[D3.1 Report – Regulatory instruments]

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Task	T3.1 Assessment of policy incentives and instruments related to land-use decisions
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Revision and history chart

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ABSTRACT

The report provides a comprehensive analysis of policy instruments employed across European Union Member States to influence land-use decisions with a focus on climate change mitigation and biodiversity conservation. It categorizes and describes regulatory, economic, informational and voluntary as well as other instruments and incentives, highlighting their roles in promoting sustainable land management practices. Regulatory tools such as Local Spatial Development Plans are examined, emphasizing their contribution to land and forest protection by regulating land designation and use. Economic incentives like eco-schemes, subsidies for organic farming, and fees for land exclusion are discussed, demonstrating their significance in encouraging environmentally friendly agricultural practices. Voluntary instruments, including eco-labelling and certification programs, are also analysed for their role in raising ecological awareness among stakeholders.

The report evaluates these instruments based on criteria such as their impact on climate and biodiversity protection, impact on stakeholders, social participation and cross-sector approach. It underscores the role of tailored policies aligned with national contexts to achieve sustainable land use outcomes. Overall, the document highlights the multifaceted nature of land-use policy tools and emphasizes their critical role in addressing climate and biodiversity challenges within the agricultural and forestry sectors.

The conducted review of instruments and incentives may be used, on the one hand, to compare the existing national-level instruments with those implemented in other countries, and, on the other hand, to identify new solutions that have been successfully applied elsewhere. The evaluation criteria developed in this study will enable a comprehensive assessment of the impacts of their implementation, taking into account environmental, social, and economic dimensions.

One of the outcomes of the task is the development of a standard procedure for analysing policy instruments and incentives, which means a formal, structured and replicable methodology which were created to guide how relevant policies and incentive mechanisms are systematically identified, collected, and evaluated.

KEYWORDS

policy instruments and incentives, sustainable land-use, instruments classification, assessment criteria

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List of Abbreviations and Acronyms

AECMs	Agri-Environment-Climate Measures
CAP	Common Agriculture Policy
EGD	European Green Deal
FISE	Forest Information System for Europe
GAEC	Good Agricultural Conditions
LULUCF	Regulation on land use, land use change and forestry
TIAs	Territorial Impact Assessments

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Executive Summary

This Deliverable D3.1 of the Europe-LAND project provides a **comprehensive overview of policy instruments and incentives shaping land-use decisions** across the 12 partner countries represented in the frame of Europe-LAND, namely Germany, Greece, Estonia, Denmark, Portugal, Italy, Romania, Poland, Latvia, Slovakia, Austria and the Czeck Republic. It supports evidence-based policy design by enabling the identification, classification, and evaluation of land-use measures that influence climate change mitigation and biodiversity protection.

The report underscores the **strategic role of land use in achieving EU climate neutrality and biodiversity restoration** goals. It stresses that fragmented actions are insufficient without coherent regulatory, economic, and collaborative policy frameworks. Adopting the OECD classification (OECD, 2020), the study analyses four main types of instruments: regulatory, economic, informational and voluntary, and other collaborative mechanisms - forming a consistent basis for comparative evaluation.

Using a robust, multi-criteria framework, the **assessment examined instruments across agriculture, forestry, biodiversity, nature protection, and spatial planning**. Evaluation criteria included climate and biodiversity impacts, stakeholder engagement, social participation, and cross-sectoral integration, reflecting a comprehensive socio-ecological approach.

Selected representative instruments were analysed in depth, revealing **strong variation in how European countries balance regulation, incentives, and participation**. While regulatory tools proved effective in achieving compliance, they often lacked flexibility and local acceptance. Conversely, voluntary and partnership-based mechanisms - such as the Danish Green Tripartite Agreement and the European Network INTEGRATE - demonstrated higher legitimacy and adaptability, though their success depended on sustained political and institutional support.

Key success factors identified include:

- Cross-sectoral policy coherence between agriculture, forestry, climate, and biodiversity domains.
- Multi-level governance structures that connect local and national decision-making.
- Incentive-based mechanisms complementing regulation.
- Active involvement of landowners, municipalities, and civil society actors.

The findings highlight that **effective land-use transformation requires integrated policy mixes** combining regulation, incentives, and collaborative governance to ensure both environmental impact and social legitimacy. D3.1 thus provides a methodological foundation

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for future Europe-LAND work pursued in other work packages, feeding further tasks within WP3 as well as tasks in WP5 and WP6, i.e. guiding the co-creation of context-sensitive transition pathways and policy roadmaps.

The report is intended for decision-makers across different levels of government, with a particular focus on supporting regional and local decision-making. Stakeholders can use it to inform their processes and identify the most suitable combination of instruments and incentives for their specific contexts.

1. Introduction and Methodology

This study aimed to identify and analyse instruments influencing land-use decisions in 12 partner countries (Germany, Greece, Estonia, Denmark, Portugal, Italy, Romania, Poland, Latvia, Slovakia, Austria, Czechia), including the national transposition of the Common Agriculture Policy (CAP).

Land use has a significant impact on the greenhouse gas balance and biodiversity, which is why appropriate **political and economic incentives are essential for achieving climate and sustainable development goals**. Without systemic support, individual actions are usually insufficient to achieve the scale required by climate policy.

Policy instruments and incentives are key to managing land use and combating climate change, as they enable effective targeting of actions to reduce greenhouse gas emissions and promote sustainable practices in the land use sector.

Policy instruments and incentives allow countries to influence the decisions of landowners and users to reduce emissions and minimise negative impacts on the environment, and to encourage them to undertake actions aimed at generating a positive impact on climate change. Appropriate legal and financial/economic frameworks can promote the implementation of innovative and climate-resilient solutions, making it possible to increase the disincentives for harmful practices and promoting behaviours that are desirable from an environmental point of view.

The scope of the research included following steps:

1. Literature review (defining aim and scope of review, preparing review template, developing conclusions and recommendations for next analyses).
2. Search of policy documents (developing guidelines with criteria of searching documents, preparing list of documents for next analysis).

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3. Scrutiny of the policy incentives and instruments at the EU and national level (developing research methodology, preparing template for identification and description of instruments, conducting research in regard to policy incentives and instruments).
4. Define the assessment criteria of identified instruments for comparative analysis (defining assessment criteria, developing guidelines for assessment).
5. Comparative assessment of identified instruments (conducting analysis of instruments, preparing template for partial reports, preparing final report).

The steps of the study are presented in Figure 1. All research tasks were carried out in consultation and with the assistance of all project partners.

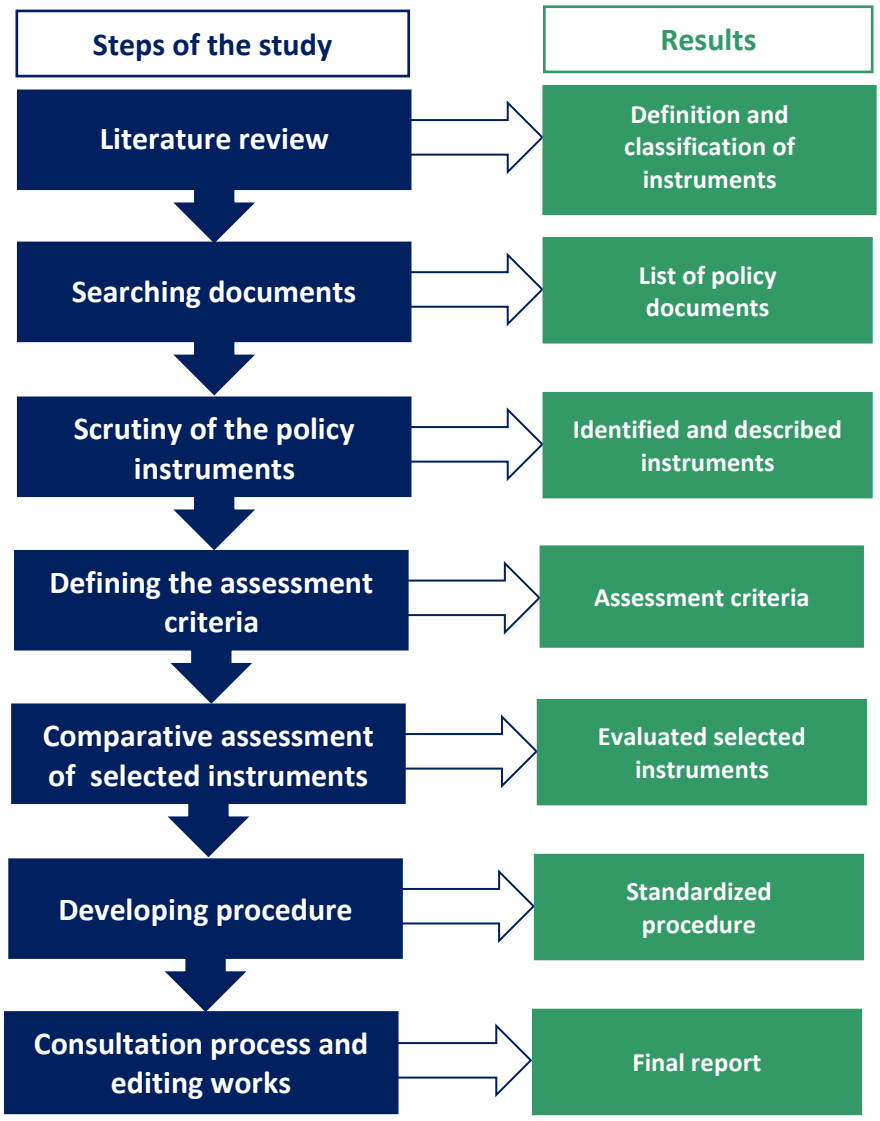

Figure 1. The main steps of the study
Source: own elaboration.

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The literature review on policy instrument in sustainable land-use was conducted using databases such as Elsevier, Springer, Wiley, EBSCO, Web of Science and Scopus**.** It includes: author, title, abstract, keywords, year of publication, access (URL), type of publication, main sector, country/region, reference documents, type of instruments, name of instruments, definition, classification, type of assessment/criteria, scale, recommendation for future analysis, and case study. In addition, the literature review contains keywords such as land-use instruments, instruments classification, land-use policy, criteria of instruments assessment, best practices of incentives related to land-use decisions and sectors: agriculture, forestry, protected areas and spatial planning. Ultimately, 30 publications (mainly scientific articles and reports) that met the above criteria were selected for literature analysis. The review allowed to define the concept of an instrument and provided various examples, such as forest management plan (Brukas & Sallnäs, 2012), forest certification (Rametsteiner & Simula, 2003), management plan (Thomas & Middleton, 2003), municipal plan (Mazzoleni, 2023). A crucial result of the literature review was also adopting a classification of instruments proposed in the OECD guidelines (OECD, 2020; SWD, 2013), which distinguished four basic types of instruments: regulatory (command-and-control), economic instruments, information and other voluntary instruments. For each group, particular types of instruments were assigned and described.

In the next step, guidelines for the policy documents search were prepared. It contained the definition of a policy document, the criteria for searching, as well as instructions for searching. Criteria of searching included type of document (strategic, implementation/operational), level of the document (European, national, regional), as well as sector to which the document applies (agriculture, forestry, biodiversity and nature protection, spatial planning/land-use, climate change and other). They are presented in Figure 2.

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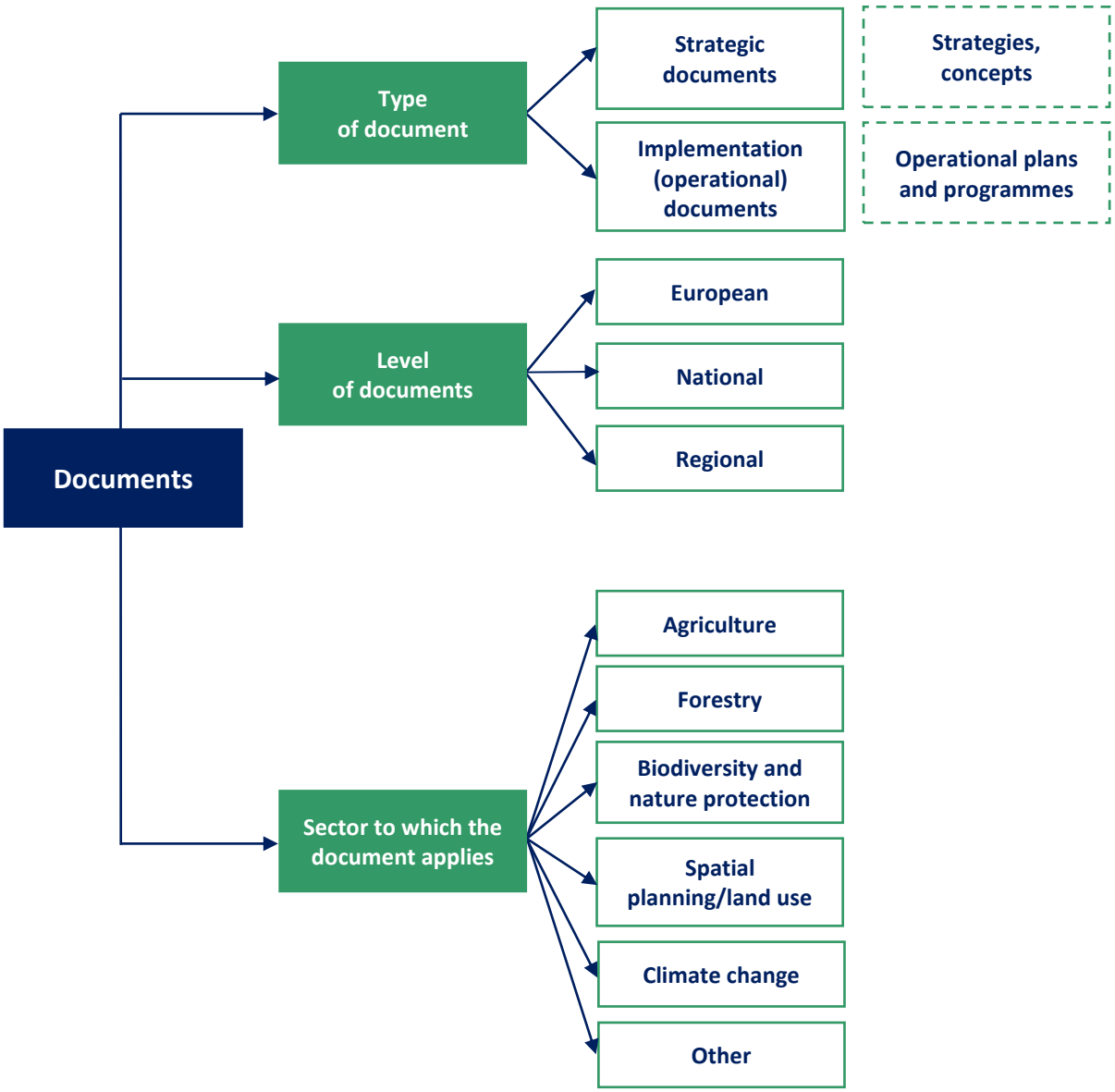

Figure 2. Criteria of policy documents searching
Source: own elaboration.

The guidelines were consulted with the WP3 Lead IGAR and the Project Leader HAW Hamburg. Then, project partners were asked to identify and briefly describe policy documents existing in their countries. As the result of this step of study, the database of 270 policy documents on national and regional level was developed. Policy documents from the European level were identified in the sister project PlusChange (PlusChange, 2025). Results of

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this study step served for the next stage of the study, namely for identifying policy instruments.

Instruments appearing in policy documents at both the European level and in individual partner countries were identified and then examined by partners in individual countries using a specifically for this purpose developed form capturing key *Characteristics of the instrument*. It should be noted that the project partners were asked to identify and characterise eight instruments in their countries. When selecting instruments for analysis, they were to be guided by their expert knowledge and their country's experience in applying a given instrument.

The identified instruments were assigned into four groups and then into subgroups:

1. Regulatory instruments:
   - Subgroup 1. Land use/spatial planning tools and requirements
   - Subgroup 2. Standards and controls on the overuse of agrochemicals and fertilisers in production
   - Subgroup 3. Restrictions or prohibitions on use
   - Subgroup 4. Management
2. Economic:
   - Subgroup 1. Price-based instruments
   - Subgroup 2. Payment for ecosystem services
   - Subgroup 3. Property rights and secure and tenure
3. Informational and other voluntary instruments
   - Subgroup 1. Ecolabelling and certification
   - Subgroup 2. Partnership instruments
   - Subgroup 3. Building ecological awareness
4. Other (development programmes, strategic frameworks, innovation pilots).

Selected instruments were evaluated according to five criteria: impact on climate change, impact on biodiversity, impact on stakeholders, social participation, and cross-sectoral approach.

Finally, procedures were proposed for decision-makers to select the instruments that would be most appropriate for the given regional or local conditions.

The report is part of the Europe-LAND project and is addressed to decision-makers at various levels of government, but especially for informing regional and local level decision-making. Stakeholders can use it in their decision-making processes to select the most appropriate set of instruments and incentives for their specific circumstances.

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2. Definition and functions of policy instruments

In the project, **policy instruments** are **defined as tools by which, directly or indirectly, state institutions and other organizational units can influence the behaviour** of enterprises, citizens including land users in order to derive a desirable behaviour from the point of view of the adopted policies (agriculture, forestry, biodiversity and nature protection, land-use, climate change) (Poskrobko, 2007).

Policy instruments can serve a variety of functions:

- incentive/stimulus role – encouraging entities to undertake various types of technical and organisational activities that reduce their harmful influence on the environment;
- income role – collecting and then redistributing funds that are used to finance environmental protection projects;
- fiscal role – impact on public budgets (replenishing or depleting) in connection with financing environmental protection needs;
- informational (and educational) – transmitting signals about significant environmental threats and the need for appropriate behaviour of entities.

For the project's purposes, we adopted the OECD general classification of instruments relevant to sustainable land use (OECD, 2020).

