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DeCrises

D2.1 Regional governance of the twin transition

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Authors: Veronika Oravcová, Cheshta Arora, Paul Arteaga, Dina Bite, Adam Cenian, Rodrigo Santaella Goncalves, Joaquin Zenteno Hopp, Marta Jaskulska, Farid Karimi, Barbara Kijewska, Vineta Kleinberga, Matúš Mišík, Giga Mukutadze, Bartosz Pietrzykowski, Inguna Potetinova

(With the exception of the first author, all other authors are listed in alphabetical order and have contributed equally to this work)

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Key Messages

- Regions (subnational actors) play an essential role in the twin transition, but their ability to act depends strongly on their institutional position within national governance systems and their legal competences.
- National frameworks in Finland, Latvia, Norway and Poland include the regional level in the green and digital transitions, but responsibilities remain fragmented across sectors.
- Regions usually translate green and digital priorities through broader policies, such as regional development, smart specialisation, spatial planning and sectoral strategies rather than through dedicated strategies.
- The green transition is embedded mostly across planning, environment, energy, transport and adaptation laws. The digital transition is usually embedded in public administration, cybersecurity and connectivity. Coordination capacity is therefore as important as formal legal competence.
- Organisational structures rarely integrate climate, digitalisation and innovation in one place and, in practice, coordination, projects and cooperation platforms are often more important than dedicated departments. Institutional capacity is visible through departments, agencies and specialised organisations. Yet the integrated twin transition is mostly handled through coordination, projects, or innovation structures rather than through a dedicated unit.
- Social innovation and Interreg programme cooperation show that the twin transition is strongest where cooperation becomes specific and multi-actor, turning strategies into experiments, services and long-term partnerships.

Executive Summary

The main aim of this report is to provide an overview of regional governance of the twin transition in selected countries of the Baltic Sea Region, with particular attention to Finland, Latvia, Norway and Poland. Using a multi-level governance perspective, the report examines how national legal and strategic frameworks define the role of regions in the green and digital transitions, how regions translate these priorities into regional strategies and planning documents and how regional practice is reflected in organisational structures, social innovations and international cooperation. By combining document analysis, institutional mapping and analysis of Interreg projects, the report assesses the extent to which regions are equipped to support an inclusive and effective twin transition.

The analysis shows first that regions matter, but they are not equally empowered. The formal status of the regional level differs significantly across the four countries. Latvia relies on planning regions with mainly coordination functions, Finland on Regional Councils based on municipal cooperation, Norway on county municipalities with broader public responsibilities and Poland on voivodeships as a strong self-governing regional governance. These differences shape what regions can do in practice and how effectively they can support the green and digital transitions.

Second, the report finds that regions are present in national governance of the green and digital transitions, but their responsibilities are dispersed across laws, strategies and policy sectors. Green transition roles are usually more clearly connected to spatial planning, energy, environment, transport and adaptation, while digital transition roles are more often linked to public administration, digital services, connectivity and cybersecurity. The twin transition itself is rarely defined as a distinct policy field with clearly assigned regional competences. In most cases, it emerges through the interaction of existing green and digital responsibilities.

Third, the report shows that regional strategies rarely treat the twin transition as a stand-alone policy objective. Instead, green and digital priorities are usually integrated into broader regional development strategies, smart specialisation strategies, spatial plans and sectoral policy documents. This means that regions already translate national and EU priorities into place-based strategies, but mostly through existing planning instruments. The strength of regional governance therefore depends not only on formal competence, but also on the ability to coordinate across different policy areas and instruments.

Fourth, the report identifies important differences in regional practice. Organisational structures for climate, energy, digitalisation and innovation are often embedded in broader development, planning or project-management structures. Dedicated digital or environmental departments exist in some Norwegian and Polish regions, while Finnish and Latvian regions rely more on integrated and project-based arrangements. No analysed region has a dedicated twin-transition unit, which indicates that the twin transition is still treated primarily as a cross-cutting agenda rather than as a separate administrative field.

Finally, the analysis of social innovation and Interreg cooperation of the regions shows that regional governance is strongest where cooperation becomes specific. Social innovation appears mainly through participation, co-creation, cross-sector partnerships and structured interaction among public authorities, civil society, research institutions and businesses. Interreg projects

further demonstrate that regions have been active in cross-border and transnational cooperation related to green, digital and twin-transition priorities since the beginning of the programme.

Non-technical Summary

This report looks at how subnational actors, referred to in this report as regions, in four countries of the Baltic Sea Region (Finland, Latvia, Norway and Poland) are involved in the twin transition, understood as the simultaneous transformation towards climate neutrality and digitalisation. It asks whether regions are only mentioned in national strategies or whether they also have the practical roles, institutions and cooperation channels needed to turn these goals into concrete action. To answer this question, the report examines national laws and strategies, regional planning documents in selected regions, their organisational structures, examples of social innovation and Interreg projects related to the green, digital and twin transitions.

The findings show that regions are important for the twin transition, but they do not all have the same position or capacity. In some countries, regions have a stronger self-governing role, while in others they mainly coordinate between municipalities and national institutions. Green and digital transitions are usually present in regional governance, but they are spread across different policies, departments and strategies. The twin transition therefore appears less as one separate policy field and more as a process that depends on coordination between existing green and digital measures. The report also shows that cooperation matters. Social innovation and Interreg projects demonstrate that regions contribute to the twin transition policies effectively when public authorities, businesses, research institutions and civil society work together on specific local and regional solutions.

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List of Abbreviations

AI - Artificial Intelligence
BSR - Baltic Sea Region
EEA - European Economic Area
ERDF - European Regional Development Fund
EU - European Union
GIS - Geographic Information System; Geographical Information Science
GHG - Greenhouse Gas
ICT - Information and Communication Technologies
IoT - Internet of Things
JTF - Just Transition Fund
MLG - Multi-Level Governance
NGO - Non-Governmental Organization
NUTS - Nomenclature des Unites Territoriales Statistiques; Nomenclature of Territorial Units for Statistics
RDI - Research, Development and Innovation
SME - Small and Medium-sized Enterprises
VR - Virtual Reality
5G - 5th Generation Mobile Network

1. Introduction

The DeCrises project (EU Decarbonisation in Times of Crises: Exploring Social Innovations and Enhancing an Equitable Twin Transition) addresses the complex challenges connected to the European Union's (EU) twin transition, understood as the simultaneous transformation towards climate neutrality (green transition) and digitalisation (digital transition). These processes are reshaping European societies, economies and governance structures across multiple levels of decision-making. This policy report analyses regional governance frameworks related to the twin transition, focusing on how national legislation, policy strategies and institutional structures shape the role of regions in implementing climate and digital policies.

It is important to note that in this report, the term *region* refers to the subnational level of governance, more specifically NUTS (Nomenclature of Territorial Units for Statistics) division.[1] These entities play a key role in translating EU and national policies into place-based strategies and actions. In most cases, the report focuses on subnational actors that perform regional governance functions within national administrative systems. However, Latvia represents an exception, as its planning regions are not self-governing regional authorities in the same sense as in the other countries examined, but rather coordination and planning bodies operating at the regional level.

The findings of the report provide an important basis for identifying best practices in regional governance and informing future policy recommendations aimed at strengthening multi-level governance (MLG) in support of a twin transition all across the Europe.

1.1. Role of Regions in the Twin Transition

Regions and regional governments are well positioned to transform the EU and national objectives of twin transition into relevant strategies and measures. They often set key policies related to economic development, innovation, energy, infrastructure development and environmental protection, which are all key areas to the twin transition.[2] Moreover, regions as subnational actors serve as important platforms for MLG, enabling coordination between European institutions, national governments on the one side and local authorities, businesses and civil society actors on the other side.[3] This multi-level perspective is particularly relevant in the context of the just transition as well, which is a concept that emphasises fairness, inclusiveness and the need to ensure that no territories or social groups are left behind[4] in the transition towards a climate-neutral and digital economy.

