o regime jurídico a que estão sujeitas, no território continental, as ações de arborização e rearborização com recurso a espécies florestais.

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issue, since the end of the first decade of this century there are still few concrete actions being implemented.

Slovakia (Martin Prčík)

Act No 543/2002 Coll. on Nature and Landscape Protection already in its introductory provision in § 1 (Subject of the Act) regulates the competence of state administration bodies and municipalities, as well as the rights and obligations of legal persons and natural persons in the protection of nature and landscape in order to ensure the maintenance of natural balance and the protection of the diversity of conditions and forms of life, natural values and beauty, and to create conditions for the sustainable use of natural resources and the provision of ecosystem services, taking into account economic, social and cultural needs, as well as regional and local circumstances.

It follows from the above that economic prosperity and the quality of life of the population are conditioned by the existence of natural capital, such as biodiversity and ecosystems that provide important goods and services to humanity. The mapping of ecosystem services (ES) is crucial to understand how ecosystems contribute to the quality of human life and to support the argumentation of multisectoral policies that have a major impact on natural resources and their use.[367] An ecosystem can be defined as a dynamic complex of community and plants, animals, micro-organisms and their non-living environment forming a jointly functional unit. An ecosystem approach is a strategy for integrated land, water and biota management that promotes their conservation and sustainable use.[368]

In the field of strengthening the need for ES evaluation, a global commitment in the field of biodiversity protection – the *Convention on Biological Diversity* (CBD), including the Aichi Biodiversity Targets was adopted in 2010 in Japan (Nagoya). One of the strategic objectives is to define the need to increase the benefits of biodiversity and ecosystem services for all. The EU Biodiversity Strategy has imposed ES commitments on Member States by 2020 – to process the assessment of ecosystems and

[367] Benjamin Burkhard, Joachim Maes (eds), *Mapping Ecosystem Services* (Pensoft Publishers Sofia 2017) 374.

[368] MEA, *Millennium Ecosystem Assessment. Ecosystems and Human Well-Being: A Framework for Assessment. Report of the Conceptual Framework Working Group of the Millennium Ecosystem Assessment* (Washington, DC: Island Press 2005) <http://pdf.wri.org/ecosystems_human_wellbeing.pdf> 266.

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their services at national level, to integrate it into the reporting system and to implement it in their national policies.

To support the implementation of the 2020 Strategy, the EC set up a *Mapping and Assessment of Ecosystems and their Services (MAES*) Expert Group in 2013. Slovakia, according to the results of the 2019 MAES meeting, reaches only 20%, on average the level of commitments at EU level is 70%. In Slovakia there are partial studies, implementation of basic concepts into legislation and establishment of the MAES working group at national level. There is no national ES assessment, ES valuation and implementation of the ES concept in the form of ecosystem accounting. In 2019, the SNP SR together with the UCF in Nitra and the Institute of Landscape Ecology of SAS issued the Catalogue of Ecosystem Services of Slovakia[369], which represents the list of the most relevant ES for the territory of Slovakia and the assessment of the country's capacity for their provision. In parallel, a detailed ecosystem map of Slovakia was prepared. [370] Together, these publications provide an important framework of information sources for the implementation of MAES objectives at national level.

Currently, three ES international classifications are the most used:

1) Millennium Ecosystem Assessment: production ES (categories: food; fresh water; fibre and wood; genetic resources; biochemicals and natural medicine; ornamental resources), regulatory and support ES (categories: air quality regulation; water treatment and waste management; regulation of natural risks; regulation of water; regulation of erosion; regulation of climate; land creation (support service); pollination; biodiversity; the spread of diseases and pests; nutrient cycle, photosynthesis and primary production), cultural ES (categories: recreation and ecotourism; aesthetic values; cultural diversity; spiritual and religious values; cognitive system and educational values);[371]

[369] Peter Mederly, Jan Černecký et al.,*Katalóg ekosystémových služieb Slovenska*. Banská Bystrica: ŠOP SR, UKF v Nitre 2019, ÚKE SAV <http://www.sopsr.sk/natura/dokumenty/Katalog-ES.pdf> 215.