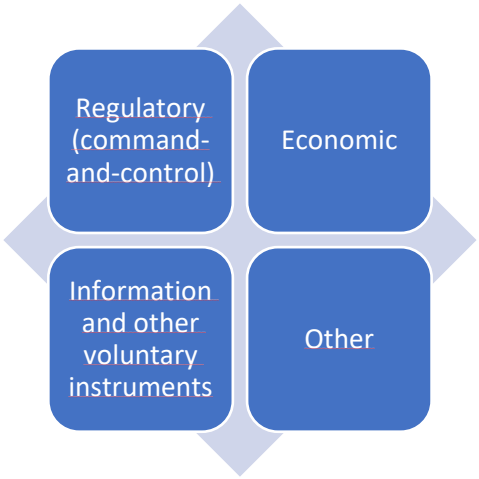

Figure 3. Classification of instruments for policy evaluation with reference to sustainable land use

Source: (OECD, 2020).

Regulatory instruments are restrictions on action or procedures established by the legislator. Their purpose is to regulate land-use and ensure environmental protection, having a direct impact on the behaviour of economic entities and citizens. Appropriate legal sanctions

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support the operation of these instruments. Some examples include local spatial development plans, moratoria on deforestation, protected areas management plans, etc.

Economic instruments set the incentive framework for land-use and aim to influence the decisions of individual actors by increasing or decreasing the costs of particular actions. The objective of economic instruments is also to encourage designated stakeholder groups to engage in activities aimed at sustainable land management. They complement or reinforce the action of regulatory instruments, but also provide an opportunity to minimise the social costs of environmental protection through decisions taken directly by economic operators. Some examples include tax on groundwater extraction, fees for excluding land from agricultural production, conservation payments, etc. Economic instruments and incentives motivate landowners to implement practices that are beneficial to the climate and the environment. They can support both environmental (reduction of deforestation, carbon sequestration) and socio-economic goals. Research suggests that price-based instruments (taxes and subsidies) are often more effective and easier to implement than quantity-based instruments (tradable permits), which can be overly complex (Ackerschott et al., 2023).

Information and other voluntary instruments: they include scientific research, improved access to and use of data and enhancing the transfer of knowledge to the stakeholders, and they are essential for improving land-use decisions. Some examples include organic agriculture labelling, voluntary agreements, ecological education, etc. Effective conservation requires decentralized, horizontal networks between local governments and civil society, as centralized systems often lead to conflict and policy failure (Degele, 2023).

The group of "Other instruments" includes all instruments that are not classified in the above-mentioned groups, related to trade measures, inclusive national planning or development assistance.

Based on the classification proposed by OECD in *Policy instruments relevant to sustainable land use* (OECD, 2020) and by EC in *Commission Staff Working Document: Guidelines on developing adaptation strategies* (SWD, 2013), the classification and types of instruments were adopted as presented in Table 1.

Table 1. Examples of instruments in each group based on the literature review

Group	Subgroup	Example of the instrument's name
Regulatory	Land use / spatial planning tools and requirements	• environmental impact assessment (EIA) • strategic environmental assessments (SEA) • local spatial development plan
	Rules and standards for water, soil quality and land management	• Voluntary Guidelines for Sustainable Soil Management (FAO, 2017)

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Group	Subgroup	Example of the instrument's name
	Standards and controls on the overuse of agrochemicals and fertilisers in production	• International Code of Conduct on the Distribution and Use of Pesticides Guidance on Pest and Pesticide Management Policy Development (FAO, 2010)
	Restrictions or prohibitions on use	• moratoria on deforestation • the establishment of protected areas
	Concessions for sustainable forest management	• forest concessions
	Management	• protected areas management plan • forest management plan • strategies, action plans, programmes
Economic	Price-based instruments	• tax on carbon • tax on groundwater extraction • tax on pesticide and fertiliser use • charges/fees • subsidies to promote biodiversity (e.g., target public investments in green technology)
	Reform of environmentally harmful subsidies	• decouple farm support from commodity production levels and prices
	Payment for ecosystem services (including REDD+) and agri-environment measures	• retirement of degraded cropland • subsidisation of conservation-friendly production practices • direct payments • eco-schemes • conservation payments
	Property rights and secure and tenure	• land purchase
	Liability instruments	• green bonds and sustainable bonds
	Non-compliance fines	• reduced or withheld agricultural payments in Europe • fines of up to 4% of turnover for breaches of EU deforestation regulations
	Tax credits	• Income Tax Reduction
Information and other voluntary instruments	Ecolabelling and certification	• organic agriculture labelling schemes • Geographical Indications Labels (GLs) • sustainable forest/timber certification
	Green public procurement	• contracting for eco-certified agricultural products
	Fiscal transfer schemes	• Brazil's Ecological ICMS (ICMS-E)
	Partnership instruments	• voluntary agreements • partnerships • collaborative projects

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Group	Subgroup	Example of the instrument's name
	R&D, e.g. to decouple GHG emissions and food production, biomass energy carbon capture and storage	• biomass energy with carbon capture and storage (BECCS) • biomass energy with carbon capture and storage (BECCS)
	Building ecological awareness	• ecological education and information • training activities • promotion, information and marketing of food produced under food quality schemes
Other	Trade measures	• lowering tariffs on climate-friendly and/or biodiversity-friendly products • reduce export subsidies
	Inclusive national planning, incorporating climate and biodiversity concerns, national and local governments, and non-party stakeholders	• the EU's Natura 2000 network • the United Nations Land Degradation Neutrality (LDN) initiative • REDD+ (Reducing Emissions from Deforestation and Forest Degradation)
	Development assistance	• financing sustainable forestry and agriculture • improving data collection and sharing

Source: own elaboration based on Policy instruments relevant to sustainable land use|Towards Sustainable Land Use: Aligning Biodiversity, Climate and Food Policies https://www.oecd.org/en/publications/towards-sustainable-land-use_3809b6a1-en/full-report.html; Commission Staff Working Document: Guidelines on developing adaptation strategies, SWD(2013) 134 final https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013SC0134

3. Review of instruments and incentives in the policy documents

The European policy documents listed in column 2 in Table 2 were taken from the sister Plus Change project (Plus Change, 2025), and within these documents, the authors of this report identified specific instruments relating to land use.

Table 2. Land-use instruments and incentives

No	European policy document	Identified land-use instruments and incentives
1.	Regulation on land use, land use change and forestry (LULUCF) (European Green Deal)	1. Calculation of Background Levels for Natural Disturbances: methodology for accounting natural disturbances affecting land use; an instrument to manage and quantify land-use impacts (Annexe VI)

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No	European policy document	Identified land-use instruments and incentives
	(Regulation, 2018)	2. National Forestry Accounting Plan Containing a Member State's Forest Reference Level: planning and setting reference levels for forests; a key land-use instrument (Annexe IV) 3. The Union Registry: records emissions, removals, and land-use activities; an instrument for land use and accounting
2.	The European Climate Law (Regulation, 2021c)	Land-use instruments are not mentioned directly. Implementing national policies and measures requires meeting climate and land management targets. A reporting and accounting framework is given for land management policies related to afforested land, managed forest land, cropland, wetlands, and grasslands.
3.	2030 Biodiversity Strategy (Communication, 2020b)	1. Natural capital accounting initiatives to assess and value ecosystem services. 2. Incorporation of biodiversity criteria in public procurement and legislation. 3. Development of standards and methods to describe biodiversity features for decision-making. 4. Use of EU frameworks and guidance for sustainable land management and spatial planning.
4.	EU Forest Strategy (Communication, 2021b)	1. Strategic Principles and Guidelines • The Cascading Principle - dictates the prioritized order of wood use: 1) wood-based products, 2) extending their service life, 3) re-use, 4) recycling, 5) bio-energy, and 6) disposal. It is crucial for optimizing the use of wood in line with circular economy principles. • Guidelines on Closer-to-Nature Forestry - seek multifunctional forests by combining biodiversity preservation, carbon stock preservation, and timber revenue. • Guidelines on biodiversity friendly afforestation and reforestation 2. Financial and Incentive Mechanisms • Payment schemes for ecosystem services (public and private) • Carbon Farming Initiative - aims to promote a new green business model that rewards land managers (including forest managers and owners) for climate- and environment-friendly practices that lead to carbon removals and storage.

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No	European policy document	Identified land-use instruments and incentives
		• Carbon Removals Certificates Framework - announced in the Circular Economy Action Plan, will be developed to certify carbon removals. Carbon certificates can be traded in markets, providing a source of income linked to results. • Eco-schemes on agroforestry or rural development interventions. • EU financial instruments (such as Cohesion Policy, LIFE, Horizon Europe, EU cross border cooperation programs - Interreg). 3. Initiatives, Schemes, and Programs • "Closer-to-nature" voluntary certification scheme - it will be developed to allow the most biodiversity-friendly management practices to benefit from an EU quality label. • Roadmap for planting at least 3 billion additional trees by 2030 - includes criteria for tree planting, counting, and monitoring, and is supplemented by a tree-counter and a dedicated platform for advice (e.g., MapMyTree website). • Renovation Wave Strategy and the New European Bauhaus initiative - promotes the increased use of long-lived wood products in construction, helping the sector become a carbon sink. • Pact for Skills - encourages forestry stakeholders to mobilize efforts for up- and re-skilling people for the forestry sector. 4. Monitoring, Data, and Support Tools • Forest Information System for Europe (FISE) - system will be enhanced to become the cornerstone for harmonized forest data in Europe. • EU Observatory on deforestation, forest degradation, changes in the world's forest cover, and associated drivers 5. Collaboration and Governance Structures • New Alliance between the professionals of tourism and foresters. • Network of forest-dominant rural areas and municipalities. • EU forest governance framework - an inclusive and better coordinated structure for policy coherence and exchange among Member States, owners, industry, academia, and civil society. 6. Promotion and Certification Tools • Natura 2000 logo - promoted for use on non-wood forest-based products and services.

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No	European policy document	Identified land-use instruments and incentives
		• Standards and norms for eco-tourism activities.
5.	Nature Restoration Law (Regulation, 2024b)	1. Payment or support schemes that are contingent upon the achievement of specific ecological or restoration outcomes. 2. Carbon Removal Certification that verifies and incentivises carbon sequestration efforts, promoting sustainable land management practices. 3. Financial Instruments and Subsidies that promote sustainable land-use practices. 4. Funding and Financial Measures to address gaps in funding for land restoration and sustainable practices
6.	Farm to Fork Strategy (Communication, 2020a)	1. Promoting farming and forestry practices that remove CO_2 from the atmosphere. 2. Certification of Carbon Removals - a regulatory framework for certifying carbon removals based on robust and transparent carbon accounting. 3. Payments for farmers and foresters for carbon sequestration efforts.
7.	CAP 2023-2027 (CAP, 2023)	1. Eco-schemes: voluntary schemes for farmers to adopt or maintain more sustainable farming practices: organic farming, agro-ecological practices, precision farming, agroforestry, carbon farming, animal welfare, etc. 2. Agri-Environment-Climate Measures (AECMs) - voluntary commitments by farmers to go beyond the mandatory requirements; they compensate for income loss or additional costs. 3. Organic farming - support for farmers converting to or maintaining organic production, which generally uses fewer chemical inputs, enhances biodiversity, etc.
8.	Territorial Agenda 2030 (Agenda, 2020)	1. Territorial Impact Assessments (TIAs) - designed to evaluate how sector policies affect the territorial development and cohesion of regions. By incorporating TIAs into policy-making, decision-makers can identify potential positive or negative land-use impacts early in the process, promoting more sustainable and balanced land development. 2. Territorial Tools and Instruments: • European Groupings of Territorial Cooperation (EGTC) enables cross-border, transnational, and interregional cooperation to address common land-use challenges effectively. EGTCs can facilitate coordinated land planning and joint infrastructure

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No	European policy document	Identified land-use instruments and incentives
		development, promoting sustainable land use on a macro-regional scale. • Integrated Territorial Development encourages combining land-use planning with social, economic, and environmental strategies—such as green infrastructure, sustainable urban extensions, or land recycling. 3. Land-Use Planning and Land Recycling Strategies 4. Supporting Land-Use Changes on Underused Sites
9.	Recovery and Resilience Facility (Regulation, 2021d)	Specific sustainable land-use instruments are not included.
10.	New Cohesion Policy (Regulation, 2021b)	1. Local development strategies can include land-use planning, restoring degraded land, improving ecosystems locally, and protecting natural heritage. 2. Thematic concentration requirements: ensure that a minimum share of ERDF funding goes to Policy Objective 2 ("greener, low-carbon"), thus making sure sustainable land-use related measures are funded.
11.	The EU rural vision (Communication, 2021a)	Specific sustainable land-use instruments are not included. It refers only to practices such as land-use planning, zoning, and integrated approaches that support sustainable farming, forestry, conservation, and development.
12.	Just Transition Fund (Regulation, 2021a)	Incentives in the form of investments relevant to land use are mentioned, such as green infrastructure development, land restoration projects, and support for energy efficiency measures in housing, which could include sustainable land management practices.
13.	Taxonomy Regulation (Regulation, 2020)	Specific sustainable land-use instruments are not included.
14.	Critical raw materials and amending Regulations (Regulation, 2024a)	1. Consideration of Critical Raw Materials in Land Use and Planning Processes: authorities are encouraged to include provisions for critical raw material projects in land use plans, zoning, and spatial plans, prioritising sites like brownfields and mines. 2. Combined Environmental and Sustainability Assessments for Critical Raw Materials Projects: when plans involving critical raw materials are subject to assessments under directives like Directive 2001/42/EC (Strategic environmental assessment) and Directive 92/43/EEC (Habitats), these should be combined for efficiency and

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No	European policy document	Identified land-use instruments and incentives
		comprehensiveness, supporting sustainable land-use by assessing impacts on ecosystems and water bodies. 3. Environmental Impact Assessments (EIAs): tools to minimise adverse environmental impacts of land-use decisions related to critical raw materials projects, ensuring sustainability by integrating environmental considerations into project planning and approval.

Source: own elaboration based on (Plus Change, 2025).

4. Review of the instruments and incentives in selected European countries

4.1. Introduction

The identification and in-depth description of land use instruments was conducted at the turn of 2024 and 2025 in all partner countries. Land use instruments were considered within sectors where actions can cause land cover change, namely land management, agriculture, forestry, biodiversity and nature conservation. This report is based on the EU definitions of land use and land cover change, where land cover refers to the physical cover of land and land use refers to the socio-economic function of land (ESTAT, 2015).

The authors have developed a detailed analysis presenting four types of instruments (regulatory, economic, information and other voluntary instruments and other) in the sectors studied.

4.2. Regulatory instruments

Regulatory instruments were divided into the main Subgroups:

Subgroup 1. Land use/spatial planning tools and requirements

Subgroup 2. Standards and controls on the overuse of agrochemicals and fertilisers in production

Subgroup 3. Restrictions or prohibitions on use

Subgroup 4. Management

In each of these subgroups, the identified instruments are detailed in Table 3. Instruments common to all EU countries are marked in grey colour.

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Table 3. Regulatory policy instruments and incentives related to land-use decisions

Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
Land use / spatial planning tools and requirements	agriculture	Agricultural land lease guidelines	Legally regulated lease of land for agricultural purposes and lease of land for agricultural purposes when doing business in agriculture (land lease for business)	environment	Act no. 504/2003 Coll. on the lease of agricultural land, agricultural enterprise and forest land and on the amendment of some laws (SK)
Land use / spatial planning tools and requirements	forestry	Lease of forest land	Lease of forest land is regulated by the provisions of the Act on the forest and the provisions on the land lease in the Cicil Code. The lease contract must be in writing form. However, the lease relationship could be established also by the law directly if the contract between forest owner and forest user is missing.	environment	Act no. 326/2005 on forests (SK) Forest Act (PL)
Land use / spatial planning tools and requirements	spatial planning	Local spatial development plan	The local spatial development plan establishes the use of land, including public purpose investments, and determines the ways of their development and construction.	environment	Spatial Planning and Management Act of 27 March 2003 (Journal of Laws 2023, item 997 with amendments) (PL); Municipal zoning/master plan; Principles of spatial development; Construction Act 283/2021 Coll. (CZ); Act No. 200/2022 Coll. on spatial planning (SK)
Land use / spatial planning tools and requirements	spatial planning	The general plan	The general plan is adopted by the municipal council. The general plan is drawn up for the municipal area, an amendment to the general plan may cover part of the municipal area. The general plan is an act of local law. The general	environment	Spatial Planning and Management Act of 27 March 2003 (Journal of Laws 2023, item 997 with amendments) (PL)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
			plan defines: (a) planning zones, b) municipal urban planning standards. The general plan may also identify: (a) areas of infill development, (b) areas of downtown development.		
Land use / spatial planning tools and requirements	spatial planning	The spatial development plan for the voivodeship	The spatial development plan for the voivodeship is prepared for the area within the administrative boundaries of the voivodeship. The spatial development plan for the voivodeship takes into account the findings of the voivodeship development strategy and the recommendations and conclusions of the landscape audit.	environment	Spatial Planning and Management Act of 27 March 2003 (Journal of Laws 2023, item 997 with amendments) (PL)
Land use / spatial planning tools and requirements	spatial planning/ biodiversity and nature protection	Strategic Environmental Assessment (SEA)	SEA is a high-level process that extends the concept and principles of an EIA and provides the opportunity to avoid the preparation and implementation of inappropriate plans, programmes and projects. It includes an assessment of project alternatives and the identification of cumulative consequences.	environment	EU Directive 2001/42/EC (EU)
Land use / spatial planning tools and requirements	spatial planning/ biodiversity and nature protection	Environmental Impact Assessment (EIA)	Environmental Impact Assessment (EIA) is a process that evaluates the potential impacts on the environment and aims to inform the public about planned investment projects. It also allows the public to engage in the impact assessment process at virtually any stage.	environment	EU Environmental Impact Assessment (EIA) Directive (2011/92/EU as amended by 2014/52/EU)
Standards and control	agriculture	Rules and standards for soil quality and land management	Introduction of specific actions aimed at preventing soil degradation, preventing	environment	Law No 246/2020 on Land Use, Conservation and Soil Protection (RO)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
			deterioration of its quality and preserving specific functions.		
standards and controls	agriculture	Guidelines for the use of fertiliser	The method of using fertilisers is specified to ensure environmental protection (including soil protection), human and animal health. The aim is to ensure sustainable and efficient nutrient management in agriculture while minimising environmental risks, particularly nitrate pollution.	environment	Executive Order on the use of fertiliser in agriculture in the planning period 2024/2025 (DK); Federal Fertiliser Act (DE); Act on fertilisers and fertilisation, Journal of Laws 2007 No. 147 (PL)
standards and controls	agriculture	Guidelines for the use of pesticides	General principles of use, storage and use of pesticides and guidelines for integrated plant protection.	environment	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 (EU)
standards and controls	agriculture	Guidelines for soil use methods	The main objectives are to prevent soil pollution, reclaim degraded soils and promote sustainable soil use. In particular, it includes identifying the source of soil pollution, assessing the degree of contamination and, if necessary, cleaning and remediation measures. It also recommends appropriate land use in forestry and environmentally sound land planning in urban development to promote the sustainable soil management. These are actions towards maintaining a balance between local ecological and economic activities while preventing overuse and destruction of the soil.	environment	Soil Protection Law (DE); Law No 246/2020 on Land Use, Conservation and Soil Protection (RO); Act on the Protection of Agricultural and Forest land, Journal of Laws No 16/1995 (PL)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
standards and controls	agriculture	Good agricultural and environmental conditions GAEC	A set of EU standards, aiming to achieve sustainable agriculture. Keeping land in good agricultural and environmental conditions is directly related to issues such as: minimum level of maintenance, protection and management of water, soil erosion, soil organic matter and soil structure. The set includes standards: • maintain a certain share of permanent grassland of the total agricultural area (GAEC 1) • protect wetlands and peatlands (GAEC 2) • maintain soil organic matter and soil structure through a ban on burning arable stubble (GAEC 3) • protect water from pollution through the establishment of buffer strips along water courses (GAEC 4) • prevent soil erosion through relevant practices (GAEC 5) • protect soil by defining rules for minimum soil cover (GAEC 6) • preserve the soil potential through crop rotation (GAEC 7) • maintain non-productive areas and landscape features (GAEC 8)	environment	Regulation (EU) 2021/2115 of the European Parliament and of the Council of 2 December 2021 establishing rules on support for strategic plans to be drawn up by Member States under the common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulations (EU) No 1305/2013 and (EU) No 1307/2013