Despite the growing recognition of the regional dimension of the twin transition in governance process and academic literature as well,[5] there remains still a limited understanding of how

[1] Eurostat. (2026). Overview – NUTS. https://ec.europa.eu/eurostat/web/nuts/overview.
[2] Damioli, G., Bianchini, S. and Ghisetti, C. (2025). The emergence of a 'twin transition' scientific knowledge base in the European regions. *Regional Studies* 59(1), doi:10.1080/00343404.2024.2355998.
[3] Eaton, K. and Schakel, A. (2022). Interconnected multilevel governance: Regional governments in Europe and beyond. Regional & Federal Studies 32(3), 255–275, doi:10.1080/13597566.2022.2059471.
[4] European Commission. (2026). The future of cohesion policy. https://ec.europa.eu/regional_policy/policy/how/future-cohesion-policy_en.
[5] Dal Molin, M. and Leggerini, C. (2026). Strengthening institutions for a green and digital future: Regional evidence from Europe's twin transition. Journal of Regional Science, doi:10.1111/jors.70062.

different countries organise and implement regional governance frameworks to support these transitions. Different national institutional arrangements, legal competences and administrative traditions shape the extent to which regions are empowered to design and implement policies related to climate and digital policies and more broadly overall socio-economic development of the particular region. As a result, regional governance models vary considerably across Europe, influencing the capacity of regions to contribute effectively to the twin transition.[6] Understanding these differences and identifying successful governance approaches is therefore essential for strengthening the EU's overall capacity to achieve its transformation goals.

This report addresses this gap by focusing on regional governance in Europe within the context of the just twin transition. It examines the institutional and governance mechanisms that enable regions to participate in and shape these processes. Its main objective is to enhance our understanding of regional multi-level governance practices, identify best practices across different national contexts and contribute to the development of evidence-based policy recommendations aimed at improving the governance of the twin transition in the EU.

Another important aspect of the regional governance is the recognition that successful transitions require not only effective institutional coordination, but also active participation of civil society and local stakeholders, as they are actors, which are highly exposed to the outcomes of twin transition decisions.[7] These can be very different actors, from active non-governmental actors to local and regional businesses or associations, as well as passive recipients of governance decisions. It is important to understand the role of these actors as well, as the twin transition involves complex socio-economic transformations that affect communities, labour markets and regional development trajectories. Therefore, inclusive governance approaches that meaningfully engage civil society organisations, businesses, academic institutions and citizens are essential for ensuring both legitimacy and effectiveness of the twin transition.

1.2. Structure of the Report

This policy report looks at regional governance practices through a comparative perspective across several European countries. Particular attention is given to Finland, Latvia, Norway and Poland and understand how national legislative frameworks and strategic policy documents define the role of regions in the implementation of climate and digital policies. At the same time, the report examines the practical capacities of regional institutions to design and implement policies related to the twin transition.

This report focuses specifically on analysing and comparing national approaches to regional governance in the context of the just twin transition. It aims to assess the extent to which regions across different EU countries are involved in planning, implementing and coordinating policies related to climate neutrality and digital transformation. By examining national legislation and strategic frameworks, the report aims to provide a comprehensive overview of the evolving role of regions in supporting the twin transition.

[6] Faggian, A., Marzucchi, A. and Montresor, S. (2025). Regions facing the 'twin transition': combining regional green and digital innovations. Regional Studies 59(1), doi:10.1080/00343404.2024.2398555.
[7] Nordfeldt, M. and Dahlström, M. (2023). Civil society in local sustainable transformation: can bottom-up activities meet top-down expectations? Journal of Civil Society, doi:10.1080/17448689.2023.2255692.

The report is structured as follows. After the introduction, the second part presents the methodological framework and explains the main concepts, data sources and research approach used in the analysis.

The third part focuses on the position of the subnational level within national legal and strategic frameworks for the green and digital transitions. It maps key laws, national strategies and policy documents in each country to understand how responsibilities of regions are defined. The aim is to identify similarities and differences across countries and to assess how strongly regions are integrated into national governance of the twin transition.

The fourth part examines the regional framework for the green and digital transition. It focuses on regional strategies, planning documents and policy instruments prepared by regions. It analyses how green and digital priorities are included in these documents, whether through general development strategies, smart specialisation strategies, spatial planning, or sectoral plans such as energy, climate, or waste management. The aim is to show how regions translate broader policy goals into concrete regional programmes and initiatives.

The fifth part focuses on selected regions and their approach to the twin transition. It examines their organisational structures, planning documents and international cooperation, with a particular focus on Interreg programmes. This part examines planning documents with a focus on social innovation in the green, digital and twin transition, as these processes often require new forms of cooperation, participation and problem-solving across sectors and actors. In addition, this part analyses how regions engage in cross-border cooperation and participate in Interreg projects related to the green, digital and twin transition. Regions are increasingly involved in transnational initiatives, partnerships and learning networks that support innovation and policy development. By analysing these activities, the report assesses how regions both contribute to and benefit from cooperation beyond national borders.

The sixth part presents the main conclusions. It summarises the key findings from the comparative analysis and highlights the main differences and similarities across countries. It reflects on the role of regions in the twin transition. It also identifies key challenges and opportunities for strengthening regional involvement and provides general insights that may support future policy development and research.

2. Methodology

This policy report examines the role of the regional governance in supporting the twin transition in the EU and EEA. Regional governance in this report refers to the subnational level, where regions are defined primarily according to the NUTS classification system.[8] The methodological framework is based on the concept of MLG, which emphasises the interaction between European, national, regional and local levels in shaping and implementing public policies. In the context of the twin transition, effective governance requires especially coordination across these levels to translate EU-wide objectives, such as those set out in the European Green Deal and the EU digital strategy, into policies adapted to specific regional and local contexts.

This policy report focuses in particular on national and regional frameworks, covering the legislative, institutional and organisational dimensions of subnational governance. The research uses a comparative multi-case design[9] by focusing on selected regions across four European countries of Baltic Sea Region (Finland, Latvia, Norway and Poland). Such comparative design allows the identification of common patterns and reveals also country-specific differences in regional governance practices. By analysing regions in different national contexts, the research identifies governance arrangements and institutional capacities that support effective participation in the twin transition.

The analysis relies mainly on national and regional policy documents, legal frameworks and information from regional authorities' websites including (Table 1):

a) national legislation defining regional competences in the twin transition
b) national strategies related to climate policy, energy transition and digital transition
c) regional development and sectoral policy strategies
d) institutional information on regional governance available on regional government websites
e) project databases of Interreg programmes
f) other reports and policy documents related to regional governance

Parts three and four of this policy report identify the legal and strategic frameworks that define the competences, responsibilities and obligations of regional authorities in the four countries. The main method used was qualitative document analysis. For data collection, the authors followed a guideline designed to ensure comparable information across countries.[10] The analytical framework was developed to support a consistent comparison of the case study countries: Finland, Latvia, Norway and Poland. The analysis then proceeded through three main components.

[8] Eurostat. (2026). Overview – NUTS. https://ec.europa.eu/eurostat/web/nuts/overview.
[9] Stewart, J. (2012). Multiple-case study methods in governance-related research. Public Management Review 14(1), 67–82, doi:10.1080/14719037.2011.589618.
[10] Aguinis, H., Hill, N.S. and Bailey, J.R. (2021). Best practices in data collection and preparation: Recommendations for reviewers, editors, and authors. Organizational Research Methods 24(4), doi:10.1177/1094428119836485.