[370] Jan Černecký et al. 'Ecosystems in Slovakia' (2019) Vol 16, 2 *Journal of Maps* 28–35.

[371] MEA, *Millennium Ecosystem Assessment. Ecosystems and Human Well-Being: A Framework for Assessment. Report of the Conceptual Framework Working Group of the Millennium Ecosystem Assessment* (Washington, DC: Island Press 2005) <http://pdf.wri.org/ecosystems_human_wellbeing.pdf> 266.

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2) Economics of Ecosystems and Biodiversity: production ES (categories: food; water; raw materials; genetic resources; pharmaceutical resources; ornamental resources), regulatory and support ES (categories: air purification; treatment of waste; mitigating extreme phenomena; regulation of water flows; prevention of erosion; regulation of climate; promotion of soil fertility; pollination; promotion of life cycles (nesting); protection of the gene pool; biological control), cultural ES (categories: recreation and ecotourism; aesthetic information; inspiration for culture and art; spiritual experiences; information for knowledge);[372]

3) Common International Classification of Ecosystem Services: production ES (categories: biomass for food; surface and groundwater for drinking and other purposes; useful biomass; genetic resources of biotic origin; genetic material for biochemical and pharmaceutical processes; material of biotic origin; biomass – energy sources of plant and animal origin; abiotic resources), regulatory and support ES (categories: regulation of gaseous and air flows, regulation of wastes, toxic substances and other pollutants; aerial and liquid and solid flows; atmosphere composition and global climate regulation; support of soil formation and composition; support of life cycles, including pollination; support of live cycles and habitats, protection of the gene pool; support of disease and pest control), cultural ES (categories: physical and experiential relationships; representative relationships (promotion, art); spiritual and symbolic relations – cultural heritage; intellectual relationships (willingness to protect nature, moral aspects).[373]

On the example of the above classifications and their categories, we perceive how the importance and perception of individual aspects of the relationship of the ecosystem and its service to the public in Slovakia change.

The methods for assessing ecosystem services in Slovakia can be summarised into three basic groups according to the main principle of evaluation and expression of results:

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[372] TEEB, *The Economics of Ecosystems and Biodiversity Ecological and Economic Foundations* (Earthscan, London and Washington 2010) 422.

[373] CICES, *Common International Classification of Ecosystem Services. Biodiversity Information system for Europe* (2018) <http://biodiversity.europa.eu/maes/common-international-classification-ofecosystem-services-cices-classification-version-4.3.> accessed 20 June 2019>.

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1) Biophysical methods: *Ecological Footprint*; analysis of *Land Cover Flow*; *Material Flow Analysis*; *Life Cycle Analysis*; *Energy/Exergy Methods;*[374]

2) Non-monetary/sociocultural methods: *Preference assessment*; *Time use methods*; *Photo-elicitation survey*; *Narrative methods*; *Participatory mapping*; *Scenario planning*; *Deliberative methods*);[375]

3) Monetary/economic methods: in this case, it is a matter of defining ecosystem services as services outside the market which are considered to be non-marketable public benefits.[376]

Within the framework of the project *"TD010066 Integrated Evaluation of Ecosystem Services in the CR*" the Czech Republic has developed a comprehensive database containing a total of 121 pieces of data on the economic value of the ES and published the overview of basic values. On the basis of these findings, average values expressed in euro.ha $^{-1}$.year^{-1} have been produced and serve as a basis for the economic assessment of the ES in Slovakia:

1) Supply es: biomass production (421,39); fish production (107,54); production of wild game (9,91); non-forest products (57,23); production of wood mass (6912,09); water production (32,43);

2) Regulatory es: air quality regulation (266,33); climate regulation (4015,78); disaster control (8456,19); regulation of erosion (5766,57); nutrient regulation (200,10); pest control (7,31); pollination (1378,76); control of water outflow (1373,14); water quality regulation (1210,67);

3) Cultural es: aesthetic value (5971,94); recreation (2190,52).[377]