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
			• protect environmentally-sensitive permanent grasslands in Natura 2000 sites (GAEC 9)		
Restrictions or prohibitions on use	biodiversity and nature protection	Prohibitions in nature reserves	26 detailed prohibitions listed in Art. 15 section 1 of the Act of 16 April 2004 on nature protection	biodiversity	Act of 16 April 2004 on nature protection (Journal of Laws 2004, No. 92, item 880), (PL)
Management	biodiversity and nature protection	Protected areas plan	Protection plans are prepared and implemented for national parks, nature reserves and landscape parks. Such a plan can also be prepared for a Natura 2000 area or part of it. The protection plan is established within 5 years from the date of establishment of the national park, recognition of the area as a nature reserve or creation of a landscape park. For national parks, nature reserves and landscape parks, it is the basic document for planning nature conservation. For a Natura 2000 area, such a basic document is a plan for protective tasks, and a protection plan is prepared for the area or its part only if there is a need for more detailed planning. Plans for protective tasks are established in the form of orders issued by regional directors of environmental protection, and the protection plan is established by regulation of the Minister of the Environment.	biodiversity	Act of 16 April 2004 on nature protection (Journal of Laws 2004, No. 92, item 880), (PL)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
Management	forestry	Forest management plan	A Forest Management Plan is the basic forest management document prepared for a specific forest district, containing a description and assessment of the condition of the forest and the objectives, tasks and methods of forest management. It is prepared every 10 years, on the basis of the Forest Act and based on the Forest Management Instruction. The Forest Management Plan contains the principles and methods of sustainable forest management in multifunctional forests. The subject of the forest management plan is forests and land to be afforested.	environment	Forest Act 1975 (AT), Forest Act (PL), Regulation of the Minister of the Environment of 12 November 2012 on the detailed conditions and procedure for the preparation of the forest management plan, the simplified forest management plan and the forest condition inventory (PL), National Strategy for Forest (PT), Act no. 326/2005 on forests (SK), Forest Law (LV)
Management	forestry	Deciding on exclusion or limitation of use	The State Forestry Administration Authority decides on a) permanent exemption, which means a permanent change in the type of land, b) temporary exemption, which means a temporary change in the use of forest land for a maximum period of 20 years, which is brought into a state enabling the fulfilment of forest functions by technical and biological reclamation.	environment	Act no. 326/2005 on forests (SK), Act on the Protection of Agricultural and Forest Lands (PL)
Management	forestry	Compensation for Forest damage	The law aims to protect forest resources and ensure accountability for damages caused by non-compliance with regulations.	environment	Cabinet of Ministers Regulation No 774 Procedure for determining damage caused to the forest (LV), Act no. 326/2005 on forests (SK), Code of Offences (PL)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
Management	forestry	Concession for sustainable forest management	The New Forest Code is the main legislation for forest governance in Romania. The Code includes sections on the national forest fund, licensing and permitting, sustainable forest management, control and compliance, and liability and penalties. The new Forestry Code provides for several essential measures to protect forests and green spaces in cities.	environment	Law on the Forestry Code No. 85/2024 (RO)

Source: own elaboration.

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4.3. Economic instruments

In the group of economic instruments, three subgroups were distinguished:

Subgroup 1. Price-based instruments

Subgroup 2. Payment for ecosystem services

Subgroup 3. Property rights and secure and tenure

In each of these subgroups, identified instruments across the 12 analysed European countries are characterised in detail in Table 4. Instruments common to all EU countries are marked in grey colour.

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Table 4. Economic policy instruments and incentives related to land-use decisions

Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
Price-based instruments	biodiversity and nature protection/agriculture	Fee for excluding land from agricultural production	The fee for excluding land from agricultural production is closely related to the regulatory instrument, which is the decision on excluding land from agricultural production. A person who has obtained a decision allowing the exclusion of land from agricultural production is obliged to pay the due and annual fees. The due is a one-off fee for permanently excluding land from production.	biodiversity	Act of February 3, 1995, on the protection of agricultural and forest land (Journal of Laws 2024.82) (PL)
Price-based instruments	biodiversity and nature protection/agriculture	Fee for agricultural and forest land fragmentation	In Slovakia, the land and land ownership is very fragmented. This makes land cultivation difficult and therefore most of the land is in the hands of tenants, who are usually the entities that managed the land before 1989. To prevent the further fragmentation of agricultural land, forest land and to protect vineyards located outside the built-up area of the municipality, the transfer of ownership may only be carried out per the law no 180/1995 Coll. on certain measures for the organisation of land ownership.	biodiversity	Act no. 180/1995 Coll. on certain measures for the organisation of land ownership. Act no 97/2013 Coll. on land communities (SK)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
Price-based instruments	agriculture	CO_2e tax on emissions from livestock	Climate regulation of non-energy-related emissions from agriculture. A CO_2e tax on emissions from livestock will be introduced from 2030. The tax will be phased in linearly between 2030 and 2035. The tax base consists of emissions from livestock digestion and emissions from manure handling, based on the emission inventory.	climate	Agreement about Green Denmark. Agreement between the Government, Agriculture & Food, Denmark's Nature Conservation Association, Food Association NNF, Danish Metal, Danish Industry and The National Association of Municipalities, 24. Juni 2024 (DK)
Price-based instruments	Forestry	The fee for excluding land from forest production	(PL) An investor planning to convert forest land for other purposes has to pay: 1) a one land conversion fee – this is calculated as the product of the current price of $1m^3$ of timber, the area of excluded land in ha and a coefficient differentiating the forest habitat type, 2) annual fees – amounting to 10% of the fee expressed in cubic metres of timber, payable from the moment the land is taken out of production for a maximum of 20 years. 3) compensation in the event of premature felling of a stand - is determined by a separate decision after the actual exclusion of the land from forestry production. The dues and annual fees for taking forest land out of production in protective forests are 50% higher. (SK) (1) A legal entity or a natural person on whose application it was decided to set aside forest land shall be obliged to compensate for the loss of non-productive functions of the forest.	environment	Law on the protection of agricultural and forest land (PL) Act no. 326/2005 on forests (SK)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
			(2) The basic amount of the levy is a) permanent exclusion by the product of the value of the effect of the non-productive function of the forest for the relevant management set of forest types for the cut-off period specified in Annexe No. 1 and the relevant area, b) temporary exemption, the basic amount of the levy determined in the manner specified in letter a) divided by the cut-off period specified in the forest management programme or instructions for its preparation (Section 41(9)) multiplied by the number of years of temporary exemption. (3) The basic amount of the levy is increased for the exclusion of forest land.		
Price-based instruments	Forestry	Forest restoration	Key points include: 1. Afforestation Conditions: Forests can be established if it does not contradict local development planning documents. If such documents do not explicitly mention afforestation, local authorities determine its compliance, except for cases meeting specific criteria in the Forest Law. 2. Restoration Timeline: After logging or other impacts that reduce the forest's canopy area below a critical threshold, restoration must occur within a specified timeframe depending on the forest type.3. Recognition of Afforestation and Restoration: The process for recognizing a forest as restored or afforested includes submitting reports to relevant authorities, which will verify the	environment	Cabinet of Ministers Regulation No 308 Reforestration, afforestration and plantation forest regulations (LV)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
			information and decide on the status of the forest. 4. Plantation Forests: Specific rules apply to plantation forests, including registration and management requirements. Materials from registered sources in other EU countries can be used for restoration and afforestation, provided they meet certain scientific and regulatory criteria. 5. General Provisions: The regulation also applies to specially protected natural areas, ensuring that afforestation and restoration activities comply with conservation requirements. Overall, the regulation aims to ensure sustainable forest management while allowing for afforestation and restoration activities under defined conditions.		
Payment for ecosystem services	agriculture/biodiversity and nature protection	Basic Income Support for Sustainability (BISS)	Basic Income Support for Sustainability (BISS) is a component of the Common Agricultural Policy (CAP) of the European Union that provides direct financial assistance to farmers to ensure a stable and sustainable income. The aim of this support is to enhance the economic viability of the agricultural sector while simultaneously encouraging the adoption of environmentally friendly farming practices. Providing BISS support in the form of an annual separate payment per hectare of eligible land aims to achieve the basic stabilisation of income for all active farmers.	biodiversity	Government Regulation of the Slovak Republic No. 436/2022 Coll. establishes the rules for providing support in agriculture through direct payments (SK)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
Payment for ecosystem services	agriculture	Direct Payments	These payments aim to support the stability of the agricultural sector, ensure rural development, protect the environment, promote sustainable agricultural practices and motivate farmers to implement environmentally friendly farming techniques. Payments are paid for each hectare of land farmed by the farmer.	environment	Regulation EU No 1307/2013 of the European Parliament and of the Council establishing rules for direct payments (EU)
Payment for ecosystem services	agriculture	Eco-Schemes	Eco-schemes are optional for farmers, but they provide financial incentives to encourage participation. To qualify for payments, farmers must implement practices that exceed the basic requirements of environmental standards set by the EU. These might include biodiversity enhancement, resource efficiency, soil and water quality management, and carbon farming.	environment	Regulation EU)2024/1468 of the European Parliament and of the Council of 14 May 2024 as regards standards for good agricultural and environmental conditions, schemes for climate, environment and animal welfare (EU)
Payment for ecosystem services	agriculture	Retirement of Degraded Cropland	This eco-scheme aims to encourage farmers to exclude arable land from production. Such excluded areas have a positive impact on the environment, in particular, they have a positive impact on the biodiversity of agricultural areas.	biodiversity	Regulation EU 2024/1468 of the European Parliament and of the Council of 14 May 2024 as regards standards for good agricultural and environmental conditions, schemes for climate, environment and animal welfare (EU)
Payment for ecosystem services	agriculture	Subsidisation of Conservation-Friendly Production Practices (So-Called	It is a payment for agricultural practices that are beneficial to the climate and environment. Farmers are required to implement three practices: crop diversification, maintenance of Permanent Grasslands, and maintenance of ecological focus area (EFA)	climate	Regulation EU No 1307/2013 of the European Parliament and of the Council of 17 December 2013 (EU)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
		Greening Payment)			
Payment for ecosystem services	agriculture	Support for specific forms of farming diversification	Support for specific forms of farming (diversification of agricultural activities) is an important tool for the sustainability of agriculture and the development of rural areas. Diversification takes various forms: crop diversification, organic farming, and promotion of regional and traditional products.	biodiversity	Support for specific forms of farming (diversification) https://www.databaze-strategie.cz/cz/mze/strategie/strategie-resortu-ministerstva-zemedelstvi-s-vyhledem-do-roku-2030?typ=detail (CZ)
Payment for ecosystem services	agriculture/biodiversity and nature protection	Austrian Integrated Administration and Control System (IACS) and the funding of mountain agriculture	There are 25 measures divided into five thematic groups: general, arable land, grassland, permanent crops and animal health. It implements the eco-schemes (Article 31), agri-environment, climate and animal welfare (Article 70) and payments under Natura 2000 and the Water Framework Directive (Article 72) of Regulation (EU) 2021/2115. Compensation is provided for obligations that go beyond legal requirements and that are implemented by the companies on a voluntary basis. This means that voluntary participation in the measures is generally possible for every agricultural enterprise in Austria.	biodiversity	The national CAP Strategic Plan for Austria https://info.bml.gv.at/en/topics/agriculture/common-agricultural-policy-and-subsidies/national-strategic-plan-2023-2027/the-national-cap-strategic-plan-for-austria.html (AT)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
Payment for ecosystem services	agriculture	Subsidies for Organic Farming	Subsidies for organic farming are received by farmers who produce using natural, environmentally friendly methods,	environment	Regulation EU 2021/2115 of the European Parliament establishing rules on support for strategic plans to be drawn up by Member States under the common agricultural policy (CAP Strategic Plans), (EU)
Payment for ecosystem services	biodiversity and nature protection	Biodiversity offsetting	Landowners voluntarily carry out offsets for others based on contracts with individually negotiated compensation payments and conservation measures to be implemented over the medium term	biodiversity	Literature source: https://conbio-onlinelibrary-wiley-com.bazy.pb.edu.pl/doi/pdf/10.1111/cobi.13631
Payment for ecosystem services	biodiversity and nature protection	Conservation payments	programs in which landowners receive a standard (non-negotiable) payment for a short period for voluntary implementing a predefined conservation measure or reaching a predefined conservation goal	biodiversity	Literature source: https://conbio-onlinelibrary-wiley-com.bazy.pb.edu.pl/doi/pdf/10.1111/cobi.13631
Payment for ecosystem services	forestry	Support scheme to meet the ambitious national afforestation target of 250 000 ha of new forest	2.7 billion euros are reserved for support schemes to farmers for an afforestation of 10% of all farmland in Denmark before 2045. As a central framework for land conversion, the Danish Green Land Fund will be established, which will act as an umbrella for a number of significant initiatives, including the support schemes for private afforestation. Support scheme for private afforestation, will be targeted at, for example, aquatic environment and drinking water protection and is expected to lead to increased CO_2 absorption of 0.1 million tonnes in 2030, rising to	climate	Agreement about Green Denmark. Agreement between the Government, Agriculture & Food, Denmark's Nature Conservation Association, Food Association NNF, Danish Metal, Danish Industry and The National Association of Municipalities, 24. Juni 2024 (DK)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
			1.7 million tonnes in 2045. The final design of the schemes are expected late 2025.		
Payment for ecosystem services	forestry	Remuneration for forest ecosystem services	planned; In 2021, Germany began to envisage a new remuneration system for forest ecosystem services which enhances the storage of CO_2 in the forests and strengthens the health of forests under conditions of a changing climate. The German government will implement payment systems to compensate forest owners for these services.	climate	Forest Strategy 2050 of the Federal Ministry of Agriculture (DE)
Property rights and secure and tenure	biodiversity and nature protection	Land purchase	land purchase by conservation agencies to implement species conservation measures on the land	biodiversity	Literature source: https://conbio-onlinelibrary-wiley-com.bazy.pb.edu.pl/doi/pdf/10.1111/cobi.13631

Source: own elaboration.

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4.4. Information and other voluntary instruments

Information and other voluntary instruments were also classified into three subgroups:

Subgroup 1. Ecolabelling and certification

Subgroup 2. Partnership instruments

Subgroup 3. Building ecological awareness

In each of these subgroups, identified instruments are characterised in detail in Table 5. Instruments common to all EU countries are marked in grey colour.