Table 1. Sources of data

	Variable	Indicator	Data source
National governance framework	Regional competences defined by national legislation	Laws defining regional governance structures and competences	Constitutions, national legislation
	Regional responsibilities in green transition	Laws related to climate policy, energy transition, decarbonisation and sustainability	Climate laws, energy laws
	Regional responsibilities in digital transition	Laws related to digital governance	Digitalisation laws, ICT policy frameworks
	Involvement of regions in national documents	References to regions in national climate, energy and digital strategies	National strategies, policy documents
Regional governance framework	Regional-level policy planning	Existence of regional climate, energy or digital strategies	Regional strategic documents, regional planning documents
Regional social innovations	Presence of social innovations in regional strategies	Initiatives addressing social needs through new governance or cooperation arrangements	Regional planning documents, development strategies
	Social innovations supporting green transition	Initiatives supporting decarbonisation, renewable energy, sustainability	Regional climate strategies, development strategies
	Social innovations supporting digital transition	Initiatives promoting digital inclusion, smart governance or digital services	Regional digitalisation strategies, research and innovation strategies development strategies
	Social innovations related to twin transition	Initiatives combining climate and digital objectives	Regional planning documents, development strategies
Institutional structure of regional administrations	Administrative structures for digital governance	Departments responsible for digital transition	Regional organisational structures, official websites
	Administrative structures for climate and energy governance	Departments responsible for climate policy or energy transition	Regional organisational structures, official websites
	Innovation administrative structures	Departments or agencies responsible for innovation policy	Regional organisational structures, official websites
	Institutional coordination of twin transition	Existence of units addressing twin transition	Regional organisational structures, official websites
International cooperation	Participation in Interreg programmes	Number and type of Interreg projects involving the selected region	Interreg projects database
	Areas of cooperation	Projects related to climate, energy, digital transition, innovation, sustainability	Interreg projects description

Source: Authors

First, the research identified national legislation defining the competences and responsibilities of regional authorities. This includes both general legislations regulating regional governance and sector-specific laws addressing climate policies, energy transition and digital transition. The analysis therefore distinguishes between general provisions for the regional governments and those specifically related to twin transition.

Second, the research examined national strategic frameworks addressing the green and digital transitions. These include national climate strategies, energy transition plans, digitalisation strategies and other policy documents that define national priorities and implementation mechanisms. Particular attention was given to whether these strategies (for example National Energy and Climate Plans of Low-carbon strategies) assign specific responsibilities to regional authorities or require their participation in policy implementation.

Third, the research analysed regional-level strategies that regions are required or expected to prepare. These may include documents related to twin transition, such as climate action plans, energy strategies, digital transformation strategies, or regional development strategies. The analysis differentiates between strategies that are legally required and those adopted voluntarily by regional authorities.

The fifth part of the report focuses on selected regions. It examines organisational structures, social innovations and international cooperation supporting the twin transition at the regional level. The regions were selected based on their active approach to the green, digital, or twin transition. However, not all regions were analysed, but we selected only 13 cases (Table 2).

Table 2. List of selected regions

Finland	**Latvia**	**Norway**	**Poland**
North Ostrobothnia (Pohjois-Pohjanmaa)	Kurzeme	Oslo	Greater Poland (Wielkopolskie)
South Ostrobothnia (Etelä-Pohjanmaa)	Riga	Trøndelag	Lesser Poland (Małopolskie)
Southwest Finland (Varsinais-Suomi)	Vidzeme	Vestland	Pomeranian (Pomorskie)
Helsinki-Uusimaa			

Source: Authors

To identify organisational structures, data were collected mainly from official regional government websites. The institutional mapping focuses on identifying:

a) departments responsible for digital transition
b) departments responsible for green transition (climate or energy policy)
c) departments responsible for research and innovation
d) units responsible for the twin transition in an integrated way

The analysis also considers regional agencies and specialised organisations established by regional governments to support policy implementation. These entities often act as intermediaries between public authorities, private actors and civil society.[11]

[11] Molina-Morales, F.X., López-Navarro, M.Á. and Guia-Julve, J. (2002). The role of local institutions as intermediary agents in the industrial district. European Urban and Regional Studies 9(4), doi:10.1177/096977640200900403.

To identify social innovations in the selected regions, the analysis builds on the project's definition of social innovation, understood as new forms of social interaction and collaboration designed to address societal needs.[12] The analysis is based on content analysis of regional planning and strategic documents. The aim is to identify initiatives that can be classified as social innovations. These initiatives are grouped into four categories:

a) social innovations addressing socio-economic challenges
b) social innovations supporting the green transition (for example community energy projects, sustainability initiatives)
c) social innovations supporting the digital transition (for example digital inclusion programmes, smart governance initiatives)
d) social innovations addressing the twin transition, where digital tools and climate objectives intersect

Because many initiatives address multiple objectives, overlaps between categories are also recorded.

The analysis of the international dimension of subnational governance focused on the involvement of regions in European territorial cooperation initiatives, particularly Interreg programmes. These programmes support cooperation across borders, enabling knowledge exchange, innovation and joint policy development.[13] They allow regions to collaborate on shared challenges related to climate action, digital transformation and sustainable development.

The analysis draws on data from Interreg project databases and project documentation. Data were collected in January 2026, resulting in a dataset of 4,257 projects. The dataset includes information on 13 participating regions, project titles, project descriptions, programming periods, project duration, total budget, EU contribution, thematic focus and number of partners. For this report, projects (project titles, project descriptions) were coded into three categories: green transition, digital transition and twin transition. One coder analysed the project abstracts and a second coder checked a sample to ensure reliability.

Projects were included into green, digital and/or twin transition categories only if they directly contributed to one of the three transition areas. The coding did not rely solely on keywords search in the project titles or project descriptions, as these could be misleading. For example, a project might include the term "sustainability" but refer only to financial sustainability, or mention "climate change" without addressing it directly. Similarly, thematic categories of the projects alone were not sufficient to categorize projects into green, digital or twin transition categories. For instance, a project classified under "Education and training" theme could still contribute to digital skills, but of course, does not have to. Duplicate entries were removed where projects involved multiple regions. The final dataset therefore includes 3,342 unique projects. Of these, 826 relate to the digital transition, 1,119 to the green transition and 370 to the twin transition.

Finally, several limitations should be noted. First, the analysis relies mainly on documents and may not capture informal governance practices or political dynamics. Second, not all the regions in the four selected countries could have been analysed. Third, differences in national

[12] Hlebec, V. and Mandič, S. (2021). Socialne inovacije kot nov tip kolektivnega delovanja. Teorija in praksa 58(1), 5–27, doi:10.51936/tip.58.1.5-27.
[13] Interreg. (2026). About us. https://interreg.eu/.

administrative systems may affect comparability across countries. To address these limitations, the research uses standardised data collection templates and cross-checks information from multiple sources, including legal documents, policy strategies and institutional materials.

3. National Framework for the Green and Digital Transition at the Subnational Level

The role of subnational actors and their responsibilities differ across BSR countries. A key difference is the formal position of the subnational level in each country. These differences reflect not only different administrative systems but also different level of competences of regions in each country. This part of the policy report examines the national framework for subnational governance (Table 3) in Finland, Latvia, Norway and Poland with a focus on the green and digital transition.

Table 3. Subnational level in Finland, Latvia, Norway and Poland

	NUTS 1	NUTS 2	NUTS 3	Below NUTS 3	Elections
Finland	country	5 statistical regions	19 regions / maakunta/landskap governed by councils appointed by municipalities	municipalities (308) wellbeing services counties (21)	municipalities (direct) wellbeing services counties (direct) regions (indirect)
Latvia	country	country	6 statistical regions 5 planning regions	municipalities (43)	municipalities (direct) planning regions (indirect, coordination)
Norway	country	7 statistical regions	11 counties / fylkeskommuner	municipalities (357)	counties (direct) municipalities (direct)
Poland	country	16 voivodeships	73 statistical subregions	powiaty (380) gminy (2,477)	voivodeships (direct) powiaty (direct) gminy (direct)

Source: Authors

In Latvia, the subnational level consists of five so-called planning regions (corresponding to NUTS 3 level). Planning regions were established by the **Regional Development Law**,[14] but they are not self-governing units like for example municipalities. The **Law on Administrative Territories and Populated Areas** defines administrative territories as units governed by local governments and does not recognise planning regions as independent self-governing bodies.[15] However, Latvian planning regions have certain functions in the governance system, as they contribute to EU cohesion policy goals, serving as planning and coordination units for socio-economic development, setting regional development trajectories, identifying investment needs, promoting cooperation among municipalities and attracting and implementing EU-funded initiatives.[16]

Finland has a different model of governance. The country is divided into 19 regions governed by so-called Regional Councils (corresponding to NUTS 3 level) that serve as forums of cooperation for the municipalities. **Regional Councils** are not fully independent regional governments, but they are important public-law bodies based on cooperation between municipalities. Their role is

[14] The Parliament of Latvia. (2026). Regional Development Law. https://likumi.lv/ta/en/en/id/61002-regional-development-law.
[15] The Parliament of Latvia. (2020). Law on Administrative Territories and Populated Areas. https://likumi.lv/ta/en/en/id/315654-law-on-administrative-territories-and-populated-areas.
[16] Vidzeme Planning Region. (2026). Organizational structure. https://www.vidzeme.lv/en/about-us/organizational-structure/.

defined mainly through laws on regional development and the implementation of EU regional and structural policy.[17] In Norway, the **county municipality (fylkeskommune)** is a clearly recognised subnational authority corresponding to NUTS 3 level.[18] It has broad responsibilities based both on Act relating to municipalities and county authorities (The **Local Government Act**)[19] and on a wide range of sector-specific laws including social services, healthcare, education or regional development.