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[374] Mederly, P., *cit.*

[375] Eszter Kelemen, et al. 'Non-monetary techniques for the valuation of ecosystem service' In Marion Potschin, Kurt Jax (eds): OpenNESS Ecosystem Services Reference Book (2016) <https://www.guidetoes.eu/synthesispapers/OpenNESS_SP6_Non-monetary_Valuation.pdf> accessed 28 November 2022; Kai M A Chan, et al. Where are Cultural and Social in Ecosystem Services? A Framework for Constructive Engagement (2012) Vol 62 No 8 *BioScience* 744–756; Fernando Santos-Marín, et al. 'Spanish National Ecosystem Assessment: Socio-economic valuation of ecosystem services in Spain. Synthesis of key findings' (Madrid Spain 2016) *Biodiversity Foundation of the Spanish Ministry of Agriculture, Food and Environment* 68).

[376] Rudolf de Groot, et al. 'Global estimates of the value of ecosystems and their services in monetary units' (2012). Vol 1 No 1 *Ecosystem Services* 150-161.

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In Slovakia, detailed monitoring of the state of habitats and species of European importance was carried out in 2013-2015 at more than 10,000 permanent monitoring sites – TML. The results of this monitoring are used for those ecosystems at the local level where TMLs are located and their favourable status is evaluated Monitoring data also serve as a basis for generalised assessment in the framework of the report under Article 17 of the Habitats Directive.[378]

The comprehensive ES assessment in the Slovak Republic contributes to the fulfilment of international requirements for ES evaluation resulting from various commitments, including targets set for the protection of biodiversity.[379] The prepared map of ecosystems separates individual landscape elements, thus providing a certain overview of the habitats in Slovakia. The ecosystem map also provides an excellent starting point for local assessment, and with the following clarification it is possible to achieve very detailed results. On the basis of the ecosystem map and the prepared modified potential and production matrix, individual ES habitats can be assigned to each ES habitat, defined both spatially and qualitatively.

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[377] Jana Frélichová, et al. 'Integrated assessment of ecosystem services in the Czech Republic' (2014) Vol 8 No 8 *Ecosystem Services* 110–117.

[378] Viera Šefferová Stanová, et al. *Monitoring of plants and habitats of Community interest in the Slovak Republic, Results and assessment in the period of 2013 – 2015* (Banská Bystrica: DAPHNE, SNC SR. 300. 2015). Milan Janák, et al. *Monitoring of animal species of Community interest in the Slovak Republic, Results and assessment in the period of* 2013-2015. State nature conservancy of the Slovak Republic (Banská Bystrica: DAPHNE, SNC SR. 2015).

[379] Jan Černecký, J., et al., *Hodnota ekosystémov a ich služieb na Slovensku* (Banská Bystrica: ŠOP SR 2020).

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CONCLUSIONS (*Izabela Lipińska*)

EU agri-environmental laws are constantly changing. They arise from the changing CAP, including international commitments. It is undoubtedly emerging in response to changing environmental conditions, including resilience to climate change. At present, a very high priority is given to promoting and improving environmental protection and climate action and contributing to the EU's environmental and climate goals. Accordingly, the CAP aims both to reduce negative environmental and climate impacts, including on biodiversity, and to increase the provision of environmental public goods. For this reason, the current policy contains elements that support or otherwise stimulate a wide range of actions to achieve specific goals in agriculture.

The CAP required each member state to adopt national strategies. Thus, they were required to develop national plans on the basis of objective conditions, based on the SWOT analysis carried out. These were accompanied by the development of specific interventions that would achieve the adopted goals, while being tailored to specific national and regional conditions. Due to the fact that the strategic plans adopted in each country differ from each other, some analysis was made of the solutions adopted for the selected instruments. National legal solutions related to the use of pesticides, antibiotics, water conservation, organic farming and ecoschemes were examined.