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Table 5. Information and other voluntary instruments and incentives related to land-use decisions

Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
Ecolabelling and certification	agriculture	Guidelines for labelling organic food	Organic food labels can be found on food packaging. The mark confirms that the food is produced using environmentally friendly and soil-protecting methods. This information is intended to encourage consumers to buy food that is healthy for consumers and protects the environment, including the soil. The organic food logo is the same in all EU countries.	environment	Regulation EU No 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products (EU)
Ecolabelling and certification	agriculture	Geographical Indication Labels (GLs)	Geographical indications, designations of origin, and traditional specialities guaranteed help to protect the geographical particularities of regions, which are transformed into agricultural products and foodstuffs, as well as their culture and traditions.	environment	Regulation EU No 1151/2012 of the European Parliament and of the Council of 21 November 2012 (EU)
Ecolabelling and certification	forestry	International forest management certification	There are two international forest management certification schemes - the PEFC system and the FSC. The main objective of PEFC (Programme for the Endorsement of Forest Certification Schemes) is to promote sustainable forest management through a forest certification system and labelling of forest products carried out by independent bodies. The certificate is awarded after independent audits, carried out by separate bodies, verifying the compliance of the activities carried out with the PEFC sustainability criteria. PEFC declarations for products containing forest raw materials provide information on the origin of these products from sustainably managed	environment	Regulation EU 2023/1115 of the European Parliament and of the Council of 31 May 2023 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation EU No 995/2010, https://eur-lex.europa.eu/eli/reg/2023/1115/oj (EU)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
			forests, recycled and other non-controversial sources. As a condition for forest management certification under the FSC system, forest management must be carried out, considering the country's regulations, international treaties and agreements. It is also mandatory to comply with the principles and criteria agreed by the members of the FSC organisation.		
Partnership instruments	biodiversity and nature protection/climate change	Local anchoring of the restructuring effort (the green tripartite agreement)	The local anchoring will support the fulfilment of the Water Framework Directive and the targets for the extraction of carbon-rich lowland soils, as well as more efficient solutions, more local ownership and holistic thinking. The aim is to create the best possible conditions for cost-effective solutions and the utilisation of local knowledge. The new organisation will facilitate the local planning and implementation of area conversion in the individual main water catchment area. This concerns, for example, lowland soils, afforestation, wetlands, extensification and other area-based conversion efforts, etc.	biodiversity	Agreement about Green Denmark. Agreement between the Government, Agriculture & Food, Denmark's Nature Conservation Association, Food Association NNF, Danish Metal, Danish Industry and The National Association of Municipalities, 24. Juni 2024 (DK)
Partnership instruments	forestry	Forest Forum	Coordination and exchange on forest topics. This is a voluntary instrument for coordinating the various demands placed on forests. In the Forest Dialogue itself, current national and international forestry policy issues are discussed with the involvement of interested stakeholders and in a consensus-oriented manner.	environment	Austrian Forest Act 1975 (AT)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
Partnership instruments	spatial planning	INSPIRE	The idea of INSPIRE (Infrastructure for Spatial Information in Europe) is to provide access to knowledge about the common European space to all who need it: administration bodies, public and private organisations, entrepreneurs and citizens operating on a scale of the entire European Union, on the scale of individual Member States and on a regional and local scale.	environment	Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007; https://www.gov.pl/web/gugik/inspire2 (EU)
Building ecological awareness	forestry	Forest Information System for Europe (FISE)	FISE is the entry point for sharing information with the forest community on Europe's forest environment, its state and development. FISE brings together data, information and knowledge gathered or derived through key forest-related policy drivers. Information reaches main aspects of the forest state and trends from nature and biodiversity to bioeconomy. The information has been collected by the countries and reported to European forest databases and policy processes such as Eurostat, Forest Europe, the United Nations Economic Commission for Europe (UNECE) and the Food and Agriculture Organisation of the United Nations (FAO), and information compiled at the European Environmental Agency (EEA). On the website Forest Information System for Europe (FISE) it is possible to explore key data and information on Forest and Forestry at the European Countries level. Each Country profile provides the relevant data on forests, helping to understand their status and track their changes over time. The Country profiles are	biodiversity	Communication From the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. New EU Forest Strategy for 2030 (COM/2021/572 final), (EU)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
			complemented by the most recent statistics on relevant topics, like: biodiversity, bioeconomy, vitality and climate, that you can further explore in the dedicated FISE “Europe’s forests” section.		
Building ecological awareness	agriculture	Organic Farming Program	The main objective is to support research and practice in organic farming and through its promotion, to protect the environment, improve biodiversity and promote the health and safety of consumers. Specifically, it includes supporting scientific research on organic farming and disseminating the results to farmers and the food industry. There are also public relations and educational programmes to help consumers understand the benefits of organic products.	environment	PL: https://www.gov.pl/web/rolnictwo/ramowy-plan-dzialan-dla-ywnosci-i-rolnictwa-ekologicznego-w-polsce; DE: Bundes programm Ökologischer Landbau https://www.bmel.de/DE/themen/landwirtschaft/oekologischer-landbau/bundesprogramm-oekolandbau.html; RO: National

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
					action plan for the development of organic production in Romania
Building ecological awareness	agriculture	Competitions (eg. organised by the Association of Private Farmers of the Czech Republic)	The Association organises several competitions and events to support and motivate Czech farmers, improve their skills and contribute to the popularisation of quality agriculture. This competition recognises the best and most innovative private farmers in Czechia who show exceptional results in agricultural production, sustainability and environmental protection.	environment	Association of Private Farmers of the Czech Republic: https://www.asz.cz/o-asz/about-us (CZ)

Source: own elaboration based on literature review.

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4.5. Other instruments

In Table 6, we have identified the other instruments and incentives within the literature review and cross-country surveys. Instruments common to all EU countries are marked in grey colour.

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Table 6. Other instruments and incentives related to land-use decisions

Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
Development assistance	agriculture	Consulting (for ex. Agricultural Advisory Center (in Poland); Association of Private Farmers of the Czech Republic	The consulting activities of the Association of Private Farmers of the Czech Republic (ASZ ČR) focus on support and assistance to private farmers, ranchers and entrepreneurs in agriculture. The aim is to improve their farming, orientation in legislation and access to new technologies or financing. Consulting centres - consulting and organisation of training on agricultural practices improving soil quality,	environment	Association of Private Farmers of the Czech Republic – consultancy: https://www.asz.cz/poradenstvi/ (CZ), www.en.cdr.gov.pl (PL)
Development assistance	biodiversity and nature protection	LIFE: the EU's financial instrument for the environment and climate	It is a financial instrument of the European Union established to support projects in the field of environment, nature conservation and climate change. The main objective is to support sustainable and innovative projects that contribute to nature conservation, biodiversity, environmental improvement and the fight against climate change.	biodiversity	-
Inclusive national planning, incorporating climate and biodiversity concerns, national and local governments, non-party stakeholders	forestry	National specialist program for forest genetic resources	The National Specialist Programme for Forest Genetic Resources is the basis for the long-term conservation and sustainable use of forest genetic resources in Germany. It includes measures for the conservation of species diversity, genetic diversity within tree and shrub species, the restoration of populations and the promotion of diverse forest ecosystems. Its tasks include: - Centralised documentation of forest genetic resources (FGRDEU-Online)	biodiversity	National specialist program for forest genetic resources, Federal Institute for Agriculture and Food (DE)

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Subgroup	Sector	Detailed name of instrument	Short description	The main purpose of the instrument	Legal basis
			- Development of monitoring methods and indicators - International co-operation (FAO, EUFORGEN, etc.) - Public relations and information dissemination		
Inclusive national planning, incorporating climate and biodiversity concerns, national and local governments, non-party stakeholders	forestry	The European network INTEGRATE	promotes and advances forest management approaches for integrating nature conservation into sustainable forest management at three levels: the decision-making policy level, the level of forest practitioners/managers, and the level of research and academic knowledge. It currently comprises 15 European member states. The INTEGRATE network fosters knowledge transfer across borders and aims for capacity building in the field of integrated forest management. A great feature of the network is the integration of science, field experience and practical examples into its pool of knowledge.	biodiversity	-

Source: own elaboration.

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In all groups 49 instruments influencing land-use decisions were identified. 30 instruments are specific for individual or several countries, while 14 instruments are common for all EU countries. 5 instruments were identified in literature and other sources.

An analysis of the instruments collected shows that in the agriculture sector, almost all instruments are established by the Common Agricultural Policy, and all partners confirmed its implementation in their countries.

The specific nature of the sector often determines the type of instruments used, e.g. regulatory instruments dominate in spatial planning, while economic instruments dominate in agriculture and biodiversity Figure 4. The results confirm that informational and other voluntary instruments are less frequently used and underestimated in land use policy. Their use is determined by the level of public awareness, including internal values and commitment to environmental protection.

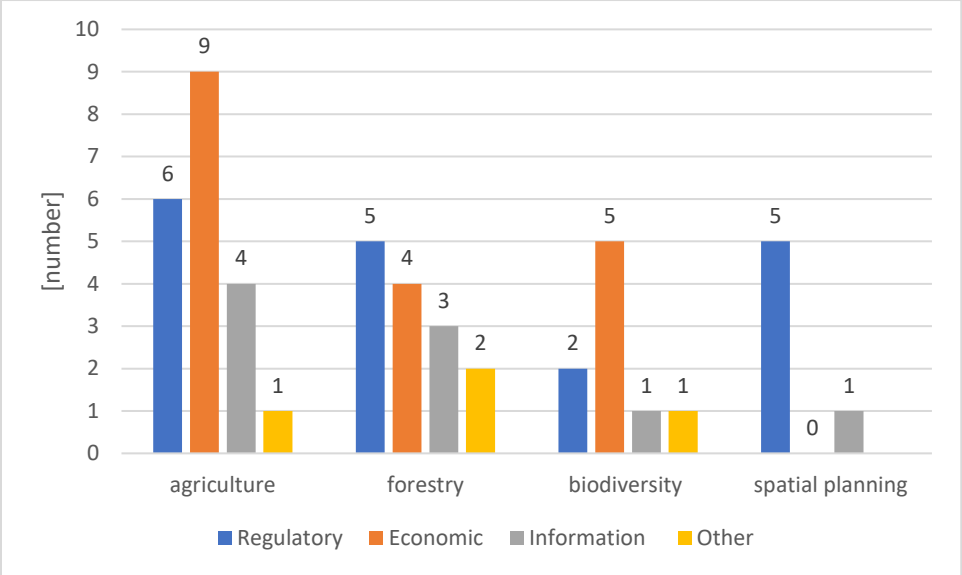

Figure 4. Groups of instruments by sector
Source: own elaboration.

With regard to the main conservation objectives of the instruments, most of them focus on environmental protection in the broad sense (59%), 33% on biodiversity conservation and only 8% on climate protection. Regulatory and informational instruments are focused mostly on environment protection, while economic and other instruments – on biodiversity protection (Figure 5).

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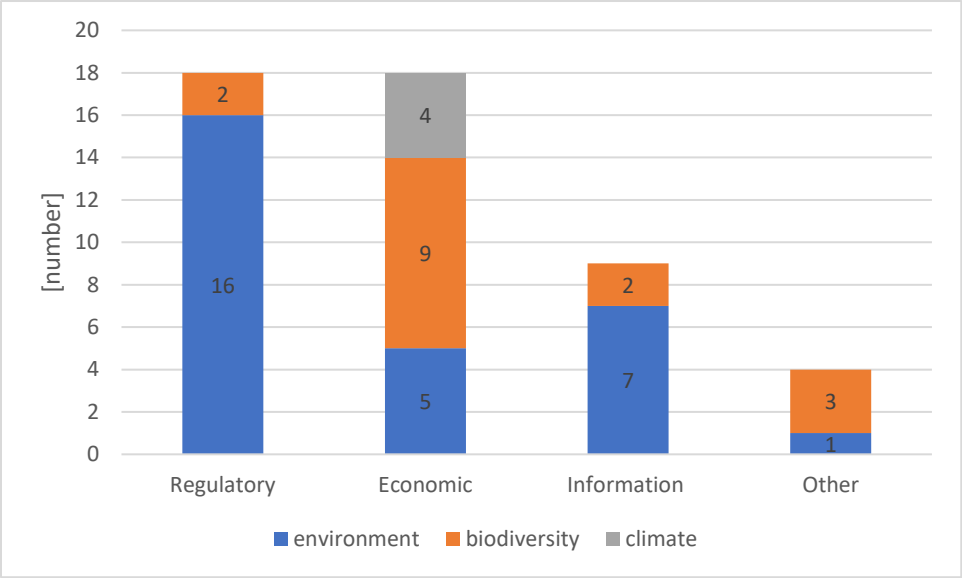

Figure 5. Main objectives of instruments by type of instrument
Source: own elaboration.

5. Description of the selected incentives and instruments

Among soil and climate protection instruments, those implemented within the Common Agricultural Policy (CAP) occupy a significant place. They provide financial support for farmers transitioning to sustainable and climate-resilient agricultural practices. European Union Member States are obligated to implement them, considering national conditions and the specific needs of the agricultural sector.

The most commonly used instruments include in the groups of:

- regulatory instruments: Local Spatial Development Plans and GAEC standards;
- economic instruments: eco-schemes and subsidies for organic farming;
- informational and other voluntary instruments – organic food labelling.

Some countries also apply soil and climate protection instruments, which, due to their unique nature, deserve broader dissemination. These instruments are primarily partnership-based, relying on cooperation between residents and local authorities, and their main goals are to shape public awareness and build relationships among various stakeholder groups. Implemented voluntarily, they engage residents, local government units, and non-governmental organisations. Compared to prescriptive instruments, they tend to enjoy higher levels of public acceptance and understanding.

Examples of such solutions include in the groups of:

- informational and other voluntary instruments: the Green Tripartite Agreement

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- other instruments: the European Network INTEGRATE and the National Specialist Program for Forest Genetic Resources

5.1. Regulatory instruments

Name of instrument: Local Spatial Development Plan

Subgroup: Land use/spatial planning tools and requirements

Country: all EU countries

Detailed description:

The local spatial development plan (LSDP) is key in protecting agricultural and forest land, regulating its designation and use. It determines which areas can be designated for development and which should remain in agricultural or forest use, contributing to sustainable development and environmental protection.

The local spatial development plan establishes the use of land, including public purpose investments, and determines the ways of their development and construction. The municipal council adopts a resolution on accession to preparing a local spatial development plan. An integral part of the resolution is a graphic annexe showing the area's boundaries covered by the draft local plan. The head of the commune, mayor or city president, prepares a draft local spatial development plan, containing both text and graphic parts. The local spatial development plan is prepared on a scale of 1:1000. In particularly justified cases, maps on a scale of 1:500, 1:2000 and 1:5000 are permitted. In general, the local spatial development plan is an optional study. The costs of preparing the local spatial development plan are charged to the commune budget (there are a few exceptions). The local spatial development plan is an act of local law. According to data from the Central Statistical Office, Poland's planning coverage is approximately 30%.

The Local Spatial Development Plan is considered an effective instrument for land protection, as it regulates land use, development conditions, and management rules, thereby safeguarding biologically active areas and natural resources from uncontrolled transformation and degradation.

Functions: incentive/stimulus

Scale: local

Legal status: voluntary

Existing or planned instruments: existing

Title of the document in English: Spatial Planning and Management Act of 27 March 2003 (Journal of Laws 2023, item 997 with amendments).

Name of instrument: GAEC – Good agricultural and environmental conditions

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Subgroup: Rules and standards for water, soil quality and land management
Country: all EU countries
Detailed description:
The most important CAP instruments for soil and climate protection include, above all, the GAEC standards (Good Agricultural Conditions in line with environmental and climate requirements), which impose obligations such as protecting wetlands and carbon-rich soils.
Good agricultural and environmental conditions, abbreviated as GAEC, are the standards of good agricultural culture consistent with environmental protection, referring to a set of European Union (EU) standards defined at the national or regional level, aiming to achieve sustainable agriculture. Keeping land in good agricultural and environmental conditions is directly related to issues such as:

- minimum level of maintenance,
- protection and management of water,
- soil erosion,
- soil organic matter,
- soil structure.

These standards are to be respected by European farmers receiving direct payments or some of the rural development payments.
The standards are as follows:

- maintain a certain share of permanent grassland of the total agricultural area (GAEC1),
- protect wetlands and peatlands (GAEC 2),
- maintain soil organic matter and soil structure through a ban on burning arable stubble (GAEC 3),
- protect water from pollution through the establishment of buffer strips along water courses (GAEC 4),
- prevent soil erosion through relevant practices (GAEC 5),
- protect soil by defining rules for minimum soil cover (GAEC 6),
- preserve the soil potential through crop rotation (GAEC 7),
- maintain non-productive areas and landscape features (GAEC 8),
- protect environmentally sensitive permanent grasslands in Natura 2000 sites (GAEC 9).

Good agricultural and environmental conditions standards apply to farmers from 2023. The introduction of GAEC standards is linked to conditionality. It means meeting certain requirements in exchange for receiving direct payments under the Common Agricultural Policy (CAP).
For example, from 2025, Poland is obligated to apply the GAEC 2 standard, which protects peatlands and wetlands. Inspections and sanctions related to implementing this conditionality do not apply to farms with less than 10 hectares of agricultural land.

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Peatlands and wetlands covered by the GAEC 2 standard include arable land and permanent grassland.
The total area covered by the GAEC 2 standard in agricultural land is approximately 399,900 hectares. A significant portion of this area overlaps with NATURA 2000 sites, which are already protected.
Functions: incentive/stimulus, fiscal
Scale: national
Legal status: obligatory
Existing or planned instruments: existing
Title of the document in English: 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

5.2. Economic instruments

Name of instrument: Eco-scheme: carbon farming and nutrient management
Subgroup: Payment for ecosystem services (including REDD+) and agri-environment measures
Country: all EU countries
Detailed description:
A new pro-environmental instrument is eco-schemes, which provide payments for voluntary environmental actions.
Eco-schemes are annual, paid practices, adapted to national conditions and needs, but assessed by the European Commission in terms of achieving the environmental and climate objectives of the new CAP – protection of soil resources, water, climate, animal welfare, and biodiversity in agricultural production.
Eco-schemes - support farmers who adopt or maintain farming practices that contribute to EU environmental and climate goals. Through eco-schemes, the EU rewards farmers for preserving natural resources and providing public goods, which are benefits to the public that are not reflected in market prices. The number of practices included in eco-schemes varies, ranging from three in Hungary to 22 in the Netherlands.
This mechanism focuses on a standard list of action areas defined at the EU level. It can be used to support practices such as organic farming, agro-ecological practices, precision farming, agro-forestry, carbon farming, and animal welfare improvements.
Eco-schemes have been designed to promote practices that translate into agricultural income by increasing soil fertility, rational fertilisation, and improving crop quality. This is primarily

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served by the Carbon Farming eco-scheme, under which farmers can choose from eight available practices that best meet their needs.

farming is an approach to growing crops that aims to increase organic carbon content in the soil. In practice, this means using techniques that help capture carbon dioxide from the atmosphere and store it in the soil. A key element of carbon farming is the increased production of biomass, which provides a source of organic carbon.

The eco-scheme is a system for financing agricultural practices that reduce greenhouse gas emissions and improve soil quality and biodiversity. It is a subsidy program that provides farmers with funding for implementing ecological practices in their operations. The eco-scheme is open to all farmers who want to increase sustainable agricultural production and contribute to environmental protection.

Carbon farming practices include:

- extensive use of permanent grasslands with animal stocking,
- winter catch crops or under-sown crops,
- development and adherence to a fertilisation plan - basic variant and variant with liming,
- diversified crop structure,
- mixing manure on arable land within 12 hours of its application,
- application of liquid natural fertilisers using methods other than spraying,
- simplified cultivation systems,
- mixing straw with soil.

There are limitations in the choice of eco-schemes, e.g. in Poland, a farmer may apply for payments under no more than two eco-schemes, practices, or variants for the same area in the same year.

This restriction applies to area-based eco-schemes, and the total area of land eligible for support cannot exceed 300 hectares.

The Carbon Farming and Nutrient Management eco-scheme is based on points assigned to individual practices.

Carbon farming offers numerous benefits for the environment and agriculture, including reducing greenhouse gas emissions, improving soil quality, increasing agricultural resilience to climate change, protecting biodiversity, and providing benefits to farmers.