In Poland, the subnational level analysed in this policy report is represented by the **voivodship (województwo)** (corresponding to NUTS 2 level). There are 16 voivodships in Poland having a dual role: voivodship is a self-governing territorial unit, but it is also a space of state administration because the *voivode* represents the central government. Even so, the self-governing role of the voivodship is clearly defined in law, especially in the **Act on Voivodship Local Government**.[20]

3.1. Legal Framework Defining the Role and Competences of Regions

At the **constitutional level**, Finland, Norway and Poland all provide general principles relevant to regional governance, but to different degrees. In Finland, the Constitution sets the general legal and democratic framework for public authorities. Section 121 guarantees municipal self-government and provides the basis for inter-municipal cooperation, including in Regional Councils.[21] In Norway, the Constitution gives only limited support to local and regional self-government. Article 49 recognises municipalities and counties as public bodies with delegated rights and responsibilities.[22] Poland, on the other hand, is the country that provides a strong constitutional basis for decentralisation. Articles 15 and 16 establish the decentralisation of public power and recognise self-governing communities as part of public authority.[23]

Beyond the constitutional level, all four countries rely on **framework laws on public administration and local or regional government**. In Finland, the **Local Government Act** 410/2015, provides the legal basis for municipal self-government, public participation and the sustainable organisation of services.[24] Although this law mainly concerns municipalities, it is an important part of the wider legal setting in which regional cooperation takes place. In Norway, the **Local Government Act** of 2018 is the main framework law for both municipalities and county authorities.[25] It gives county municipalities a broad role in local democracy, citizen participation, service delivery, public authority, community development and sustainability meaning that the

[17] Finlex. (2021). Act on Regional Development and Implementation of the European Union's Regional and Structural Policy (756/2021). https://www.finlex.fi/fi/lainsaadanto/saadoskokoelma/2021/756.
[18] Kingdom of Norway. (1814). Constitution of the Kingdom of Norway. https://lovdata.no/dokument/NLE/lov/1814-05-17.
[19] Ministry of Local Government and Regional Development. (1992). The Local Government Act. https://www.regjeringen.no/globalassets/upload/krd/tx-23249-kommuneloven-eng.pdf.
[20] Sejm of the Republic of Poland. (1998). Act on Voivodship Self-government. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19980910576.
[21] Finlex. (1999). Constitution of Finland. https://www.finlex.fi/en/legislation/translations/1999/eng/731.
[22] Kingdom of Norway. (1814). Constitution of the Kingdom of Norway. https://lovdata.no/dokument/NLE/lov/1814-05-17.
[23] Sejm of the Republic of Poland. (1997). Constitution of the Republic of Poland. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19970780483.
[24] Finlex. (2015). Local Government Act (410/2015). https://www.finlex.fi/en/legislation/translations/2015/eng/410.
[25] Norwegian Government. (2018). The Local Government Act. https://www.regjeringen.no/en/documents/the-local-government-act/id2672010/.

regional level is not limited to narrow administrative tasks. In Poland, the **Act on Voivodship Self-government** of 1998 plays a similar role. It defines the institutions of voivodship self-government and sets out the region's strategic and sectoral responsibilities. It also assigns the voivodship a key role in preparing and implementing regional development strategies and coordinating development policies across the region.[26] Latvia is a different case, because it does not have a subnational self-government. But although planning regions in Latvia are not self-governing bodies, their role and tasks is defined by the **Regional Development Law**.[27]

Socio-economic development planning together with **spatial planning** are the most important competences related to twin transition at subnational level across all four countries. In these areas all four countries define regional responsibilities, although with different levels of detail and competences. In Latvia under the **Development Planning System Law** planning regions must coordinate local and regional planning documents and ensure that they are consistent with higher-level planning documents and the broader legal framework.[28] The **Spatial Development Planning Law** further defines the role of planning regions as responsible for preparing and approving sustainable development strategies and development programmes, coordinating and monitoring their implementation and coordinating local strategies, programmes and spatial plans.[29] The clearly defined role of planning regions in preparing strategic planning documents and coordinating local planning[30] reflects Latvia's strong focus on MLG coordination and information sharing.

In Finland, regional responsibilities are also strongly linked to development policy. The **Act on Regional Development and Implementation of the European Union's Regional and Structural Policy** 756/2021 defines the status, tasks and powers of Regional Councils. It states that regional development should promote sustainable development, growth and competitiveness. The Act directly links regional planning to the living environment, climate-change mitigation and adaptation.[31] In Norway, regional development and coordination are also important, The **Planning and Building Act** of 2008 is central in this regard. It divides planning responsibilities between national, county and municipal levels and gives the county responsibility for broad regional planning that coordinates state and municipal activity within the county. Its purpose is to support decisions on resource use, protection and development.[32] This makes the county an important body linking different sectors and levels of government.

In Poland, development policy is also crucial at the subnational level and the legal status of the region is stronger. The **Act on Voivodship Self-government** of 1998 states that the voivodship

[26] Sejm of the Republic of Poland. (1998). Act on Voivodship Self-government. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19980910576.
[27] The Parliament of Latvia. (2026). Regional Development Law. https://likumi.lv/ta/en/en/id/61002-regional-development-law.
[28] The Parliament of Latvia. (2008). Development Planning System Law. https://likumi.lv/ta/en/en/id/175748-development-planning-system-law.
[29] The Parliament of Latvia. (2011). Spatial Development Planning Law. https://likumi.lv/ta/en/en/id/238807-spatial-development-planning-law.
[30] This is supported by implementing regulations. Cabinet Regulation No. 418 of 2021 defines the territorial structure of planning regions, while Cabinet Regulation No. 284 of 2023 sets procedures for regional development monitoring and evaluation.
[31] Finlex. (2021). Act on Regional Development and Implementation of the European Union's Regional and Structural Policy (756/2021). https://www.finlex.fi/fi/lainsaadanto/saadoskokoelma/2021/756.
[32] Ministry of Local and Regional Affairs. (2008). Planning and Building Act. https://lovdata.no/dokument/NL/lov/2008-06-27-71?q=Plan-%20og%20bygningsloven.

self-government prepares the regional development strategy. This strategy must include social, economic, spatial and climate-environmental goals. It also refers to economic activity, competitiveness, innovation, protection of the natural and cultural environment and spatial order.[33] The **Act on the Principles of Development Policy** of 2006 adds that regional self-government is one of the main actors in development policy and sets consultation procedures for draft regional strategies. It also allows several voivodships to prepare a joint supra-regional strategy, which shows that regional responsibilities can also include interregional cooperation.[34] In Poland, the **Act on Spatial Planning and Development** of 2003 requires voivodship authorities to prepare the spatial development plan of the voivodship, carry out analyses and studies and prepare concepts and programmes related to spatial development. It also requires a landscape audit at least once every twenty years identifying landscapes in the region, assesses their value, identifies priority landscapes and threats and recommends measures for their protection and management.[35] This gives the Polish regional level an important role in both spatial planning and long-term landscape protection.

All four countries recognise the regional level in development and planning, but they differ significantly in the legal status, autonomy and strength of regional competences. While Finland, Norway and especially Poland provide a clearer basis for regional self-government, Latvia relies more on planning regions as coordination bodies. In all cases, however, socio-economic development and spatial planning form the main legal entry points through which regions contribute to the twin transition.

3.2. Framework Defining the Role and Competences of Regions in the Green Transition

Regional responsibilities in the green transition in Finland, Latvia, Norway and Poland are defined through general laws on public administration, development and spatial planning and more specific laws on climate, energy, environment, pollution, water use and management, transport, waste management and land use. In all four countries, there is no single law that would give the regions one clear green transition mandate or competence. However, there is a strong focus on climate and environmental objectives across different laws, which together shape the role of regions in the green transition.