As far as the use of pesticides is concerned, Italian law regulates the authorization process for plant protection products, specifying the use of these products, as well as specific requirements for producers, sellers and users. The Italian legislature applies the precautionary principle in regulating the use of plant protection products at the national level, with harmonization measures for the evaluation and marketing of active substances and mixtures, as well as maximum residue levels. Italian legislation addresses two areas – i.e., establishing an authorization procedure for plant protection products and defining national measures for their sustainable use.

Through the normative solutions adopted, it indicates the need to implement sustainable defense strategies, such as integrated phytosanitary defense strategies and rational management of agronomic practices, which should be accompanied by ecological methods of pest control.

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In Poland, the use of plant protection products is regulated by the Law on Plant Protection Products, which requires farmers to keep records of treatments with plant protection products and to continuously improve their skills in using them. According to EU regulations, Polish farmers must follow the principles of integrated pest management. The principle is to use all available methods and techniques, especially non-chemical ones. In addition, farmers are required to follow the Code of Good Agricultural Practice, as well as the Good Plant Protection Practice. Only plant protection products authorized for marketing and use on the basis of permits or parallel trade permits issued by the Minister of Agriculture and Rural Development may be used to protect crops.

In Portugal, on the other hand, the use of pesticides is part of a broader legal framework for the sustainable use of plant protection products (phytopharmaceuticals), and the Portuguese legislature establishes specific legal rules for the use of such products. Within this framework, the legal protection rules distinguish between the use of plant protection products authorized for professional and non-professional use. Portuguese law provides for certain sanctions and fines for the improper use of pesticides, their storage and non-compliant marketing.

Currently in Slovakia, there are restrictions on the use of pesticides in certain cases, such as for non-professional users, in forestry, on public land, for water conservation, in protected areas, and restrictions to protect bees.

Taking into consideration the current situation concerning pesticides, it would be recommendable for the European Commission to check that the Member States convert the general principles of integrated pest management into practical criteria and that they verify them at farm level, allowing them to be linked to payments under the common agricultural policy in the post 2023 period. Moreover, it shall be advisable to improve statistics on PPPs when revising the legislation to make them more accessible, useful and comparable; and to assess the progress made towards policy objectives, improve the harmonised risk indicators, or develop new ones, taking account of the use of PPPs.

As for the use of antibiotics in animal production, it should be noted that both EU and national regulations clearly define the permissibility of their use and only in enumeratively indicated situations, outside of which their use is prohibited. Issues

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related to their use cover a very broad legislative matter, which is due to the implementation of the many purposes for which the individual standards were established. Antibiotics are veterinary drugs, so they cannot be used for purposes other than therapeutic. The legislator excludes their role as means of improving production efficiency or compensating for inappropriate animal husbandry methods. Their use should only be possible if fully justified by a veterinarian. The use of antibiotics without veterinary justification opposes the requirements of good stewardship and human and animal safety, hence the need for proper administrative control of their use in each of the countries studied.

In Italy, several measures have been adopted to implement the national policy on antibiotic use. These are expressed, for example, in the guidelines that have been developed, a manual that provides an in-depth look at issues related to problems arising from the inappropriate use of antimicrobials in the livestock sector and establishes general principles for their responsible use. In addition, a national action plan on antimicrobial resistance has been formulated.

The Italian legislature is influencing the use of antibiotics by establishing binding rules on various aspects, such as registration and pharmacovigilance. Current policies play a key role in the national regulatory space for antibiotics: they provide guidelines, data and information to all actors (both public and private) involved in the field. Their role would be even clearer and more useful if they were updated to the current legal framework and national situation.

In Polish law, issues related to the use of antibiotics are regulated from the side of food safety, procurement of animal products, health protection and control of infectious diseases in animals, as well as by feed and pharmaceutical law. There is no single piece of legislation that has a comprehensive impact. Existing legal standards reflect policies adopted at the EU level for their limited use. A certain control instrument imposed on the veterinarian is the keeping of records for each transaction of prescription veterinary medicinal products, and the Veterinary Inspectorate plays an important role in the use of antibiotics in animal production.