These schemes support environmental and climate objectives, such as protecting soil, water, climate, and biodiversity, as well as improving animal welfare. Financial support for farmers delivering public goods – such as soil improvement, water retention, and investments in practices that reduce greenhouse gas emissions – also constitutes a significant element of the CAP in this area.

Functions: incentive/stimulus, income

Scale: national

Legal status: voluntary

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Existing or planned instruments: existing
Title of the document in English: Regulation (EU) 2021/2115 of the European Parliament and of the Council of 2 December 2021 establishing rules on support for strategic plans to be drawn up by Member States under the common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulations (EU) No 1305/2013 and (EU) No 1307/2013

Name of instrument: Subsidies for organic farming
Subgroup: Payment for ecosystem services (including REDD+) and agri-environment measures
Country: all EU countries
Detailed description:
Organic farming subsidies are financial support from the European Union and national governments for farmers who use organic production methods and whose farms have passed the certification process confirming compliance with organic farming standards. The main goals of organic farming are to produce healthy food free of chemicals, protect the environment by preserving biodiversity, soil fertility, and water quality, as well as ensure high animal welfare and support the sustainable management of natural resources.
Support is granted for specific areas of agricultural land, and its amount depends on the type of crop, the stage of conversion to organic farming, and whether the farm also engages in livestock production.
Supports the following crop groups: agricultural, vegetable, herb, basic fruit, berry, extensive fruit, forage, and permanent grasslands, provided they are managed according to organic farming principles. Subsidies are available to farmers supervised by a certification body as part of the organic farming control and certification system.
Payment rates vary depending on the crop group and the crop's status (in conversion, already organic). They are defined as annual payments per area unit, i.e., up to 1 hectare.
All European Union countries are required to support organic farming through payments. However, the form, amount, and intensity of this support may vary depending on the country and its development strategy.
Organic farming subsidies are a financial support instrument that directly contributes to soil protection by implementing environmentally friendly practices supporting biodiversity conservation. Their primary objectives include environmental protection, biodiversity preservation, soil quality improvement, rational energy use, and ensuring high animal welfare standards. This mechanism stimulates the development of organic production.
Data indicate that, over the past decade, organic farming has shown a clear upward trend globally. Between 2012 and 2022, the area of agricultural land managed under the organic

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system more than doubled. Poland is an exception to this trend, being the only country to record a decline in the area of organic land. This phenomenon is primarily attributed to reduced economic support for organic producers.

Functions: incentive/stimulus, income

Scale: national

Legal status: voluntary

Existing or planned instruments: existing

Title of the document in English: 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

5.3. Information and other voluntary instruments

Name of instrument: Organic food labelling

Subgroup: Ecolabelling and certification

Country: all EU countries

Detailed description:

Organic food labels can be found on food packaging. The mark confirms that the food is produced using environmentally friendly and soil-protecting methods. This information is intended to encourage consumers to buy food that is healthy for consumers and protects the environment, including the soil.

Organic labelling is mandatory across the European Union for all packaged food products marketed as organic, including imported ones. This labelling is standardised throughout the EU, making it easy for consumers to recognise products that meet legal requirements. Its main element is the EU organic logo – the so-called Euroleaf.

The logo can only be used on products produced in accordance with the requirements of organic production, which is confirmed by a certificate. In Poland, the certificate is issued and controlled by a certifying institution (Control Bodies of Organic Farming) appointed by the Minister of Agriculture. Agricultural and Food Quality Inspection supervises certifying institutions. Any farmer who meets the conditions specified in the regulations on organic farming can apply for certification.

For example, in Poland, the certificate is issued for a limited period (1 year). The organic product certificate is payable. The fee depends on the area of agricultural land on the farm. The farmer can apply for a refund of incurred costs through the Agency for Restructuring and Modernisation of Agriculture.

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Organic food labelling is applied in all EU Member States, fulfilling both informative and educational functions, while also encouraging consumers to make more conscious purchasing decisions. Sustainable consumption emphasises the conscious and responsible use of natural resources. Sustainable products are produced with greater regard for ecological and social requirements than conventional products. As awareness of food origins increases, so does familiarity with organic labelling. Data indicating a growing demand for organic products provides a basis for optimistic projections concerning the future of sustainable consumption and actions aimed at preserving soil quality.

Functions: informational

Scale: national

Legal status: voluntary

Existing or planned instruments: existing

Title of the document in English: 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

Name of instrument: The Green Tripartite Agreement

Subgroup: Partnership instruments

Country: Denmark

Detailed description:

The green tripartite agreement includes a large area-based conversion of Danish farmland into wetlands to remove carbon-rich lowland soils and farmland into forest. While a central green area fund (40 billion DKK) is financing the conversions, the actual planning and implementation of what areas to convert is decentralised to the local level, in terms of a “local anchoring of the restructuring efforts”.

The local anchoring will support the fulfilment of the Water Framework Directive and the targets for extracting carbon-rich lowland soils, as well as more efficient solutions, more local ownership and holistic thinking. The aim is to create the best possible conditions for cost-effective solutions and the utilisation of local knowledge.

The new organisation will facilitate the local planning and implementation of area conversion in the individual main water catchment area. These concerns include lowland soils, afforestation, wetlands, extensification, and other area-based conversion efforts.

The municipalities of the main water catchment area will be responsible for the local organisation. The municipalities' task will be anchored in a local water catchment area steering group. The starting point is the existing 23 watershed steering groups, which currently consist of representatives from the municipalities in the main watershed. This is supplemented by water councils with members from various organisations and associations, such as individual

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collective water course guilds, farming organisations, environmental NGOs and associations for outdoor sport and recreation.

By delegating the tripartite agreement to the local level, efforts will be anchored in municipalities, which will lead negotiations between the local tripartite groups comprising farmers, landowners, and nature organisations.

This approach fosters collaboration among all stakeholders, promoting local ownership and holistic decision-making.

The agreements and plans must be finalised by December 2025, paving the way to achieve the key goals of reducing nitrogen emissions by 13,780 tonnes and converting 140,000 hectares of agricultural land near water bodies into natural areas. The groups may also begin planning the placement of 250,000 hectares of new forest, although this is not a requirement.

Functions: biodiversity and natural protection

Scale: regional

Legal status: obligatory

Existing or planned instruments: existing

Title of the document in English: Agreement about a Green Denmark. Agreement between the Government, Agriculture & Food, Denmark's Nature Conservation Association, Food Association NNF, Danish Metal, Danish Industry, and The National Association of Municipalities, 24. Juni 2024.

5.4. Other instruments

Name of instrument: The European network Integrate

Subgroup: Partnership instruments

Country: Germany, Czechia

Detailed description:

The European network Integrate is an alliance of representatives of 19 European countries, established in 2016 (Prague Declaration). Since 2022, the Network has operated as a Multi-Donor Trust Fund. As the Networks' secretariat, the European Forest Institute assists in gathering scientific and practical evidence on the application of integrative forest management. It facilitates training and provides communication support for network members and relevant stakeholders. Each country provides a national focal point that is responsible for sharing information from the country. The Network is chaired in rotation by one of its members for one year.

This alliance aims to promote cross-sectoral and cross-country learning and cooperation on successful approaches for enhancing biodiversity conservation as an integral part of forest management practices. The European Forest Institute (EFI) accompanies the process in its role

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as secretariat and by gathering scientific and practical evidence on the successful application, training, and communication of integrative forest management approaches. The Integrate Network is supported by the European Commission's Standing Forestry Committee.

Activities are conducted in three levels: the decision-making policy level, the level of forest and nature conservation practitioners, policy/managers and the level of research and academic knowledge.

These activities include:

- exchange scientific and practical evidence on the successful application, training, and communication of integrative forest management,
- a platform for discussion on balancing the demands of nature conservation and other forest functions and services,
- a network of ca. 200 demonstration and learning sites in more than 20 European countries, consisting of a broad diversity of forest types and ownership structures.

Examples of activities:

1. *Off we go to the forest - Ecological lessons in a German marteloscope*. At the Marteloscope "Mooswald", near the city of Freiburg, the students from the Montessori-Zentrum Angell met with Andreas Schuck, a scientist at the European Forest Institute. Over the next few hours, he introduced them to the fascinating ecosystem of forests. To start, a short quiz revealed some interesting facts and figures about Europe's forests and their well-known Freiburg City Forest. Afterwards, the class explored the forest in small groups. It was a practical supplement to ecology lessons.
2. *Local voices shape forest future: Auberive case study*. In Auberive, northeastern France, a shift in forest management began in the 1990s when local communities raised concerns over increasing clearcuts and their impact on the landscape. These conversations marked the beginning of a long-term transition towards more ecological and socially responsive forest practices.

Over the past two decades, Auberive has adopted Continuous Cover Forestry (CCF). This close-to-nature approach promotes native species, uneven-aged structures, and integrates ecological, economic and social values.

This transformation follows four guiding principles:

- prioritising the quality and value of individual trees,
- continuous natural regeneration with a mix of species, ages and structures,
- selective harvesting based on balance and wood quality,
- stable income generation while minimising management costs.

Auberive's example demonstrates that ecological and economic goals can align, and that forest management can evolve through dialogue with local communities.

Functions: informational/education

Scale: national

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Legal status: voluntary
Existing or planned instruments: existing
Link: The European network Integrate - BFW

Name of instrument: National Specialist Program for Forest Genetic Resources
Subgroup: Inclusive national planning, incorporating climate and biodiversity concerns, national and local governments, non-party stakeholders
Country: Germany
Detailed description:
The National Specialist Programme for Forest Genetic Resources is the basis for the long-term conservation and sustainable use of forest genetic resources in Germany. It includes measures for the conservation of species diversity, genetic diversity with tree and shrub species, the restoration of populations and the promotion of diverse forest ecosystems.
The Federal-Länder Working Group coordinates the programme on Forest Genetic Resources and Forest Seed Law (BLAG). The Information and Coordination Centre for Biological Diversity (IBV) at the BLE provides support in the form of advisory, documentation and coordination services. Its tasks include:

- centralised documentation of forest genetic resources (FGRDEU-Online),
- development of monitoring methods and indicators,
- international co-operation (FAO, EUFORGEN, etc.),
- public relations and information dissemination.

The programme serves to ensure the adaptability and survivability of tree and shrub species as well as the preservation of healthy forest ecosystems in Germany.
Functions: management of forest genetic resources; resilience building/strengthening the adaptive capacity of the forest against climate impacts
Scale: national
Legal status: voluntary
Existing or planned instruments: existing
Title of the document in English: National specialist program for forest genetic resources, Federal Institute for Agriculture and Food

6. Review of the assessment criteria of the policy instruments

Examples of the assessment criteria of various instruments can be found in the literature. For example, Kudełko and Pękala (2006) proposed criteria for selecting economic

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environmental protection instruments. According to them, the following criteria should determine the choice of a given economic instrument: environmental effectiveness, economic efficiency, distribution effects, feasibility, social acceptability, lack of necessary information. Santos and Ranieri (2013) described criteria for the selected spatial planning instrument - environmental zoning. The European Commission (OECD, 2020) defines eight guiding principles (participation, transparency, certainty, accountability, credibility, cost effectiveness, flexibility and practicality) that should govern Environmental Impact Assessments. Czucz et al. (2021) proposed criteria for ecosystem condition indicators. Moreover, Kiessling and Pütz (2021) define a quality framework for evaluating spatial planning outcomes.

The common feature of these criteria is the social aspect. Social participation, as well as the need to take into account the interests and preferences of different user groups, are an important element of land use, regardless of the country and local context.

The literature lacks clearly defined criteria for assessing the effectiveness of land use instruments, especially in the context of contemporary challenges related to climate change and biodiversity conservation. Europe-LAND proposes five main groups. Firstly, it takes into account the social context and the need for cooperation between different sectors, which is based on a review of the literature. Secondly, it proposes criteria reflecting the impact on climate change and biodiversity, which is in line with the priority objective of the project.

Finally, 21 specific criteria were proposed, divided into five main groups, which are presented in Figure 6:

- impact on climate change,
- impact on biodiversity,
- impact on stakeholders,
- social participation,
- cross-sectoral approach.

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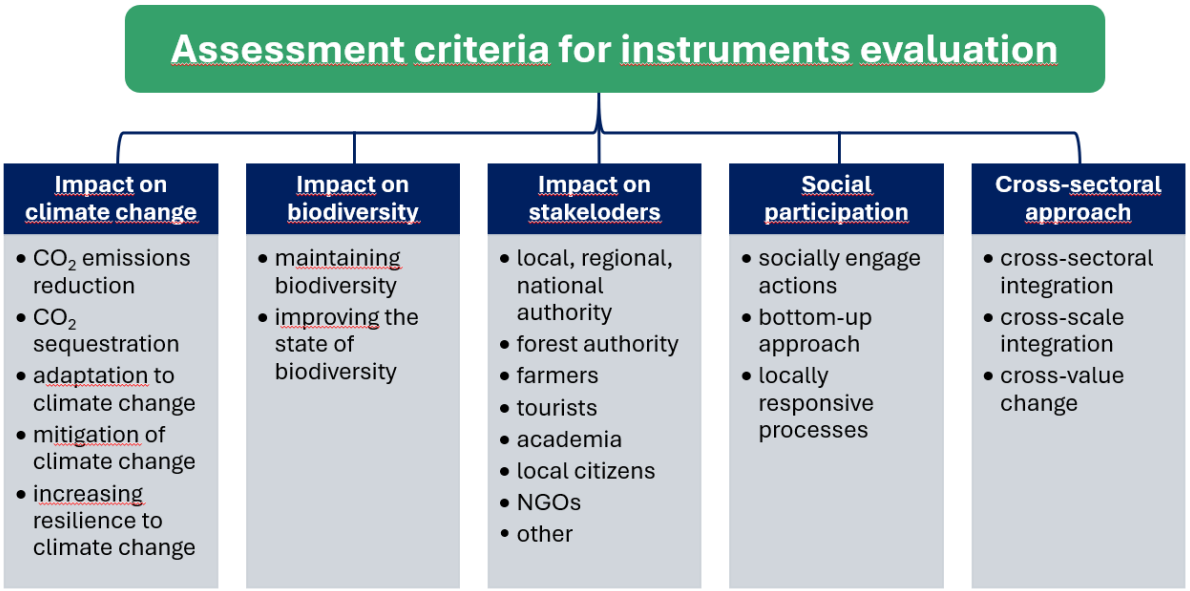

Figure 6. Assessment criteria for instruments analysed in Europe-LAND
Source: own elaboration.

The first group of criteria concerning impact on climate change **stems directly from the overarching objective of the project**, which relates to land-use decisions as well as stakeholders' awareness and engagement regarding climate change and biodiversity challenges. Adaptation to climate change includes measures to minimize vulnerability to current or anticipated effects of climate change, in particular: extreme weather conditions, natural disasters, temperature changes, sea level rise, loss of biodiversity, as well as loss of food and water security (Sobol, 2025, p. 18). Climate change mitigation, on the other hand, includes measures to reduce greenhouse gas emissions and increase their absorption by ecosystems (Bartoszczuk & Wysocka-Fijorek, 2025, p. 29). The last aspect in this group is climate change resilience, understood as the ability of individuals, communities, ecosystems, and socio-economic systems to predict, prevent, prepare for, respond to, recover from, mitigate, and adapt to the effects of climate change. Understood in this way, resilience is an important element of the security system and of maintaining an adequate quality of life for residents (Baron et al., 2025, p. 31).

Five specific criteria were proposed in this group:

- reducing CO_2 emissions,
- CO_2 sequestration,
- adaptation to climate change,
- mitigation of climate change,
- increasing resilience to climate change.

The second group of criteria, also resulting from the overarching objective of the project, is the impact on biodiversity. Biological diversity is an important factor reflecting the state of

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the natural environment and affecting human well-being. Among the most common contemporary threats to biodiversity are: changes in land use, environmental pollution, and invasive alien species (Sylla & Mrozik, 2015, p. 113).

Within this group, two evaluation criteria were proposed:

- maintaining biodiversity,
- improving the state of biodiversity.

Another group of criteria is impact on stakeholders. Land-use management, including spatial planning is a complex and long-term process that involves various groups of decision-makers, often with different goals and interests. The project identified the following eight groups:

- local, regional, national authority,
- forest authority,
- farmers,
- tourists,
- academia,
- local citizens,
- NGOs,
- other.

The last two criteria stem from the **results of the sister project Plus Change** (Plus Change, 2025), which found that changes in land use policy and decision-making leading to future transformations require e.g., enhancing multi-actor participation, a shift from top-down to more inclusive, locally responsive processes; improving cross-sectoral and cross-scale integration, and incorporating bottom-up initiatives and environmental movements (Vaňo et al., 2025).

Public participation in spatial planning primarily concerns the opportunity to participate in the creation of spatial planning acts, in particular by expressing opinions, submitting proposals, and participating in public consultations. Public participation aims to identify the needs and proposals of stakeholders regarding spatial policy, as well as to initiate dialogue between different groups of space users (Article 8e of the Act on Spatial Planning and Development). Three criteria were proposed in this group:

- socially engage actions,
- bottom-up approach,
- locally responsive processes.

The last group of criteria is the cross-sectoral approach, which reflects the multidimensional nature of land-use management. Three criteria have been identified:

- cross-sectoral integration,
- cross-scale integration,
- cross value chain.

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Cross-sectoral integration - the extent to which a climate protection instrument fosters coordination and synergies across multiple policy sectors (e.g. energy, transport, agriculture, urban planning), avoiding siloed approaches and enabling systemic environmental and societal benefits.

Cross-scale integration - the degree to which the instrument ensures coherence and alignment of climate actions across governance levels (local, regional, national, and supranational), including mechanisms for vertical coordination and mutual reinforcement of policy impacts.

Cross-value-chain - the extent to which the instrument addresses the entire value chain of products or services (from resource extraction, through production and distribution, to consumption and end-of-life), promoting sustainability and positive environmental and social outcomes at each stage.

7. Comparative analysis and assessment of selected policy instruments

Taking into account the evaluation criteria for instruments and rationale developed in Section 6, a detailed assessment was conducted for the six instruments listed below, each representing a different category of instruments.