In Latvia as planning regions are not fully autonomous regional self-governments and built on municipalities means that their role in the green transition depends heavily on the responsibilities of municipalities and on national climate and energy policy. The **Local Government Law** is therefore relevant for green transition at subnational level because it defines climate change mitigation and adaptation as autonomous functions of local municipalities,[36] which creates an indirect link to planning regions, since their main role is in development planning and coordination.

[33] Sejm of the Republic of Poland. (1998). Act on Voivodship Self-government. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19980910576.
[34] Sejm of the Republic of Poland. (2006). Act on the Principles of Development Policy. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20062271658.
[35] Sejm of the Republic of Poland. (2003). Act on Spatial Planning and Development. https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20030800717/U/D20030717Lj.pdf.
[36] The Parliament of Latvia. (2022). Local Government Law. https://likumi.lv/ta/en/en/id/336956-local-government-law.

Therefore, the legal framework for the green transition at the regional level in Latvia is mainly indirect and based on coordination. The **Energy Law** states that the Ministry of Climate and Energy prepares the Integrated National Energy and Climate Progress Report in cooperation with ministries, planning regions, municipalities and business representatives.[37] This formally includes planning regions in national climate and energy governance, but it does not give them strong independent powers. Cabinet Order No. 573 on the Updated **National Energy and Climate Plan of Latvia for 2021-2030** follows the same approach. It says that ministries should implement measures in cooperation with planning regions, municipalities, stakeholders and the Public Utilities Commission, but it does not assign direct tasks to planning regions.[38] This means that Latvian regions are treated more as partners in coordination and consultation than as main actors in implementation. Planning regions mainly integrate national goals into territorial development documents rather than directly manage decarbonisation, energy, or environmental policy.

The same applies to climate adaptation and just transition. Cabinet Order No. 380 on Latvia's **Climate Change Adaptation Plan up to 2030** does not give planning regions direct obligations, but it suggests that adaptation should be reflected in regional policy.[39] Cabinet Order No. 531 on the **Territorial Plan for Just Transition** also highlights the regional dimension of the move toward climate neutrality, especially in relation to peat extraction and regional inequalities, but it does not give planning regions major operational powers.[40] Other main Latvian laws related to green transition, for example on environmental impact assessment, building energy performance, waste, pollution and air quality do not assign strong direct green transition tasks to planning regions.

Finland, Norway and Poland have a more clearly established legal framework of the regional level in green transition. In Finland, the regional role is strongly linked to the planning system. The **Climate Act** 423/2022 is the main framework law for national climate policy. It sets climate neutrality and emission reduction goals and provides for long-term, medium-term, adaptation and land-use climate planning. The law mainly defines obligations at national level, but it is still important for regions because they are expected to contribute to these goals through their statutory planning tasks.[41] The Finnish model does not place every regional duty directly in the Climate Act. Instead, the act creates the overall framework within which regional authorities work.

Green transition is further supported by the **Environmental Protection Act** 527/2014, which aims to prevent pollution and emissions, protect a sustainable and biodiverse environment, promote sustainable development, support climate action, reduce waste and strengthen public participation. It is not specifically a regional government law, but it shapes the legal context for regional environmental and sustainability tasks.[42] The clearest regional responsibility in Finland is defined by the **Land Use and Building Act** 132/1999, where Regional Councils must prepare regional land-use plans important for low-carbon development. These plans are central for the

[37] The Parliament of Latvia. (1998). Energy Law. https://likumi.lv/ta/en/en/id/49833-energy-law.
[38] Cabinet of Ministers of Latvia. (2024). Updated National Energy and Climate Plan of Latvia for 2021–2030. https://likumi.lv/ta/id/353615-aktualizetais-nacionalais-energetikas-un-klimata-plans-20212030gadam.
[39] Cabinet of Ministers of Latvia. (2019). Latvia's Climate Change Adaptation Plan up to 2030. https://likumi.lv/ta/id/308330-par-latvijas-pielagosanas-klimata-parmainam-planu-laika-posmam-lidz-2030-gadam.
[40] Cabinet of Ministers of Latvia. (2022). Territorial Plan for Just Transition. https://likumi.lv/ta/id/334018-par-taisnigas-parkartosanas-teritorialo-planu.
[41] Finlex. (2022). Climate Law (423/2022). https://www.finlex.fi/fi/lainsaadanto/saadoskokoelma/2022/423.
[42] Finlex. (2014). Environmental Protection Act (527/2014). https://www.finlex.fi/en/legislation/translations/2014/eng/527.

practical territorial side of the green transition, as they affect the location of energy infrastructure including renewable energy zones and transport corridors.[43]

Additionally, the **Energy Efficiency Act** 1429/2014 implements the EU Energy Efficiency Directive and creates a framework for energy efficiency obligations and voluntary agreements that can include municipalities and regions.[44] This means that even when regional obligations are not always mandatory in a narrow sense, Finnish regions can still play an institutional role in energy efficiency and broader decarbonisation policy.

In Norway, regional responsibilities related to climate, energy and sustainability are present in several sectoral laws. One important area is water governance, which is an area closely linked to environmental sustainability, hydropower, climate adaptation and ecosystem management. Under the **Regulation on the Framework for Water Management** 1446/2006 county municipalities act as Water Region Authorities and coordinate the review and updating of water management plans and action programmes every six years.[45] Norway also gives regions a role in hydropower governance. Under the 2017 amendments to **Water Power Licensing Legislation**, counties and municipalities provide opinions on concession applications, receive concession fees and part of electricity output and manage these resources, preferably for local business development[46] creating a direct link between the regional level and renewable energy governance.

Environmental and biodiversity protection also involve regional responsibilities. The **Nature Diversity Act** of 2009 requires counties and municipalities to be involved in consultation on protected areas and allows specific tasks to be delegated to them.[47] The **Pollution Control Act** of 1981 and **Waste Treatment Act** identify the county municipality as a pollution authority at county level.[48] The **Regulation on Environmental Impact Assessments** of 2017 makes the county municipality the responsible authority for regional plans,[49] which gives counties an important role in making sure that environmental impacts are taken into account in planning and development.

In Poland, the regional role in the green transition is broad at the level of the voivodeship. At the same time, the institutional system is more complex because powers are often shared between the voivodeship assembly, the marshal, the voivode, the Regional Director for Environmental Protection and regional environmental funds. The key law is the **Environmental Protection Law** 62/2001 defining the environmental protection policy as action based on sustainable development and states that it is implemented through development strategies, programmes and planning documents, including voivodeship environmental protection programmes and urban adaptation plans. Poland also gives the regional level an important financial role. Under the Environmental

[43] Finlex. (1999). Land Use and Building Act. https://www.finlex.fi/fi/lainsaadanto/saadoskaannokset/1999/eng/1346.
[44] Finlex. (2014). Energy Efficiency Act (1429/2014). https://www.finlex.fi/fi/lainsaadanto/2014/1429.
[45] Ministry of Climate and Environment. (2006). Regulation on the Framework for Water Management. https://lovdata.no/pro/#document/SF/forskrift/2006-12-15-1446.
[46] Ministry of Petroleum and Energy. (2017). Amendment Act to the Hydropower Licensing Legislation. https://lovdata.no/dokument/LTI/lov/2017-06-21-101.
[47] Ministry of Climate and Environment. (2009). Nature Diversity Act. https://lovdata.no/dokument/NL/lov/2009-06-19-100?q=Naturmangfoldloven.
[48] Ministry of Climate and Environment. (1983). Pollution Control Act. https://lovdata.no/dokument/NL/lov/1981-03-13-6.
[49] Ministry of Climate and Environment, Ministry of Local Government and District Affairs. (2017). Regulation on Environmental Impact Assessments. https://lovdata.no/dokument/SF/forskrift/2017-06-21-854.