Portugal does not have a specific law on the use of antibiotics in agriculture. In this case, the legislation on plant protection products applies. Accordingly, the use of any

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substance in agriculture must be approved by the Directorate General of Agriculture. Existing regulations are generally aimed at marketing and reducing the risks associated with the handling and use of plant protection products. At the national level, the obligation to place antibiotics on the market is subject to special authorization. Failure to comply with rules related to the use of products such as antibiotics, in Portuguese law, gives rise to administrative offenses.

At the national level in Slovakia, the basic legal act that regulates the use of antibiotics is the Act on the Production, Marketing and Use of Feed (Feed Act). It defines the rights and obligations of natural and legal persons preparing and marketing medicated feeds. Medicated feeds may be prepared only by producers with premises and conditions approved for this activity by the Institute for Veterinary Medicine Control and subject to veterinary supervision. Control of the preparation of medicated feeds and control of medicated feeds during their preparation shall be carried out by the Institute for Veterinary Medicine Control in cooperation with the competent provincial veterinary and food administration.

Water regulation is one of the oldest, largely developed and progressive areas of European Union policy. Historically, the legislature has always had to deal with the issue of "water quality" and its protection.

In Italy, there is a rather special regulation for water conservation. The water resources legislation (the Galli Law) has stipulated the need for a water cycle analysis and thus an underlying integrated water service. In 2006, two classes of "quality objectives" were defined that must be provided for significant water bodies: The "purpose-specific" quality objective determines the status of water bodies suitable for a specific use, and the "environmental quality" objective is defined according to the ability of water bodies to maintain their natural self-purification processes and to support large and well-diversified animal and plant communities. With this provision, the entire national territory, including smaller islands, has been divided into hydrographic districts. They are a cognitive, regulatory and technical-operational instrument through which activities and use rules are planned and programmed for the preservation, defense and valorization of the soil and the proper use of water.

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The issue of water protection in Poland include primarily instruments of a stimulative nature and are financed from the resources of the European Union. National Strategic Plans may be more important in the issue of water protection than the previous assumptions of the Common Agricultural Policy. Implementation of the Green Deal Strategy will depend on the prepared solutions of a statutory nature, the level of their financing and the interest of the beneficiaries themselves. Water protection in the process of agricultural production is undoubtedly associated with the need for costly environmental investments. With regard to the situation of Polish agriculture – without the support of EU funds, water protection activities would certainly be severely limited The current legal regulation in Poland provides for various instruments of water protection but it is very scattered and often applies piecemeal to agricultural activities. The protection of water in the process of agricultural production requires a closer connection with the protection of soils and air. Too little attention is paid today to the problems of rational use of water in agricultural activities and counteracting the phenomenon of water wastage. The prescribed catalog of sanctions for water pollution and the poorly defined fees in the Act – Water Law, are insufficient for the proper implementation of the principle that "the polluter pays". It is necessary to maintain an appropriate balance between command-and-control instruments and those that serve to promote appropriate behavior. Only then water protection in Poland will be sufficiently effective in practice.

A National Water Plan is being implemented in Portugal. It covers many areas, such as ecosystem services; energy and climate change; agriculture; forestry; economy; etc. The specific rules of protection derive, among other things, from the 2018 Code of Good Practice based on which four-year action programs are established. The Regional Directorates for Environmental Protection and Natural Resources are responsible for controlling the adopted water protection tasks. Portugal's legal framework is aligned with the requirements set by the European Union.

In Slovakia, national legislation takes into account the requirements of several EU directives, and includes rules for surface and groundwater. The basis of the concept of quality of both waters is not to obtain categorically pure water, but rather water that is pure enough to allow good living conditions for aquatic organisms, and can provide its consumers with adequate quality.

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National legislation adopts the requirements of EU legislation in full. In fact, some of the requirements of national legislation are stricter than those of EU legislation, due to the fact that the stricter limits were introduced into Slovak legislation before the country joined the EU. The problem with national legislation is asserting and enforcing what is necessary in practice. Slovak law provides specific sanctions for water conservation. These include destruction of water quality or quantity and are established in several draft laws. The "polluter pays" principle is also included in Slovak laws that deal with environmental protection.