1. Local Spatial Development Plan (Regulatory instrument)
2. Assessment of Good agricultural and environmental conditions (GAEC) (Regulatory instrument)
3. Assessment of Eco-scheme – carbon farming and nutrient management (Economic instrument)
4. Assessment of subsidies for organic farming (Economic instrument)
5. Assessment of The Green Tripartite Agreement (Information and other voluntary instruments)
6. Assessment of the EU network INTEGRATE (Other instruments)

The instruments selected for in-depth assessment represent those that were identified by partners as particularly relevant in their countries. Two instruments were selected from each of the regulatory and economic groups, as these were the groups in which the most instruments had been identified at an earlier stage of the work. From the groups of informational and other instruments, as they were less numerous, one instrument from each group was selected for analysis. Moreover, these six selected instruments are important from the perspective of the farm level behaviour. Regulatory instruments, such as the Local Spatial Development Plan and GAEC requirements, establish binding rules that shape land-use choices and farming practices by setting minimum environmental and spatial standards that

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farmers must comply with. Economic instruments, including eco-schemes and subsidies for organic farming, directly affect farm behaviour by altering the cost–benefit balance of specific practices, thereby incentivising the adoption of more sustainable production methods. Informational and voluntary instruments, such as the Green Tripartite Agreement, influence farm-level behaviour by enhancing awareness, knowledge exchange, and cooperation among farmers and other stakeholders, thereby supporting voluntary changes in management practices. The EU INTEGRATE network is primarily focused on forestry and forest management, so its influence on farm-level behaviour is therefore indirect and mainly relevant for farmers involved in forestry or agroforestry, or through broader land-use coordination and policy learning effects at the regional level.

In the following subsections, examples of the assessment of the selected instruments are presented in tabular form, taking into account the criteria adopted for the analysis.

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7.1. Assessment of Local Spatial Development Plan

Table 7. Local Spatial Development Plan

Criteria	Justification	Examples of qualitative and quantitative measures
Impact on climate change		
CO_2 emissions reduction CO_2 sequestration Adaptation to climate change Mitigation of climate change Increasing resilience to climate change	The local spatial development plan (LSDP) defines, among others, the principles of protection and shaping of spatial order, the principles of protection of the environment, nature and landscape. LSDP can influence CO_2 emissions through land development - promoting low-carbon forms of transportation and energy efficiency of development. LSDP can support the landscape's natural ability to sequester carbon by protecting green space, forests, wetlands, or soil. LSDP can promote adaptation through floods. Increasing resilience protection, water retention, and increasing green space	• % of biologically active area • area of retention areas • examples of adaptive solutions (e.g., green roofs, urban cooling systems) • surface area of jammed areas • percentage of new development investments equipped with an alternative energy source • blue-green infrastructure
Impact on biodiversity		
Maintaining biodiversity Improving the state of biodiversity	The plan protects existing natural elements – habitats, species, ecological corridors, natural systems, soil and water relations.	• % of the plan area covered by various forms of nature protection • number/range of ecological corridors • number/range of newly designed green areas
Impact on stakeholders		
Group of stakeholders: Local, regional, national authority, forest authority, farmers, tourists, academia, local citizens, NGOs, other	The provisions of LSDP affect the opportunities for action and decisions of various groups of stakeholders.	• possibility or otherwise of development/change of use (all groups) • restrictions or incentives for investment (applies primarily to local authority, forest authority, farmers, and local citizens)

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Criteria	Justification	Examples of qualitative and quantitative measures
		• change in quality of life – availability of services, noise, traffic, green area (applies primarily to local citizens) • restrictions of nature conservation, opportunities to influence future decisions (applies primarily to forest authority, farmers and local citizens)
Social participation		
Socially engage actions Bottom up approach Locally responsive processes	The creation of a local spatial development plan requires social participation. Examples of forms of social participation include submitting proposals and comments, participating in public consultations, and meetings of various groups of space users, e.g., in the form of charrette workshops.	• number of comments submitted to the draft LSDP during public consultations, • number of meetings/consultations with stakeholders • number of changes to the draft plan as a result of stakeholder voice • diversity of stakeholder groups participating in social • consultations • types of stakeholder information channels used (online, meetings, research walks) • consultations for the elderly or people with disabilities, for vulnerable people
Cross-sectoral approach		
Cross-sectoral integration Cross-scale integration Cross-value change	Spatial planning should integrate objectives, knowledge and needs from different sectors, at different levels (local, regional, national). A cross-sectoral approach within a Local Spatial Development Plan refers to the intentional integration and coordination of multiple policy sectors - such as land use, housing, transport, energy, water management, environmental protection, public health, social services, and economic development - within one coherent planning framework. It ensures that spatial planning decisions are not isolated but aligned across different sectoral priorities, allowing for synergies, conflict	Cross-sectoral integration: • number of policy sectors formally consulted during the LSDP preparation (e.g. transport, energy, water management, social services, biodiversity) • presence of jointly coordinated objectives across sectors (e.g. transport–housing–green infrastructure co-planning)

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Criteria	Justification	Examples of qualitative and quantitative measures
	resolution, and co-benefits. This approach goes beyond merely consulting other departments - it implies joint strategy-making, shared objectives (e.g. compact urban form, low-emission mobility, green infrastructure), and mechanisms for continuous intersectoral coordination during both plan design and implementation.	• degree of alignment between the LSDP and sectoral strategies (energy strategy, flood risk plan, mobility plan) — qualitative scoring • number of interdepartmental workshops or cross-sector task force meetings held during drafting • identification and resolution of intersectoral conflicts (e.g. land for logistics vs. land for ecosystem services) — count or documented cases Cross-scale integration: • consistency of LSDP objectives with higher-level regional/national/EU strategies (e.g. alignment with National Spatial Plan or EU Biodiversity Strategy) • number of formal consultations with regional or national authorities during plan development • degree of downward/local feedback incorporated into final plan version (measured as % of local consultation inputs reflected in the final plan) • mechanisms established for ongoing vertical coordination post-adoption (e.g. monitoring committees, annual harmonisation meetings) • documented cases where LSDP triggered adjustments in regional or national planning frameworks Cross-value-chain integration: • extent to which the LSDP addresses multiple stages of the urban development value chain (e.g. planning → construction → mobility infrastructure → service delivery → reuse/redevelopment)

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Criteria	Justification	Examples of qualitative and quantitative measures
		• inclusion of circular economy principles (e.g. land recycling, brownfield revitalisation, adaptive reuse frameworks) • involvement of upstream (developers) and downstream (citizens, service providers) stakeholders in co-design • mechanisms encouraging long-term sustainability beyond the construction phase (e.g. performance-based zoning, lifecycle urban impact assessment) • traceability requirements or standards for development actors across planning-to-execution phases

Source: own elaboration.

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7.2. Assessment of Good agricultural and environmental conditions (GAEC)

Table 8. Assessment of Good agricultural and environmental conditions (GAEC)

Criteria	Justification	Examples of qualitative and quantitative measures
Impact on climate change		
CO_2 emissions reduction	Maintaining soil in good condition improves soil carbon retention and limits its release into the atmosphere, thus contributing to reduced CO_2 emissions. Good practices increase the amount of soil organic matter, which leads to CO_2 sequestration and reduces methane and nitrous oxide emissions	CO_2 emissions reduction: • annual reduction in greenhouse gas emissions (t CO_2-eq/ha/year) on GAEC-compliant land • decrease in synthetic fertilizer use (kg N/ha) as a proxy for nitrous oxide (N_2O) emissions • reduction in diesel use for field operations per hectare (litres/ha) CO_2 sequestration: • increase in soil organic carbon stock (t CO_2-eq/ha) over baseline period • area of permanent grassland maintained or restored (ha) under GAEC obligations • share of farmland with cover crops or agroforestry practices enhancing carbon storage • Surface area of rewet or restored peatlands (ha) • Share of peatland area under active protection or restoration measures (%) • Area of peatland where drainage has been stopped / reversed (ha) • Decrease in peat extraction or drainage permits issued per year Adaptation to climate change: • share of farms implementing erosion control or water retention measures (e.g. buffer strips, contour farming)
CO_2 sequestration		
Adaptation to climate change		
Mitigation of climate change		
Increasing resilience to climate change		

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Criteria	Justification	Examples of qualitative and quantitative measures
		• increase in water infiltration capacity or drought resilience index of soils • number/% of farms reporting reduced climate-related yield variability Mitigation of climate change: • total GHG emissions balance per hectare or per farm (t CO_2-eq) before vs after GAEC adoption • extent of nutrient runoff reduction (nitrate/phosphate levels), improving ecosystem carbon functioning • adoption rate of low-emission manure or fertilisation practices Increasing resilience to climate change: • improvement in soil structure quality index (e.g. water retention, erosion resistance) • diversity of crop rotations or share of climate-resilient crop varieties introduced
Impact on biodiversity		
Maintaining biodiversity	Good agricultural practices contribute to increased plant species diversity and contribute to the diversity of the landscape	• number of plant species (per 1 m^2) • percentage of agricultural land where good agricultural practices are applied • percentage of agricultural land meeting soil erosion prevention standards, e.g. area with mandatory cover crops or contour farming. • share of farmland under buffer strips or riparian protection zones to prevent nutrient runoff into water bodies. • extent of permanent grassland maintained or restored in relation to baseline year (hectares or %). • compliance rate with soil organic matter maintenance requirements, e.g. crop rotation or residue management practices implemented.
Improving the state of biodiversity		

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Criteria	Justification	Examples of qualitative and quantitative measures
		• proportion of farms applying restrictions on tillage operations in sensitive or high-risk erosion zones. • area of agricultural land registered with water protection measures, including wetland preservation or peatland protection
Impact on stakeholders		
Group of stakeholders: local, regional, national authority, forest authority, farmers, tourists, academia, local citizens, NGOs, other	The instruments have an impact on farmers and consumers. Good practices provide benefits for farmers by enriching the soil with nitrogen and organic matter. This allows for higher yields and improved quality, which translates into higher future incomes. Benefits for consumers: access to high-quality food, a diverse landscape, which positively impacts mental and physical health.	Farmers / agricultural producers • compliance costs per hectare or per farm • perceived administrative burden (survey-based index) • adoption rate of GAEC practices among different farm types (e.g. arable, livestock, small-scale) • change in farm income stability or yield variability in GAEC-affected areas Local communities: • public perception of landscape quality / cultural ecosystem services (survey-based) • job retention or creation in rural areas linked to GAEC-compliant farming • level of public acceptance or support for GAEC policies Policymakers / administration / governance actors • compliance rate with GAEC standards across regions (%) • number of detected non-compliance cases and enforcement actions taken • cost-effectiveness ratio (environmental benefit per euro of public expenditure) • degree of policy coherence with other CAP or Green Deal objectives
Social participation		
Socially engage actions		Socially engaged actions

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Criteria	Justification	Examples of qualitative and quantitative measures
Bottom-up approach	The introduction of good agricultural practices contributes to the dissemination of knowledge about the relationships between agriculture and the environment at all levels (local, regional, national).	• number or share of stakeholders actively involved in implementation processes (e.g. farmers, residents, NGOs) • participation rate in public consultations or co-creation workshops • level of perceived legitimacy / trust in the instrument (survey-based index) • diversity of stakeholders represented (e.g. gender, age groups, marginalised groups) • number of community-led initiatives emerging as a result of the instrument • a number of seminars, training courses, workshops, and lectures
Locally responsive processes		Bottom-up approach • degree of decision-making power delegated to local actors (e.g. % of budget or measures designed locally) • number of bottom-up project proposals submitted and approved • level of community satisfaction with their influence on design and implementation (survey-based indicator) • presence of formal mechanisms for stakeholder co-design or co-governance (yes/no + qualitative depth) • share of practices/solutions originated from local knowledge rather than top-down prescriptions Locally responsive processes • extent to which local socio-environmental needs are reflected in the final instrument design (expert assessment score) • adaptation rate of measures to specific local ecological, cultural or economic conditions • time required to adjust or refine the instrument in response to local feedback

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Criteria	Justification	Examples of qualitative and quantitative measures
		• number of local adaptation requests submitted and incorporated • perceived relevance and appropriateness of the instrument for the local context (survey-based indicator)
Cross-sectoral approach		
Cross-sectoral integration Cross-scale integration Cross-value change		Cross-sectoral integration: • number of sectors formally involved in the design and implementation process (e.g. agriculture, transport, energy, spatial planning) • existence of interdepartmental coordination mechanisms (e.g. joint task forces, shared budget lines) • degree of policy alignment with other sectoral strategies or regulatory frameworks (expert assessment score) • number of co-funded or jointly implemented cross-sectoral projects Cross-scale integration: • extent to which local/regional feedback is incorporated into national-level decisions (survey or document analysis index) • number of multi-level governance platforms or working groups established • share of implementation responsibilities delegated to lower governance levels • consistency of targets and indicators across scales (e.g. local vs national adaptation strategies)

Source: own elaboration.

7.3. Assessment of Eco-scheme – carbon farming and nutrient management

Table 9. Assessment of Eco-scheme – carbon farming and nutrient management

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Criteria	Justification	Examples of qualitative and quantitative measures
Impact on climate change		
CO_2 emissions reduction CO_2 sequestration Adaptation to climate change Mitigation of climate change Increasing resilience to climate change	The main goal of eco-schemes is to increase the amount of organic carbon stored in the soil, which contributes to combating climate change by absorbing CO2 from the atmosphere. They are implemented through, among other things, no-till farming, the use of cover crops and mulch, and the improvement of biodiversity and soil quality	CO_2 Emissions Reduction: • reduction in synthetic nitrogen fertilizer use (kg N/ha) among participating farms (as a proxy for reduced N_2O and CO_2 equivalent emissions) • decrease in on-farm fuel (diesel) consumption for tillage/field operations (litres/ha) post-adoption of the scheme • share (%) of participating farms switching to low-emission manure/fertiliser management practices (e.g., nitrification inhibitors, split-applications) • yearly decrease in direct GHG emissions (t CO_2-eq/ha/year) reported by farms covered by the eco-scheme CO_2 Sequestration: • change in soil organic carbon stock (t CO_2-eq/ha) on land under the eco-scheme compared to baseline • area (ha) of arable/grassland under the eco-scheme with practices explicitly aimed at carbon capture (e.g., cover crops, agro-forestry, perennial cropping) • annual increase in embodied carbon captured in biomass/carbon-rich practices (e.g., agro-forestry trees, hedgerows) on scheme farms (t CO_2/yr) • number or share of farms implementing “carbon farming” practice lists included in the eco-scheme (e.g., introduction of legumes, no-till, perennial crops) Adaptation to Climate Change: • percentage of farms which adopt soil-improving practices under the scheme (e.g., increased organic matter, cover crops) that enhance water retention or drought resilience

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Criteria	Justification	Examples of qualitative and quantitative measures
		• change in soil water infiltration rate or field-capacity (mm or %) on participating farms over time • reduction in yield variability (e.g., coefficient of variation of yields) across years for farms under the scheme compared to non-participating farms • increased uptake of cropping systems or rotations included in the eco-scheme that are more climate-resilient (e.g., drought-tolerant crops, more diverse rotations) Mitigation of Climate Change: • net GHG balance (t CO_2-eq/ha/year) for participating farms: (emissions avoided + sequestration achieved) minus any additional emissions, tracked over time • share (%) of participating agricultural area under practices explicitly targeted to climate mitigation (as defined in the eco-scheme design) • reduction in N_2O and CH_4 emissions (t CO_2-eq) from agriculture on scheme farms (via measurements, modelling or proxies) • cost-effectiveness: €/t CO_2-eq mitigated through the eco-scheme (public expenditure vs. climate benefit) Increasing Resilience to Climate Change: • percentage of farms covered by the scheme where farm business continuity planning or risk-management practices (e.g., diversification, soil health improvement) have been adopted • increase in the diversity of crops or land uses on participating farms (index of crop/land-use diversity), which enhances resilience to shocks

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Criteria	Justification	Examples of qualitative and quantitative measures
		• share (%) of farms participating in the scheme that report improved capacity to cope with climate-related stresses (survey-based resilience score)
Impact on biodiversity		
Maintaining biodiversity Improving the state of biodiversity	Eco-schemes promote sustainable agriculture by increasing biodiversity in agricultural production through good practices such as extensive land use, the introduction of cover crops, and compliance with fertilisation plans. Area-based eco-schemes aim to support sustainable development and protect natural resources, water, soil, and air as well as preserve biodiversity	Maintaining biodiversity: • share (%) of agricultural land enrolled in the eco-scheme that maintains semi-natural habitats, such as hedgerows, buffer strips, flower strips, wetlands, or fallows • number / proportion of High Nature Value (HNV) farmland parcels that remain under active protection through the eco-scheme • stability of species richness index for indicator species (e.g. farmland birds, pollinators) monitored annually • area (ha) of non-productive landscape features deliberately retained (e.g. field margins, tree lines, ponds) per participating farm • reduction in pesticide/herbicide application intensity (kg active substance/ha/year) on eco-scheme farms Improving the state of biodiversity: • increase in abundance or species richness of pollinators or farmland birds (e.g. number of species / individuals per monitoring site) • area (ha) of newly created or restored habitats under the eco-scheme (e.g. wetland restoration, new hedgerows, agroforestry plots) • increase in flowering cover / plant diversity on grassland or cover crop parcels (measured via botanical survey or habitat quality index)

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Criteria	Justification	Examples of qualitative and quantitative measures
		• number / proportion of farms applying biodiversity-enhancing crop rotations (e.g. inclusion of legumes, multi-species cover crops) • habitat quality improvement score based on standardized ecological assessment (e.g. plant structural diversity, pollinator resource availability)
Impact on stakeholders		
Group of stakeholders: Local, regional, national authority, forest authority, farmers, tourists, academia, local citizens, NGOs, other	The Eco-scheme – carbon farming and nutrient management generates multi-dimensional effects across a broad spectrum of stakeholders. For farmers, it primarily offers financial incentives to adopt climate-smart practices while simultaneously improving long-term soil health, water retention, and yield stability. At the same time, the transition may involve initial costs, technical learning demands, and increased administrative requirements linked to monitoring and reporting obligations. Local rural communities benefit indirectly through enhanced landscape quality, cleaner water systems, and greater resilience to climate extremes such as floods and droughts — in some cases also generating new employment opportunities in advisory, research or ecosystem service markets. Environmental organisations and civil society actors gain from the scheme's strong alignment with the EU Green Deal and biodiversity strategies, obtaining clearer opportunities for participatory monitoring and community-driven ecological stewardship. For agri-food value chain actors, the instrument provides the basis for low-carbon, sustainability-certified supply chains, improving compliance with EU sustainability regulations while increasing the resilience of raw material sourcing. Finally, for public authorities, the eco-scheme functions as a measurable and politically legitimising tool to deliver on EU	• changes in consumption of inputs (fertilisers, fuel) • changes in production costs • amount of financial support for farmers • % of participating farms adopting carbon-farming / nutrient management practices • change in average production costs per ha (€/ha) or fertilizer use reduction (kg N/ha) • farmer satisfaction / perceived administrative burden (survey-based index) • number of local jobs created in advisory or environmental monitoring services • reduction in flood/drought damage reports or emergency intervention costs (€/year) • public perception of environmental benefits (survey-based legitimacy/trust index) • number of companies sourcing from eco-scheme-compliant farms