Protection Law, voivodeship environmental protection and water management funds finance activities such as water protection, waste management, renewable energy, cleaner transport, environmental education, environmental remediation and climate-related investments.[50]

Similarly, the **Nature Conservation Act** of 2004 requires nature protection goals to be reflected in voivodeship development strategies and spatial plans, which ensures that biodiversity protection is part of regional planning.[51] Also, the **Water Law** of 2017 adds another climate-relevant area, especially flood and drought management. Voivodeship spatial plans and strategies must take flood-risk areas into account and draft spatial plans must be coordinated with Polish Waters on flood-risk matters giving the regional level an important role in climate adaptation and water governance.[52]

The **Energy Law** 54/1997 adds another regional role. The minister responsible for energy cooperates with voivodes and territorial self-governments in planning fuel and energy systems. The voivodeship also takes part in planning energy and fuel supply and reviews local plans for heat, electricity and gas supply in relation to inter-municipal coordination and consistency with national energy policy. This gives the regional level an important role in energy planning.[53] In addition, the **Act on Energy Efficiency** of 2016 requires public sector bodies including voivodeships to implement energy efficiency measure, such as thermal modernisation, low-emission investment, equipment replacement, or an environmental management system.[54]

Thus, the green transition is not governed through a single regional mandate in any of the four countries, but rather through a combination of sectoral laws and planning instruments. Latvia stands out for its more indirect and coordination-based model, in which planning regions are involved mainly through development planning and consultation. By contrast, Finland, Norway and especially Poland provide a clearer legal basis for regional involvement, although responsibilities remain spread across different policy fields. In all cases, the regional role in the green transition is shaped above all through planning, environmental policies and energy policy.

3.3. Framework Defining the Role and Competences of Regions in the Digital Transition

The legal framework for regions in digital transition differ substantially across Latvia, Finland, Norway and Poland. Similarly to the green transition, this difference is mainly because the subnational level has a different role in each country and also because digitalisation is usually regulated through laws on public administration, cybersecurity and telecommunications rather than through one specific law on digital transition. So, also regional responsibilities are usually

[50] Sejm of the Republic of Poland. (2001). Environmental Protection Law. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20010620627.
[51] Sejm of the Republic of Poland. (2004). Nature Conservation Act. https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20040920880/U/D20040880Lj.pdf.
[52] Sejm of the Republic of Poland. (2017). Water Law. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20170001566.
[53] Sejm of the Republic of Poland. (1997). Energy Law. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19970540348.
[54] Sejm of the Republic of Poland. (2016). Act on Energy Efficiency. https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20160000831/U/D20160831Lj.pdf.

linked to public information management, digital service delivery, interoperability, cybersecurity, communications infrastructure and access to digital services.

Latvia stands apart from the other three countries because it does not show any clearly defined legal responsibilities for planning regions in the digital transition. However, this does not mean that digitalisation is unimportant at subnational level in Latvia. It means that planning regions do not appear to have a distinct legal role similar to the one found in Finland, Norway and Poland.

Finland links digitalisation to good governance. Digital transition is not just about new tools, but about making public administration more effective, secure and transparent. The role of the regions appears through laws on information management, digital public services, accessibility, electronic communications and national digital strategy. Norway places emphasis on security and resilience, especially digital and national security and defines responsibilities mainly by function rather than always naming regions directly. Poland combines three main areas: digitalisation of public administration, cybersecurity and telecommunications infrastructure, with regions involved in all three.

In Finland, one of the main laws shaping responsibilities in digital transition is the **Act on Information Management in Public Administration** 906/2019. This law deals with information governance, interoperability, data management and secure processing of public data. It shows that digital transition is not understood only as technical modernisation, but also as a change in public administration toward better data governance, openness and service quality. The law aims to ensure harmonised and secure management of public datasets, support efficient use of data in public services and improve interoperability between information systems.[55] Although the law is not limited to regions, it applies to public bodies, including those at regional level.

Another important Finnish law is the **Act on the Provision of Digital Services** 306/2019 implementing the EU Web Accessibility Directive and applies to public digital services, including those provided by the state, municipalities and Regional Councils. Its purpose is to improve the availability, quality, security and accessibility of digital services and content.[56] Regional authorities are therefore expected not only to digitalise services but also to make sure that these services are accessible, secure and of sufficient quality. The **Act on Electronic Communications Services** 917/2014 further aims to promote access to communications networks and services across the country, ensuring that they are reliable, safe and affordable, supporting competition and protecting privacy and the confidentiality of communications. While this law does not give regions direct planning role, it still shapes the wider environment in which regional authorities operate and supports more equal access to digital connectivity across regions.[57]

In Norway, regional responsibilities in the digital transition are more focused on digital security and resilience. The two main legal acts are the **Digital Security Act** of 2023 and the **Security Act** of 2018 reflecting a security-centred understanding of digitalisation, where the main concern is how public actors protect critical services, systems and infrastructure in a more digital society.

[55] Finlex. (2019). Act on Information Management in Public Administration. https://www.finlex.fi/en/legislation/translations/2019/eng/906.
[56] Finlex. (2019). Act on the Provision of Digital Services. https://www.finlex.fi/en/legislation/2019/306.
[57] Finlex. (2014). Act on Electronic Communications Services. https://www.finlex.fi/en/legislation/translations/2014/eng/917.

The **Digital Security Act** does not name county municipalities directly, but it creates obligations based on function. Providers of socially important services, such as transport, health, or digital infrastructure and providers of digital services such as cloud services, fall under this law.[58] Since county municipalities are often involved in such services, they may be covered by these rules and must carry out risk assessments, apply appropriate technical and organisational security measures, maintain a risk-based level of security and notify the relevant authority without delay in the event of serious incidents. The **Security Act** explicitly includes county and municipal bodies and requires them to carry out protective security work to safeguard Norway's sovereignty, security interests and key national functions. These bodies must organise proper security management, carry out regular risk assessments, put in place broad security measures and maintain adequate protection for critical information systems, infrastructure and facilities.[59] This law is relevant to the digital transition because digitalisation increases dependence on data systems, networks and digital infrastructure, all of which may become targets of disruption or cyberattacks.

In Poland, the legal framework combines administrative digitalisation, cybersecurity and infrastructure development at the regional level. According to the **Act on the Computerization of Entities Performing Public Tasks** of 2005 voivodeship self-government must ensure interoperability of digital services and data security showing that digital transition in Poland is closely linked to the modernisation of public administration.[60] The **Act on the National Cybersecurity System** of 2018 defines responsibilities for operators of essential services in regional public administration. Regional authorities may face special cybersecurity obligations where they operate digital systems or services.[61] This shows that digital transition also brings greater cyber risk and therefore requires legal duties related to security and incident management. Finally, the **Act on Supporting the Development of Telecommunications Services and Networks** of 2010 allows regional governments to co-finance broadband and 5G infrastructure.[62] This is important because it gives subnational level a direct role in supporting the spread of digital infrastructure. Therefore, the regional authorities are not only expected to digitalise their own administration but can also support the physical infrastructure needed for digital transition.

The comparison shows that digital transition is framed less as a standalone regional policy and more as a cross-cutting area linked to public administration, security and connectivity. Regional responsibilities are therefore usually shaped through laws on information management, digital services, cybersecurity and telecommunications rather than through one comprehensive digital-transition act. While countries differ in whether they place stronger emphasis on good governance, digital security, or infrastructure development, the common pattern is that regions contribute mainly by improving public digital capacity, ensuring secure and interoperable services and supporting the wider infrastructure needed for digitalisation.

[58] Ministry of Justice and Public Security. (2023). Digital Security Act. https://lovdata.no/dokument/LTI/lov/2023-12-20-108.
[59] Ministry of Justice and Public Security. (2018). Security Act. https://lovdata.no/dokument/NLE/lov/2018-06-01-24.
[60] Sejm of the Republic of Poland. (2005). Act on the Computerization of Entities Performing Public Tasks. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20050640565.
[61] Sejm of the Republic of Poland. (2018). Act on the National Cybersecurity System. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180001560.
[62] Sejm of the Republic of Poland. (2010). Act on Supporting the Development of Telecommunications Services and Networks. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20101060675.

3.4. Strategic Framework for Regional Involvement in the Digital Transition

This part of the policy report examines the national strategic framework for the green and digital transition in Latvia, Finland, Norway and Poland. It focuses on key national strategies and policy documents and how they involve the regional level. The aim is to understand what role regions play in these transitions and how clearly their responsibilities are defined across countries.