As for organic farming, it should be noted that it is significantly developed in Italy. According to the country's law, organic production should be understood as a comprehensive system of farm management and food production, based on the interaction of environmental best practices for the conservation of natural resources and climate action. Italian producers, by applying strict production standards, are helping to improve product quality, food safety, rural development, environmental protection, biodiversity conservation and the reduction of greenhouse gas emissions. Thus contributing to the goals of the 2030 Agenda for Sustainable Development.

To meet the requirements of organic production, measures have been introduced by law in 2022 to ensure greater transparency and protection of competition and consumers. Italian law supports research and training in organic farming, as well as the awarding of the Italian organic label. All activities carried out in this field are financed by a fund for the development of organic production. Organic production is carried out according to the national plan for organic production and organic products established by the Ministry of Agriculture. In summary, organic food production is considered an agricultural system that focuses on restoring the environment while promoting human and animal welfare.

On the territory of Poland, the development of organic farming is supported both by natural conditions and terrain, low environmental pollution, large resources, relatively low labor costs. No less important is the price competitiveness of Polish organic products on the European market. In terms of comparison, against the background of Western European countries, domestic organic farms are characterized by low consumption of mineral fertilizers and pesticides, which gives our agricultural

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production a more extensive character. Nevertheless, high production costs, the lack of a developed distribution network, the fragmentation of supply and demand, and the short shelf life of products require improvement. Poland's potential to date requires specific measures and initiatives. Here the policy of supporting the production and market of organic food, the use of export opportunities, combining organic production with the development of agro-tourism, the development of units integrating dispersed production, dealing with distribution, including producer groups, becomes important. At the same time, the progressive popularization of the benefits of purchasing and consuming organic products will also create an opportunity for a significant acceleration of rural development, which is undoubtedly a positive aspect.

The development of organic farming requires constant stimulation of entrepreneurial activities in agriculture. Organic production, despite lower yields compared to conventional systems, however, allows to obtain higher prices for agricultural products or subsidies for organic production. Characteristically, organic farming, despite being more expensive and demanding than conventional farming, can ultimately be more profitable. In turn, the system of support tools for organic farming should provide more incentives for producers of certified agricultural products to sell them on the organic market and support the promotion of such products. It should be added that the intensification of domestic entrepreneurship in organic farming could be assisted by investment solutions that are aware of the challenges and conditions in this sector. Such solutions would allow the introduction of private investment capital, e.g. through investment funds in the aspect of organic farming, as additional support beyond EU funds and the state budget, at the same time bridging regional differences in this important now and in the future plane.

In Portugal, on the other hand, the National Strategy for Organic Agriculture and the Action Plan for the Production and Promotion of Organic Products are currently being implemented, with the primary goal of encouraging the expansion of organic production areas in the country. In order to promote it, the "Organic Producer's Guide" was developed. It contains a set of rules for starting up, running production and managing an organic farm. An organic producer who meets the eligibility criteria can receive institutional support. The production in question is carried out under strict public control.

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It is worth noting that in 2017 the National Observatory for Organic Production was established in Portugal. Its peculiarity lies in the collection, processing and dissemination in a public portal dedicated to organic farming, of available information on the production, processing, marketing of organic products, including their consumption and the various existing markets.

In Slovakia, organic production is influenced by the Law of 2020. It stipulates, as in other Member States, the principles of organic agricultural production, the competences of state administrative bodies in this field; the rights and obligations of persons carrying out organic agricultural production; issues of keeping a public register, the performance of inspections, the labeling of organic products, and establishes sanctions for infractions and other administrative offenses.

Surveys conducted among the main addressees of the law showed that the level and quality of legislation in the field of organic farming is good and understandable. A drawback is still the high level of state bureaucracy concerning the business.

In broad terms, ecosystem services capture the contribution made by agriculture to the care of the environment and human well-being. As a concept, these services represent a coherent and holistic view of the relationship between the various elements of the ecosystem, including human activities, which better reflects the nature of the activities that should be supported by agricultural and environmental policies.