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Criteria	Justification	Examples of qualitative and quantitative measures
	climate and biodiversity commitments, reinforcing the principle of “public money for public goods” while reducing long-term environmental and adaptation costs	
Social participation		
Socially engage actions Bottom-up approach Locally responsive processes	Expanding knowledge about carbon farming (local, regional, national); promoting environmental protection and sustainable food production	Socially engaged actions: • participation rate in eco-scheme training sessions, co-creation workshops or consultation meetings (% of invited stakeholders that attend) • number of jointly initiated community or farmer-led pilot projects created under the eco-scheme • diversity index of stakeholder groups involved (e.g. farmers, NGOs, youth, women, local businesses) • perceived level of trust and legitimacy of the eco-scheme (survey-based social acceptance index) Bottom-up approach: • number of formal feedback loops (e.g. community review sessions, participatory design panels) integrated into the eco-scheme governance • degree of decision-making power delegated to local actors (budget or measure-design autonomy index) • inclusion rate of local knowledge or traditional practices explicitly documented in the final eco-scheme design (% of adopted suggestions) Locally responsive processes: • extent to which eco-scheme practices are tailored to local agro-climatic or socio-cultural conditions (expert assessment score) • number of local adaptations officially approved (e.g. region-specific variants of the scheme)

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Criteria	Justification	Examples of qualitative and quantitative measures
Cross-sectoral approach		
Cross-sectoral integration Cross-scale integration Cross-value change	The Eco-scheme – carbon farming and nutrient management is designed as a systemically integrated instrument that operates across sectors, governance levels and value chain stages. From a cross-sectoral integration perspective, it aligns agricultural practices with climate policy, water management, biodiversity strategy and rural development objectives, ensuring that its implementation generates synergies rather than policy trade-offs. At the same time, it embodies cross-scale integration, as it requires coordination between EU-level strategic targets, national CAP strategic plans and local implementation structures, while allowing feedback loops so that local and regional needs can inform higher-level policy adjustment. Furthermore, the eco-scheme promotes cross-value-chain integration by addressing not only on-farm practices, but also upstream input decisions (e.g. fertilisation strategy) and downstream impacts on food markets, certification systems and sustainability reporting, thereby embedding climate performance across the entire agri-food system rather than at farm level alone.	Cross-sectoral integration: • number of sectoral institutions formally involved in the design or implementation of the eco-scheme • degree of alignment with other sectoral strategies (e.g. water directive, biodiversity strategy, bioeconomy plan) — expert scoring • share of eco-scheme measures with multi-sector co-benefits (e.g. carbon + water + biodiversity) • number of joint inter-ministerial or inter-agency coordination meetings/seminars etc. per year • reduction in identified policy conflicts or overlaps reported across sectors Cross-scale integration: • number of formal consultation rounds conducted between national and regional/local authorities • extent to which local feedback is incorporated into final eco-scheme implementation (% of accepted suggestions) • consistency of eco-scheme targets with national CAP objectives and EU Green Deal goals (alignment index) • existence of mechanisms for ongoing vertical coordination (e.g. monitoring committees, feedback loops) — yes/no + depth assessment • number of locally adapted eco-scheme variants or region-specific implementation models approved Cross-value change: • number of downstream market actors (e.g. processors, retailers) engaged in eco-scheme cooperation or certification

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Criteria	Justification	Examples of qualitative and quantitative measures
		• presence of traceability/tracking systems linking on-farm carbon performance to end-product claims — yes/no + quality level • extent to which upstream decisions (e.g. fertilizer sourcing, input choices) are modified due to eco-scheme participation • inclusion of eco-scheme performance data in corporate ESG / CSRD reporting (number or share of firms)

Source: own elaboration.

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7.4. Assessment of subsidies for organic farming

Table 10. Assessment of subsidies for organic farming

Criteria	Justification	Examples of qualitative and quantitative measures
Impact on climate change		
CO_2 emissions reduction CO_2 sequestration Adaptation to climate change Mitigation of climate change Increasing resilience to climate change	Subsidies for organic farming can have a positive impact on climate change mitigation and adaptation by incentivising agricultural practices that reduce greenhouse gas emissions and enhance ecosystem resilience. By discouraging the use of synthetic nitrogen fertilisers – a major source of nitrous oxide emissions – and promoting practices such as crop rotation, cover cropping and the maintenance of permanent grasslands, organic farming systems typically generate lower emissions per hectare compared to conventional farms. In addition, organic soils often contain higher levels of organic matter and have greater capacity for carbon sequestration, especially when combined with agroecological practices. Beyond mitigation, these systems also contribute to climate adaptation by improving soil structure, water retention and biodiversity, which increases resilience to droughts, floods and other climate-related stressors. However, it is important to note that the climate benefits depend on effective policy design — poorly targeted subsidies may lead to lower yields and indirect land-use change if not accompanied by efficiency and sustainability safeguards.	• number or percentage of farms receiving the subsidy • area of land (ha) enrolled under the subsidised scheme • farmer participation rate relative to eligible population (%) • change in farm net income attributable to the subsidy (%) • change in soil organic carbon stock (t CO_2-eq/ha) • share (%) of subsidised area under low-carbon practices (e.g. permanent grassland, cover crops, agroforestry) • GHG emissions per hectare (t CO_2-eq/ha/year) before vs. after subsidy uptake • reduction in synthetic nitrogen fertiliser use (kg N/ha/year) • drought/flood resilience score based on farm-level risk assessment • increase in crop diversity or rotation complexity index
Impact on biodiversity		
Maintaining biodiversity Improving the state of biodiversity	Organic farming has a positive impact on biodiversity because it avoids synthetic pesticides and fertilizers, maintains natural habitats such as hedgerows and field margins, promotes diverse crop rotations, and supports richer soil life — all of which create	• Increase in species richness or abundance of key indicator groups (e.g. pollinators, birds, flora) on subsidised farms compared to baseline

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Criteria	Justification	Examples of qualitative and quantitative measures
	more favourable conditions for pollinators, insects, birds, and other wildlife compared to conventional farming.	• Increase in plant diversity score in crop rotation or grassland systems (e.g. number of species per m^2) • percentage of eligible farmers participating in the subsidy scheme • total agricultural area converted to or maintained under organic farming (ha or % of UAA) • share (%) of farmland under organic management that retains semi-natural habitats (e.g. hedgerows, buffer strips, wetlands) • stability of farmland bird or pollinator populations on subsidised organic farms (e.g. no decline in species richness or abundance) • area (ha) of permanent grassland or traditional landscape features maintained through subsidies • reduction or stability in pesticide/herbicide use intensity (kg active substance/ha/year) • index of soil biological activity (e.g. earthworm abundance or soil microbial biomass maintained at baseline or higher)
Impact on stakeholders		
Group of stakeholders: Local, regional, national authority, forest authority, farmers, tourists, academia, local citizens, NGOs, other	The introduction of subsidies for organic farming has a direct positive impact on farmers, as it improves their financial viability and reduces the economic risk associated with transitioning to or maintaining organic production. For consumers and local communities, it helps increase the availability of healthier food and supports environmental quality, contributing to cleaner water, healthier soils and more attractive rural landscapes. Environmental organisations and civil society benefit from the preservation and restoration of ecosystems and biodiversity, which align with climate and sustainability goals. For agri-food market actors, such subsidies stimulate the development of new low-carbon, high-value supply chains and enhance market differentiation. Finally, for public authorities, they represent a	• change in farm income attributable to the subsidy (€ per farm or % increase) • net profitability per hectare of organic vs. conventional farming (€/ha) • change in organic production volume or area (ha/year or % growth rate) • market share of organic products (% of national or regional agri-food market) • administrative cost-share (% of total subsidy budget spent on bureaucracy/implementation) • number of local jobs created or retained in organic farming and supply chains (FTEs (Full-Time Equivalents)/year)

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Criteria	Justification	Examples of qualitative and quantitative measures
	strategic tool for delivering on climate, biodiversity and sustainability targets, while simultaneously strengthening the legitimacy and social acceptance of agricultural policy	• growth in local/short supply chain initiatives linked to organic products (number of outlets, markets, co-ops) • share (%) of organic products entering the certified or premium market • increase in consumer demand (% sales growth of organic products domestically or export) • inclusion of organic sourcing in ESG/CSRD reports (number of firms reporting climate/biodiversity benefits)
Social participation		
Socially engage actions Bottom-up approach Locally responsive processes	Subsidies for organic farming can significantly enhance social engagement in rural areas, as they often encourage farmers to cooperate with local communities, consumers, NGOs, and advisory services. Because organic farming is rooted in environmental stewardship and transparency, it tends to increase public trust and participation; for example, through community-supported agriculture, local food networks, farmers' markets, rural eco-education initiatives, or citizen science monitoring of biodiversity. Moreover, these subsidies frequently require or incentivise knowledge exchange, farmer-to-farmer learning, and participatory advisory systems, which further strengthen social cohesion and collective responsibility for sustainable land management. In this way, the instrument not only transforms agricultural practices but also fosters active social involvement and co-creation, rather than being a purely technical or top-down policy tool.	• number or percentage of farmers participating in community-based or cooperative organic initiatives • attendance rate at training sessions, workshops or public information meetings (% of invited stakeholders) • number of partnerships with local NGOs, schools, or citizen science groups • farmer and community satisfaction / trust level (survey-based social acceptance or legitimacy index)
Cross-sectoral approach		
Cross-sectoral integration Cross-scale integration Cross-value change	A cross-sectoral approach to subsidies for organic farming means that the instrument is designed and implemented in coordination with multiple policy sectors, not only agriculture. Instead of supporting organic farming solely for food production,	Cross-sectoral integration: • number of policy sectors officially involved in the design/implementation and modification of the subsidy (e.g. agriculture + environment + health)

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Criteria	Justification	Examples of qualitative and quantitative measures
	the subsidy is aligned simultaneously with climate policy, water protection, biodiversity conservation, public health, rural development and even market/consumer policy. This means that the subsidy serves multiple public goals at the same time - for example, reducing pesticide pollution (environment sector), improving water quality (water management sector), enhancing carbon sequestration (climate sector), supporting healthy diets (public health sector), and strengthening rural economies (social development sector). In practice, it also implies cooperation between different ministries and institutions, shared monitoring systems, and avoidance of conflicting incentives — ensuring that public funds for organic farming deliver integrated, multi-benefit outcomes, rather than solving only one sector's problem in isolation.	• degree of alignment with other policy strategies (e.g. Water Framework Directive, Biodiversity Strategy, Farm to Fork) — assessed via expert scoring • share of subsidy-supported practices that generate multi-sector co-benefits (e.g. carbon + biodiversity + water protection) • number of inter-ministerial or inter-agency coordination meetings per year related to subsidy implementation • reduction in identified policy conflicts or overlaps between sectoral regulations or instruments Cross-scale integration: • number of region-specific or locally adapted implementation models officially approved • existence and quality of multi-level monitoring or feedback mechanisms — yes/no + qualitative assessment • extent to which local/regional feedback is reflected in final subsidy rules (% of accepted proposals) Cross-value change: • share of organic products from subsidised farms entering certified or sustainable value chains (%) • number of supply chain actors (processors, retailers) collaborating with organic farms under formal agreements • presence of traceability or sustainability reporting systems linking farm-level practices to market claims — yes/no + depth score • change in demand for organic products (% market growth attributable to subsidy-supported supply)

Source: own elaboration.

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7.5. Assessment of The Green Tripartite Agreement

Table 11. Assessment of The Green Tripartite Agreement

Criteria	Justification	Examples of qualitative and quantitative measures
Impact on climate change		
CO_2 emissions reduction CO_2 sequestration Adaptation to climate change Mitigation of climate change Increasing resilience to climate change	The Green Tripartite Agreement is expected to have a significant positive impact on climate change by both reducing emissions and enhancing natural carbon sinks. The introduction of a CO_2 tax on livestock production directly incentivises lower agricultural emissions, while the large-scale restoration of 140,000 ha of low-lying peatlands and the establishment of 250,000 ha of new forests will substantially increase CO_2 sequestration. These land-use measures also contribute to climate change adaptation and mitigation by improving landscape water retention, reducing flood and drought risks, and protecting vulnerable ecosystems. As a result, the initiative strengthens Denmark's climate resilience, offering long-term ecological stability while accelerating the agricultural sector's transition toward a low-emission future. The Green Tripartite Agreement incorporates measures such as: • a CO_2 tax on agriculture, • conversion of 140,000 hectares of low-lying land into nature areas, • planting of 250,000 hectares of new forest.	• amount of CO_2 emissions reduction (tonnes CO_2e) • amount of nitrogen reduction (tonnes) • hectares of forest established • hectares of farmland converted into natural areas
Impact on biodiversity		
Maintaining biodiversity Improving the state of biodiversity	One of the key goals of agreements and plans is to convert 140,000 hectares of agricultural land near water bodies into natural areas. The groups may also begin planning the placement of 250,000 hectares of new forest, although this is not a requirement.	• the area of converted low-lying farmland into natural landscapes (ha) • the area of the new forest (ha) • number of created new national parks, peri-urban national park • area of marine environment zone improvement (ha)

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		• level of reducing hypoxia in Danish fjords and coastal waters
Impact on stakeholders		
Group of stakeholders: Local, regional, national authority, forest authority, farmers, tourists, academia, local citizens, NGOs, other	The Green Tripartite Agreement will have a direct and visible impact on residents living in rural and peri-urban areas. The large-scale conversion of 140,000 hectares of low-lying agricultural land into natural landscapes and the planting of 250,000 hectares of new forest will improve air quality, water retention, flood protection and access to nature, enhancing everyday living conditions and public health. Local communities may benefit from new recreational areas, eco-tourism potential and green jobs, while at the same time experiencing changes in the economic structure of their regions due to the withdrawal of some agricultural land from production. The introduction of a CO_2 tax on agriculture is expected to accelerate the green transition of the food system, which may result in changes in food prices or dietary preferences, indirectly influencing all citizens as consumers. Because the agreement is negotiated with farmers' organisations, trade unions and environmental groups, it increases public legitimacy and social acceptance, ensuring that the transformation is not purely top-down but reflects broader societal interests — including those of ordinary residents who expect cleaner, safer and more climate-resilient living environments	• revenue from the CO_2 tax on livestock production • annual public and private investment in biosolutions, climate technologies, and plant-based food innovations (in EUR million) • number of green projects financed (e.g. nature restoration, reforestation, carbon farming) • average funding per project (EUR/project) • number of farmers and landowners eligible for compensation and support • number of actors engaged in founding
Social participation		
Socially engage actions Bottom-up approach Locally responsive processes	Social partners played a central role in shaping the Green Tripartite Agreement. Their participation was not only encouraged by the institutional framework but also actively sought by the organisations themselves. The Green Tripartite Agreement places strong emphasis on social participation by actively involving farmers' organisations, environmental NGOs, labour unions and local communities in both the negotiation and implementation process. Instead of imposing top-down measures, it relies on dialogue and co-creation, ensuring that those directly affected, especially rural residents and landowners, have a	• number of active local tripartite groups (out of 23) established to implement nature protection measures such as afforestation and wetland restoration on lowland soils • number of stakeholders actively participating in tripartite group meetings (farmers, NGOs, residents, etc.) • participation rate (%) of invited local actors who attend consultations or meetings

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	voice in shaping land-use changes such as afforestation and wetland restoration. This collaborative model enhances public legitimacy and local ownership of climate action, strengthening social acceptance and long-term commitment to environmental transition.	• number of co-developed local nature restoration projects initiated by communities • perceived trust/acceptance score among residents (survey-based social legitimacy index)
Cross-sectoral approach		
Cross-sectoral integration Cross-scale integration Cross-value change	The Green Tripartite Agreement in Denmark exemplifies a robust cross-sectoral approach by aligning the agriculture sector with climate policy, biodiversity protection, water quality management and land-use planning in a single, integrated framework. Rather than treating farming as an isolated domain, the agreement brings together ministries of agriculture, environment and finance, alongside actors from the food industry, environmental NGOs and land-owners, to coordinate actions ranging from livestock carbon pricing to large-scale afforestation and wetland restoration. This coordinated design ensures that subsidies, tax mechanisms and land-use changes produce co-benefits, such as increased carbon sequestration, cleaner waterways and enhanced nature habitats, while avoiding conflicting incentives (for example, between production-intensive farming and ecosystem protection). In doing so, Denmark's pact sets a precedent for policy coherence across multiple sectors, shifting from silo-based interventions to a holistic model of sustainable agricultural transformation	• number and differentiation of political parties and organizations engage into agreement such us: The Government, along with the political parties Socialist People's Party (SF), Danish Social Liberal Party (Radikale Venstre), the Liberal Alliance, and the Conservative People's Party (Det Konservative Folkeparti); Local Government Denmark (KL); Danish Agriculture & Food Council (Landbrug & Fødevarer); The Danish Society for Nature Conservation (Danmarks Naturfredningsforening); The Food Workers' Union NNF (Fødevareforbundet NNF); The Danish Metalworkers' Union (Dansk Metal); The Confederation of Danish Industry (Dansk Industri) • number of programmes or plans or initiatives included goals from different sectors • number and structure of steering committees established

Source: own elaboration.