Across the four BSR countries, national strategies on digital transition include the regional level, but they differ in how they assign responsibilities. In some cases, regions are named as co-responsible actors, in other cases they are in a role of coordinating actors. Still in others, strategies focus more on cooperation, support, or stakeholder involvement without giving regions clear tasks or responsibilities. In general, Latvia and Poland give regions a more concrete role in implementation. Finland assigns regions an important but mainly strategic and enabling role. Norway relies more on coordination and collaboration than on clearly defined regional responsibilities.

Finland includes regions in digital transition strategies in a strategic and enabling way. The main reference is **Finland´s Digital Compass (2022)**, which presents digitalisation as a shared national effort involving government, municipalities, businesses and other actors. It encourages subnational actors to support national goals and include them in their own strategies, but it does not assign detailed implementation tasks.[63] Similar approach in the **National Digital Decade Strategic Roadmap (2024)**. Digitalisation is seen as a shared responsibility, but without clearly defined regional mandates.[64] Finland's **Regional Development Guidelines 2040** provide a clearer role for regions and municipalities in twin transition. The strategy says that regions and municipalities play an important role in enabling the green and digital transition of the economy and highlights the importance of digitalisation for regional development, skills and accessibility as well as climate change and loss of biodiversity.[65]

However, the role of local and regional actors remains largely strategic. Regions are expected to create conditions for digital transformation rather than implement specific measures. A more specific dimension for local and regional actors is in the **Digital Infrastructure Strategy 2025**, which focuses on connectivity and networks. The strategy, however, mainly highlights the role of municipalities rather than regions in infrastructure deployment.[66] So it can be concluded that Finland recognises the importance of regions, but mainly in a supporting and enabling role.

In Latvia, the regional role in digital transition is visible in strategic documents, even though planning regions are not self-governing authorities. The **Digital Transformation Guidelines for 2021-2027** clearly include planning regions in implementation. For example, in measures related to fostering knowledge and improving digital skills in education, planning regions are named as

[63] Finnish Government. (2022). Finland's Digital Compass. https://julkaisut.valtioneuvosto.fi/handle/10024/164472.
[64] European Commission. (2026). National strategic roadmaps. https://digital-strategy.ec.europa.eu/en/policies/national-strategic-roadmaps.
[65] Ministry of Economic Affairs and Employment of Finland. (2022). Regional Development Guidelines 2040. https://tem.fi/en/regional-development-guidelines-2040.
[66] Finnish Government. (2018). Digital infrastructure strategy: Turning Finland into the world leader in communications networks. https://valtioneuvosto.fi/en/-/digital-infrastructure-strategy-turning-finland-into-the-world-leader-in-communications-networks.

co-responsible alongside ministries, academic institutions, NGOs and municipalities.[67] This shows that planning regions are part of the implementation network, especially in skills development and in activities such as pilot projects and innovation initiatives, which connects regions not only to public administration but also to innovation and knowledge transfer. The strategy also gives regions a practical role in development of electronic communications infrastructure and digitalisation of business. In case of electronic communications infrastructure, planning regions cooperate with the Ministry of Transport and help set priorities together with municipalities. In addition, support for business digitalisation includes Digital Innovation Hubs with regional contact points, suggesting that regions act as a link between national programmes and local businesses.

This role is further strengthened by the **Regional Policy Guidelines for 2021-2027**, which links digitalisation to smart services, infrastructure, cybersecurity and innovation.[68] Planning regions are responsible for tasks related to smart municipalities, including the use of technologies such as artificial intelligence (AI), geospatial technologies, IoT (Internet of Things) and 5th generation mobile network (5G). The strategy also supports regional-level solutions for issues that go beyond individual municipalities and expects regions to test new services such as smart mobility or digital healthcare. Latvia's **National Industrial Policy Guidelines 2021-2027** further expects regions to implement digital solutions by making planning regions co-responsible for implementation of digital-skills development and innovative smart mobility initiatives.[69]

In Norway, the regional role in national digital strategies is defined in the **National Digitalisation Strategy 2024-2030** assigns regions a coordinating role. The strategy emphasises that digitalisation should be carried out through cooperation between levels of government, the private sector and other actors, with regional authorities helping to connect these actors across territories. Their role is therefore to support coordination, collaboration and alignment of efforts, rather than to act as primary implementers of specific digital measures.

The main focus areas of the strategy include improving public digital services and strengthening security and privacy as key prerequisites, as well as further *"...increasing data sharing and harnessing the opportunities in data and data-driven innovation, leveraging opportunities in artificial intelligence, speeding up the green and digital transition, promoting an adaptable and innovative business sector while maintaining trust, strengthening inclusion and safeguarding considerations for children and young people."* (p. 7)[70] It explicitly highlights the link between the green and digital transitions and stresses the need to use digital tools to support sustainability and climate goals.

[67] Cabinet of Ministers of Latvia. (2021). Digital Transformation Guidelines 2021–2027. https://likumi.lv/ta/id/324715-par-digitalas-transformacijas-%20%20pamatnostadnem20212027-gadam.
[68] Cabinet of Ministers of Latvia. (2019). Regional Policy Guidelines 2021–2027. https://likumi.lv/ta/id/310954-par-regionalas-politikas-pamatnostadnem-2021-2027-gadam.
[69] Cabinet of Ministers of Latvia. (2021). National Industrial Policy Guidelines 2021–2027. https://likumi.lv/ta/id/321037-par-nacionalas-industrialas-politikas-pamatnostadnem-2021-2027-gadam.
[70] Norwegian Ministry of Digitalisation and Public Governance. (2024). National Digitalisation Strategy 2024–2030. https://www.regjeringen.no/contentassets/c499c3b6c93740bd989c43d886f65924/en-gb/pdfs/digitaliseringsstrategi_eng.pdf.

The **National Cyber Security Strategy for Norway (2019)**[71] and the **Data Centre Industry-a sustainable industry of the future of digital Norway (2025)**[72] both emphasise collaboration in digital solutions rather than assigning specific responsibilities to regions. This reflects a broader approach of MLG where policy relies on coordination between actors rather than clearly defined roles. Local and regional authorities are therefore present in the system of the governance, but their role is less clearly specified than in other countries, such as Latvia or Poland.

In Poland, the regional role is more concrete and focused on implementation of national digital policy. The **Integrated State Informatization Program (PZIP) 2022+** assigns regions tasks related to e-government and open data.[73] **Digital Poland 2021-2027** further strengthens this role by linking regions to the management of EU funds supporting broadband and digital services.[74] Regions act as intermediate bodies, which gives them a direct role in programme delivery and resource allocation. The **National AI Development Strategy 2030** adds another regional dimension by supporting regional AI and innovation centres. This connects regions to the development and spread of new technologies and digital skills.[75]

National digital strategies in all four countries recognise the regional level, but they differ significantly in how concretely they assign responsibilities. Finland mainly presents regions as strategic and enabling actors, Norway emphasises coordination and collaboration, while Latvia and Poland give regions a more direct implementation role in selected areas such as digital skills, infrastructure, innovation support and programme delivery. Across all four cases, digital transition is treated as a shared multi-level process, but the degree to which regions are expected to act as implementers rather than facilitators varies significantly.

3.5. Strategic Framework for Regional Involvement in the Green Transition

Similarly to the digital transition, national strategies on the green transition include the regional governance, but they differ in how clearly they assign responsibilities. In some cases, regions act mainly as partners or coordinators. In others, strategies assign regions specific tools, funding, planning, or implementation tasks. However, national strategies usually do not create new legal powers for regions, but they assign roles in planning, coordination, implementation, financing, or monitoring.