Ecosystems contribute essential services to the economy and society. These include the provision of food, filtration of air and water, pollination, climate regulation, protection against extreme weather events such as heat waves and flooding, and many more. The ability of ecosystems to supply these services depends on their extent (‘size’) and condition (‘health’). Despite the crucial role of ecosystems for our economy and society, there is no established and regular measurement of ecosystem condition or of the quantity of services they supply. Europe’s growing population and the increasing urbanisation and consumption are putting pressure on ecosystems and the services they provide. Therefore, the EU takes actions in order to change that trend, such as e. g. prioritising the protection of 30% of the EU land and sea area by 2030 and the restoration of degraded ecosystems as key policy initiatives of its EU Biodiversity Strategy for 2030.

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Analyzing the approaches of individual countries, one can see that Italian legislation recognizes four functional types of such services. These consist of provisioning, regulatory, cultural, and support services. At the same time, it treats them as complementary. The legislator is aiming at the widest possible development of green economy activities. At the same time, it transfers responsibility for the environment to local authorities, with constant monitoring of the implementation, effectiveness and efficiency of policies and activities carried out by authorized entities.

With regard to ecosystem services, it should be noted that Poland for a long time did not address the development of the concept of ecosystem services, including their practical application. The implementation of the EU strategy at the national level, and at the same time an element of the implementation of the Convention on Biological Diversity in Poland, was the Program for the Conservation and Sustainable Use of Biodiversity and the Action Plan for 2015-2020. In contrast, at present, the issue of ecosystem services has been taken up in the EU Biodiversity Strategy 2030, and at the national level in the National Ecological Policy 2030. Accordingly, one of the priorities of Polish policy is now the protection of natural heritage by taking measures to improve the state of biodiversity and more fully linking its protection with the socio-economic development of the country, including the improvement of the system of nature protection, preservation and restoration of natural habitats and populations of endangered species, maintenance and restoration of ecosystem functions that are a source of services for humans.

The issue of maintenance and restoration of ecosystem services will cover the entire country, and will be based on the assessment of the condition of ecosystems and their services. This requires developing a system for valuing ecosystem services and integrating these values into development strategies, the planning system, national accounting and reporting systems.

Issues related to the existence of ecosystems can be traced to the Portuguese Constitution, which stipulates that it is the duty of the state to protect fundamental natural values through the creation and classification of space, as well as to promote the rational use of natural resources while preserving their capacity for renewal and

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ecological stability, respecting the principle of intergenerational solidarity. This constitutional provision is, in a sense, the legal basis for ecosystem services legislation.

Thus, ecosystem services are seen as a legal obligation of the Portuguese state. However, despite the articulation and interconnectedness of Portuguese legislation on this issue, since the end of the first decade of this century, few concrete measures are still being implemented.

Issues related to the implementation of ecosystem services are expressed in the Slovak Act of 2002 on Nature and Landscape Protection. This act regulates the competences of the state administration and municipalities, as well as the rights and obligations of legal and natural persons in the field of nature and landscape protection in order to, among other things, provide ecosystem services. It has been argued that mapping ecosystem services is key to understanding how ecosystems contribute to the quality of human life, as well as to supporting multi-sectoral policy arguments that have a significant impact on natural resources and their use.

Comprehensive assessment of the services in question contributes to meeting international requirements for their assessment, arising from various obligations, including goals set for the protection of biodiversity. The prepared map of ecosystems isolates the various elements of the landscape, thus giving a certain overview of the habitats in Slovakia and thus formulating the space dedicated to legal protection.

The research conducted leads to the conclusion that the solutions adopted in selected Member States within the framework of agri-environmental law generally meet the expectations placed in them. Countries, based on a SWOT analysis, have adopted the instruments and legal measures that are most effective for them. Thus, the diversity of geographic and climatic conditions makes it impossible to formulate a uniform impact model for the analyzed measures resulting from the European Green Deal and CAP. However, the question of how effective they will be and how they will meet their agricultural and environmental goals will take some time to answer, as many of them are only in the process of implementation.

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