Table 12. Assessment of the EU network INTEGRATE

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Criteria	Justification	Examples of qualitative and quantitative measures
Impact on climate change		
CO_2 emissions reduction CO_2 sequestration Adaptation to climate change Mitigation of climate change Increasing resilience to climate change	The European Network INTEGRATE contributes to climate change action primarily through the promotion of forest management practices that enhance both carbon sequestration and ecosystem resilience. By integrating biodiversity conservation into sustainable forest management, the initiative supports the maintenance and expansion of healthy, mixed-species and structurally diverse forests, which are more effective at capturing and storing CO_2 over the long term. At the same time, reducing the risk of large-scale forest disturbances — such as drought-induced dieback, pests or wildfires — indirectly contributes to CO_2 emissions reduction by preventing carbon loss from degraded or damaged forests.	• number of demonstration and learning sites called Marteloscope sites • increase in average carbon stock per hectare in forests managed under Integrate Network principles (t CO_2-eq/ha/year) • net annual increase in living biomass and soil carbon stock in Integrate-managed forests (t CO_2-eq/ha/year) • share (%) of forest area managed with climate-resilient, mixed-species or uneven-aged silvicultural systems aligned with Integrate guidelines • contribution of Integrate-informed forests to national LULUCF carbon sink targets (t CO_2eq/year formally reported to EU inventory) • reduction in climate-related forest mortality or damage incidents (e.g. drought dieback, pest outbreaks, windstorm losses) per 1,000 ha in participating forests
Impact on biodiversity		
Maintaining biodiversity Improving the state of biodiversity	The European Network INTEGRATE has a direct and positive impact on biodiversity conservation by promoting forest management approaches that integrate ecological values into everyday forestry practice. Instead of separating conservation and timber production into isolated zones, the initiative supports integrated forest management where habitat diversity, deadwood, native species composition and structural variation are actively maintained within productive forests	• share (%) of forest area managed under Integrate principles that preserves existing habitat features (e.g. old trees, deadwood, retention patches) • stability or no decline in indicator species populations (e.g. forest birds, saproxylic beetles, fungi) • amount of deadwood volume maintained per hectare (m^3/ha) — a key habitat indicator under EU biodiversity policy • number of forest management plans explicitly referencing biodiversity conservation objectives
Impact on stakeholders		

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Criteria	Justification	Examples of qualitative and quantitative measures
Group of stakeholders: local, regional, national authority, forest authority, farmers, tourists, academia, local citizens, NGOs, other	The European Network INTEGRATE creates value for a wide range of stakeholders by promoting forest management approaches that balance economic, ecological and social objectives. Forest owners and managers benefit from access to cutting-edge knowledge, training, and practical demonstration sites that help them make forests more resilient to climate and market risks without sacrificing productivity. Environmental organisations and scientists gain a platform to advance biodiversity-friendly forestry, co-develop best practices and influence national policy through evidence-based dialogue. Public authorities and policy makers profit from a coordinated European network that supports the implementation of EU biodiversity, climate and forest strategies, while reducing policy fragmentation across countries. Local communities and citizens indirectly benefit from better ecosystem services, such as recreation, water regulation and nature quality, as forests are managed in a more nature-integrated and climate-resilient way.	• number of practitioners trained through INTEGRATE workshops or field visits • % of decision-makers reporting increased understanding of integrated forest management principles after participating in INTEGRATE activities
Social participation		
Socially engage actions Bottom-up approach Locally responsive processes	The instrument is based on partnership and voluntary participation, thus enjoying greater public acceptance. It is a platform for events and onsite in the forest for discussion on balancing the demands of nature conservation and other forest functions and services. INTEGRATE strengthens not only ecological outcomes, but also trust and cooperation among stakeholder groups.	• number of public events on the selected project • number of people attending information meetings, workshops, trainings, conferences, seminars, etc. • number of formal or informal partnerships between local communities and institutions / forestry authorities / NGOs • number of capacity-building/training sessions delivered to local actors (count) • number of community-initiated projects or activities related to land / forest management
Cross-sectoral approach		

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Criteria	Justification	Examples of qualitative and quantitative measures
Cross-sectoral integration Cross-scale integration Cross-value change	The INTEGRATE network facilitates cross-border exchange of knowledge and focuses on strengthening capacities in integrated forest management. One of its key strengths is the way it combines scientific research with practical field experience and real-world demonstrations to build a shared knowledge base. The INTEGRATE network facilitates the exchange of successful management practices and experiences among Integrate Members and beyond. A cross-sectoral approach is also reflected in the effort to integrate the multiple functions of forests. Integrative forest management seeks to maximise the synergy between the key roles of modern forestry — production, environmental protection and biodiversity conservation	• number of joint projects, programs or initiatives that involve multiple sectors • number of monitoring frameworks that integrate data from multiple spatial or temporal scales • number of European countries that promote the integration of biodiversity into forest management

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The comparative analysis identified distinct differences in policy approaches among countries, particularly regarding the ways instruments are combined, the extent to which regulatory measures are complemented by incentives, and the integration of participatory and cross-sectoral principles in instrument design. While some instruments—especially regulatory ones—proved effective, they often faced low social acceptance or lacked sufficient adaptability to local conditions. In contrast, voluntary and partnership-based instruments showed high legitimacy and flexibility but were strongly dependent on political commitment and coordination capacity. Economic instruments, supported by regulatory measures, are numerically predominant and widely implemented across EU countries, largely due to their mandatory nature. Conversely, voluntary instruments that enhance public environmental awareness and support climate and biodiversity-friendly decision-making tend to be undervalued.

8. A standard procedure for analysing policy instruments

Earlier research steps aimed at identifying, classifying and evaluating land use policy instruments formed the basis for the development of a standardised procedure. It is a general framework for decision-makers to follow. A standard procedure for analysing policy instruments means a formal, structured and replicable methodology which was created to guide how relevant policies and incentive mechanisms are systematically identified, collected, and evaluated. This procedure defines which sources to use, how to request or access official information, what types of policy instruments or incentives qualify for analysis, and which analytical framework or criteria will be applied to assess their design, implementation and impact. The goal is to ensure consistency, comparability and transparency in how policy instruments are reviewed across different countries or contexts. The procedure has been designed in such a way that it can be applied in any European country. It can be used at various levels of operationalisation: at national, regional and local levels. It can be applied for the purposes of evaluating existing solutions (e.g. assessing the effectiveness of the instruments used) or designing new solutions (e.g. by analysing existing instruments in other countries, regions and municipalities).

8.1. Purpose

The purpose of this procedure is to establish a standardised, transparent and replicable methodology for the identification, collection, verification and analysis of policy instruments and incentives relevant to land-use decisions with a focus on climate change mitigation, adaptation and biodiversity protection. The procedure ensures comparability across countries, supports cross-national synthesis, and enables the identification of best practices

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and policy gaps, including the detection of innovative or transferable instruments from external contexts.

8.2. Scope

This procedure applies to all activities undertaken within WP3 of the Europe-LAND project related to the systematic mapping, assessment and classification of policy instruments and incentives at European, national, regional and local levels. It covers both:

- existing instruments and incentives currently in force (obligatory or voluntary), and
- emerging or innovative instruments from other countries that may serve as inspiration or policy transfer examples.

The procedure is applicable to all partner countries, and shall be followed by project partners, analysts and research staff involved in the task.

8.3. Definitions

Policy instrument - any regulatory, economic, informational, voluntary or other mechanism implemented by public authorities or partner institutions to influence land-use decisions.
Instrument typology – classification according to OECD and project methodology: regulatory, economic, informational/voluntary, other.
Assessment criteria - multidimensional evaluation categories adopted in the project:

- impact on climate change,
- impact on biodiversity,
- impact on stakeholders,
- social participation,
- cross-sectoral approach.

8.4. Procedure

Step 1. Identification of relevant sources of information

Objective: The objective is to identify data and information sources for locating information on policy instruments across different governance levels.
The data sources include, in particular:

- EU-level databases: EUR-Lex, CAP Strategic Plans, European Commission portals (e.g. DG AGRI, DG ENV)
- National government portals: official ministerial legal acts, strategic plans, subsidy schemes

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- Regional and local authorities: spatial planning portals, environmental agencies, municipal strategies
- Official registries or legislative databases with legally binding status (no media summaries or grey sources allowed at this stage)
- OECD policy databases on land use, agriculture, environment
- Eurostat, EEA, FAO/UNFCCC reporting frameworks
- Scientific literature and high-impact policy reports (e.g. IPCC, IUCN, EFI)
- EU project outputs (e.g. Plus Change, Horizon projects)

At the European level, examples of policy sources include:

- Regulation on land use, land use change and forestry (LULUCF) (European Green Deal)
- The European Climate Law
- 2030 Biodiversity Strategy
- EU Forest Strategy
- Nature Restoration Law
- Farm to Fork Strategy
- CAP 2023-2027
- Territorial agenda 2030
- New Cohesion Policy
- The EU rural vision
- Just Transition Fund
- Critical raw materials and amending Regulations.

Step 2. Identification and grouping of relevant policy instruments and incentives

Objective: Systematically identify all relevant policy instruments and incentives affecting land-use decisions with a focus on climate change mitigation and biodiversity conservation in analysed country. This stage will also help to structure and systematise knowledge regarding the categories of policy instruments.

Actions:

a) Screen policy documents at four levels:

- EU level (regulations, directives, strategies)
- National level (laws, strategic plans, subsidy frameworks)
- Regional level (regional spatial plans, environmental programmes)
- Local level (municipal zoning plans, local partnership instruments)

b) Identify all instrument types according to project :

- Regulatory (laws, standards, spatial planning, prohibitions)

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- Economic (taxes, subsidies, eco-schemes)
- Informational and other voluntary instruments (labelling, certification, partnerships, advisory tools)
- Other (development programmes, strategic frameworks, innovation pilots)

c) Include instruments that are:

- Existing currently in force (obligatory or voluntary)
- Emerging or planned (approved but not yet implemented)
- Innovative/external (transferable examples from other EU countries — if not yet applied locally)

d) Assign the instrument to one or more sub-categories within the four main categories of policy instruments

- Regulatory:
  - Subgroup 1. Land use/spatial planning tools and requirements
  - Subgroup 2. Standards and controls on the overuse of agrochemicals and fertilisers in production
  - Subgroup 3. Restrictions or prohibitions on use
  - Subgroup 4. Management
- Economic:
  - Subgroup 1. Price-based Instruments
  - Subgroup 2. Payment for ecosystem services
  - Subgroup 3. Property rights and secure and tenure
- Informational and other voluntary instruments
  - Subgroup 1. Ecolabelling and certification
  - Subgroup 2. Partnership instruments
  - Subgroup 3. Building ecological awareness
- Other (development programmes, strategic frameworks, innovation pilots).

Output: Pre-selection list of instruments

Step 3. Instruments and incentives characteristics

Objective: To carry out the characterisation and description of the instruments

For the purpose of describing the characteristics of the analysed instruments, the following description structure may be used:

Name of instrument: put here the name of the instrument

Subgroup: from stage 2

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Country: name of the country/all EU countries
Detailed description: In this section, the main operational assumptions of the instrument should be described, including its objectives and functions, as well as the stakeholder groups it affects
Functions: incentive/stimulus, income role, fiscal role or informational (and educational) role
Scale: European, national, regional, local
Legal status: voluntary, obligatory
Existing or planned instruments: existing, planned
Source of the information: taken from step 1

Step 4. Analytical assessment of the instruments

Objective: Evaluate each instrument using the Europe-LAND five assessment criteria.
For the purpose of evaluating the instruments, the following assessment criteria may be applied, taking into account: impact on climate change, impact on biodiversity, impact on stakeholders, social participation and cross-sectoral approach
Impact on climate change:

- CO_2 emissions reduction
- CO_2 sequestration
- Adaptation to climate change
- Mitigation of climate change
- Increasing resilience to climate change

Impact on biodiversity:

- Maintaining biodiversity
- Improving the state of biodiversity

Impact on stakeholders:

- local, regional, national authority
- forest authority
- farmers
- tourists
- academia
- local citizens
- NGOs
- other

Social participation:

- socially engage actions
- bottom-up approach

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- locally responsive processes

Cross-sectoral approach:

- cross-sectoral integration
- cross-scale integration
- cross-value change

For each criterion, it is recommended to define quantitative and qualitative indicators that will enable the assessment of the instrument's impact and outcomes.

Step 5. Reporting and recommendation

The evaluation process of the instruments should serve as a basis for decision-making related to:

- maintaining a given instrument as part of policies supporting biodiversity protection policy and land use;
- modifying the instrument due to its weaknesses or identified shortcomings;
- phasing out the instrument from policy implementation frameworks;
- introducing a new instrument to address policy objectives better.

The decision-making process should be participatory and involve the different stakeholders affected by the analysed instruments.

9. Conclusions and Recommendations

Deliverable D3.1 provides a comprehensive and methodologically robust overview of policy instruments that influence land-use decisions in the context of climate change mitigation and biodiversity protection across 12 European partner countries. The report is developed within the Europe-LAND project. It directly supports policy design by enabling the identification, classification and evaluation of land-use instruments and incentives at multiple governance levels.

The document begins by establishing the strategic importance of land use in achieving EU climate neutrality and biodiversity restoration goals. It emphasises that individual, fragmented actions are insufficient without systemic policy support, both regulatory and economic, and that policy instruments serve as the primary mechanism for shaping land-manager behaviour, steering both restrictions and incentives. The study explicitly adopts the OECD classification of policy instruments, dividing them into four principal groups: regulatory, economic, informational and voluntary, and other instruments (Table 1). This typology serves as the foundation for all further analytical work.

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In the initial stage, a structured literature review was conducted, which allowed the extraction and standardisation of existing knowledge on land-use instruments, classification approaches and assessment methodologies. This stage produced a clear and operational typology of instruments. Subsequently, all partner institutions contributed to a systematic identification of policy documents, resulting in a database of 270 EU, national, regional and local documents relevant to land-use governance. Additionally, EU policy documents regarding land-use, identified in Plus Change Project were reviewed and the common instruments were identified (Table 2).

Based on these sources, the consortium identified and described 49 existing instruments applied across agriculture, forestry, biodiversity, nature protection, spatial planning and related policy domains (Tables 3-6). They include:

- Regulatory instruments (e.g. Local Spatial Development Plans, Environmental Impact Assessment, GAEC requirements),
- Economic instruments (e.g. eco-schemes, organic farming subsidies, PES mechanisms),
- Voluntary and informational instruments (e.g. organic food labelling, certification, strategic partnerships),
- Other instruments characterised by collaborative, knowledge-driven governance models (e.g. European Network INTEGRATE, LIFE projects).

A comparative cross-country assessment was undertaken using a dedicated evaluation framework built on five key criteria:

- Impact on climate change,
- Impact on biodiversity,
- Impact on stakeholders,
- Social participation,
- Cross-sectoral integration.

These criteria reflect an explicitly integrated socio-ecological perspective, allowing the assessment to go beyond narrow environmental effectiveness and incorporate legitimacy, governance innovation and cross-policy coherence.

Five flagship instruments were selected for detailed case assessment – representing each instrument category – including: Local Spatial Development Plans (regulatory), GAEC standards (regulatory), eco-schemes (economic), subsidies for organic farming (economic), the Green Tripartite Agreement (informational and other voluntary), and the European Network INTEGRATE (other). Each was analysed in a structured matrix to identify strengths, weaknesses and transferability potential.

The comparative analysis revealed clear differences in policy approach across countries, particularly in how instruments are combined, whether regulatory pressure is accompanied

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by incentives, and how far participatory and cross-sectoral principles are integrated into instrument design. Some instruments, especially regulatory ones, were found to be effective but poorly socially accepted or insufficiently adaptive to the local context. Others, particularly voluntary or partnership-based mechanisms, demonstrated high legitimacy and flexibility, but depended strongly on political will and coordination capacity. The numerical superiority of economic instruments supported by regulatory ones is clearly visible. They are widely known and implemented across EU countries, mainly because they are mandatory. On the other hand, the role of voluntary instruments, which raise the level of environmental awareness among the public and thus contribute to decisions that are beneficial from the point of view of climate and biodiversity protection, is underestimated.

A key outcome of the deliverable is the identification of recurring success factors, including:

- policy coherence across sectors (e.g. agriculture-forestry-climate-biodiversity-land use),
- multi-level governance structures enabling feedback between national and local actors,
- incentive-based mechanisms rather than purely restrictive obligations,
- and active stakeholder engagement, including landowners, municipalities and environmental organisations.

Based on the assessment, the deliverable concludes that effective land-use transformation requires blended policy approaches, combining regulation, economic incentives and knowledge-based collaborative instruments. Singular mechanisms tend to be insufficient unless embedded in broader policy architectures. This insight is essential for the strategic framing of future Europe-LAND policy recommendations. The indicators used to assess the effectiveness of the instruments are provided in the tables evaluating selected instruments (Tables 7-12). The values of these indicators were not analysed in the project, as this would only have been possible for EU economic instruments in agriculture, and the analyses also covered other groups of instruments and other sectors.

Importantly, the results achieved in this task are linked to the results obtained in WP2, through the possibility of verifying, based on data from the developed IACS database, whether the farmer has met the requirements of the eco-schemes. D3.1 establishes also a standardised methodological foundation for future WP3 and WP4 work. The use of identified instruments in agriculture causes a change in behaviour, e.g. farmers who implement sustainable agricultural practices in accordance with their commitment. They are required to document these practices, e.g. documentation of agrotechnical treatments and fertilisation plans, including: fertiliser application dates, doses and storage conditions. In addition, all farmers are bound by the Code of Good Agricultural Practice, and more and more of them seem convinced

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of the need to produce in accordance with environmental protection principles. An example of this is the growing number of organic farms and farmers using other instruments to support sustainable agriculture. D3.1 results are linked also to WP5 work, especially as the input to the Europe-Land telecoupling framework, where policy instruments are analysed as the main drivers in land-use strategies in studied cases.

Finally, the findings of this deliverable provide direct practical value for policymakers and regional authorities, as they enable the identification of both best-practice models and critical policy gaps. Instruments such as the Danish Green Tripartite Agreement and the European Network INTEGRATE are singled out as innovative, cross-sectoral and transferable governance solutions, especially where climate and biodiversity goals must be achieved simultaneously with social legitimacy and stakeholder support.

This positions Deliverable D3.1 as a crucial strategic milestone, not only for analytical groundwork but also for enabling informed policy design, adaptive decision-making and co-creation processes in the upcoming phases of the project - particularly the development of context-sensitive land-use transition pathways and policy roadmaps.

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