In Finland, the regional role in green transition is strong and clearly connected to implementation, especially through funding and planning. The national climate strategy, **Carbon Neutral Finland 2035**, not only sets targets to meet the EU´s climate commitments by 2030 and to be carbon

[71] Norwegian Government. (2019). National Cyber Security Strategy for Norway. https://www.regjeringen.no/contentassets/c57a0733652f47688294934ffd93fc53/national-cyber-security-strategy-for-norway.pdf.
[72] Norwegian Government. (2025). The data centre industry – a sustainable industry of the future for the digital Norway. https://www.regjeringen.no/en/documents/the-data-centre-industry-a-sustainable-industry-of-the-future-for-the-digital-norway/id3112356/.
[73] Government of Poland. (2020). Integrated State Informatization Program (PZIP) 2022+. https://www.gov.pl/web/cyfryzacja/program-zintegrowanej-informatyzacji-panstwa.
[74] Europen Funds for Digital Development. (2026). European Funds for Digital Development 2021–2027. https://rozwojcyfrowy.gov.pl/dokumenty/.
[75] Government of Poland. (2020). Strategy for the development of artificial intelligence in Poland until 2030. https://www.gov.pl/attachment/928200fa-b1a6-4c0c-b3a8-d1fbf1e1175a.

neutral by 2035, but also gives regions access to funding. The regions have access to so-called national Aid for sustainable growth and vitality (AKKE), the use of which is decided by the regions themselves and which may support climate action and the green transition in the regions.[76] The strategy also refers to the work of Regional State Administrative Agencies and ELY Centres, which operate at regional level and support implementation showing that Finland uses a territorially organised system for climate governance.

The **Integrated National Energy and Climate Plan** strengthens further the regional dimension. First, Finland strengthened the national adaptation role of the North Ostrobothnia ELY Centre, which coordinates and supports regions and regional actors, including local authorities, in implementing the National Adaptation Plan. Second, the Just Transition Fund (JTF) aiming to halve energy use of peat by 2030 is to be implemented in 14 Finnish regions through regional transition plans.[77]

The **Bioeconomy Strategy 2022-2035** explicitly states that the regions play a key role in achieving its objectives and encourages them to prepare their own bioeconomy implementation plans.[78] While this is framed as encouragement rather than a hard legal mandate, the strategy clearly envisions regions as active implementers of the bioeconomy transition. The strategy also links regional action plans to smart specialization strategies, regional programmes, bioeconomy clusters, technology platforms and monitoring systems. The **Innovation and Skills in Finland 2021-2027** programme assigns funding and decision-making power for certain projects to regional bodies. The regions' own programmes and smart-specialisation priorities are described as key to implementation and the statutory regional cooperation groups decide on significant projects related to the EU regional and structural policy programme.[79] In addition, regional land-use planning in compliance with the **Land Use and Building Act** is a key tool of regional green transition in Finland. Regional councils have formal responsibility for land-use plans, which are important for energy infrastructure, settlement patterns and sustainable development.[80]

In Latvia, strategies related to green transition involve planning regions, although typically not as highly autonomous regional authorities but rather as territorial partners within a MLG framework. The **Sustainable Development Strategy of Latvia until 2030** provides a broad long-term orientation by prioritizing renewable and secure energy, sustainable management of natural resources and ecosystem services and innovation in public governance in which planning regions become relevant actors for territorial implementation.[81] In the **National Development Plan of Latvia for 2021-2027** planning regions are mentioned as collaborators in several measures related to innovations and environmental sustainability.[82] The **Action Plan for the Transition to**

[76] Finnish Government. (2022). Carbon Neutral Finland 2035. https://julkaisut.valtioneuvosto.fi/handle/10024/164323.
[77] Finnish Government. (2024). Integrated National Energy and Climate Plan. https://julkaisut.valtioneuvosto.fi/handle/10024/165742.
[78] Finnish Government. (2022). The Finnish Bioeconomy Strategy. Sustainably towards higher value added. https://julkaisut.valtioneuvosto.fi/handle/10024/163969.
[79] EU Structural Funds in Finland. (2026). Priorities for development in Eastern Finland. https://rakennerahastot.fi/en/eastern-finland/priorities-for-development.
[80] Ministry of the Environment. (2016). Regional land-use plans. https://ym.fi/en/regional-land-use-plans.
[81] Ministry of Smart Administration and Regional Development. (2010). Sustainable Development Strategy of Latvia until 2030. https://www.varam.gov.lv/sites/varam/files/content/files/lias_2030_en.pdf.
[82] Cabinet of Ministers of Latvia. (2020). National Development Plan of Latvia for 2021–2027. https://www.mk.gov.lv/en/media/15165/download?attachment.

a Circular Economy 2020-2027 includes planning regions in "promotion of industrial symbiosis" linking them to circular economy implementation measures at regional level.[83]

The **National Energy and Climate Plan 2021-2030** gives planning regions a weaker role when it comes to green transition. They are mentioned as potential beneficiaries of financial support and awareness activities towards low-carbon development.[84] On the other hand, the **Strategy for Achieving Climate Neutrality by 2050** highlights planning regions as important actors in preparing in preparing long- and medium-term development documents that take national GHG emission reduction targets into account.[85]

The **Regional Policy Guidelines for 2021-2027** link planning regions to smart development, energy efficiency, circular economy and sustainable resource use.[86] They also emphasise that regional solutions are needed for issues that go beyond individual municipalities in addressing issues that cross municipal boundaries and affect businesses, education institutions, research organizations and clusters across a wider territory. The document also links smart development and governance to social innovation and collaborative forms of planning and implementation involving businesses, research organizations, civil society and residents. Finally, the Latvian **Environmental Policy Guidelines 2021-2027** make planning regions co-responsible for evaluating and incorporating green and blue infrastructure and multifunctional solutions into territorial development plans.[87]

In Norway, the regional role in strategies related to green transition is defined across several national documents, including the **Norwegian Plastics Strategy (2022)**, the **Strategy on Land Use, Land Use Change and Forestry Sector 2020-2050**, the **Climate Adaptation 2024-2028**, the **National Pollinator Strategy**, the **National Waste Plan 2020-2025** and the **National Charging Strategy (2023)**. These strategies cover a wide range of areas such as biodiversity, land use, waste management, transport and climate adaptation. However, they mostly do not assign clearly defined implementation tasks to the regional level.

The **Norwegian Plastics Strategy (2022)** focuses on reducing plastic pollution and improving recycling across sectors such as fisheries, agriculture, transport and households. It highlights the need for coordination and cooperation between public authorities including counties, businesses and society.[88] The **National Waste Plan 2020-2025**[89] and the **National Pollinator Strategy**[90] follow a similar approach, emphasizing cooperation across sectors and levels of governance.

[83] Cabinet of Ministers of Latvia. (2020). Action Plan for the Transition to a Circular Economy 2020–2027. https://likumi.lv/ta/id/317168-par-ricibas-planu-parejai-uz-aprites-ekonomiku-2020-2027-gadam.
[84] European Commission. (2024). Latvia final updated NECP 2021–2030. https://commission.europa.eu/publications/latvia-final-updated-necp-2021-2030-submitted-2024_en.
[85] UNFCCC. (2019). Strategy of Latvia for the Achievement of Climate Neutrality by 2050. https://unfccc.int/sites/default/files/resource/LTS1_Latvia.pdf.
[86] Ibid.
[87] Cabinet of Ministers of Latvia. (2022). Environmental Policy Guidelines 2021–2027. https://likumi.lv/ta/id/335137-par-vides-politikas-pamatnostadnem-2021-2027-gadam.
[88] Norwegian Government. (2022). Norwegian Plastics Strategy. https://www.regjeringen.no/en/dokumenter/norwegian-plastics-strategy/id2867004/.
[89] Norwegian Environment Agency. (2019). National Waste Plan 2020–2025. https://www.miljodirektoratet.no/publikasjoner/2019/desember-2019/avfallsplan-2020-2025/.
[90] Norwegian Government. (2018). National Pollinator Strategy. https://www.regjeringen.no/en/dokumenter/nasjonal-pollinatorstrategi/id2606300/.

The **Climate Action Plan for 2021-2030** and **Better growth, lower emissions-the Norwegian´s Government Strategy for Green Competitiveness** stress the importance of voluntary cooperation between public authorities, business and research actors in achieving climate targets, but they also highlight that "*municipalities and counties play a key role in efforts to reduce greenhouse gas emissions.*" Counties are important partners in areas such as green public procurement and the development of low-emission transport systems.[91] For example, counties are responsible for ferry procurement and zero- and low-emission solutions through procurement processes. They are also supported through the *Klimasats* grant scheme, which allows subnational actors to "*introduce their own climate-related measures*" (p.14), including projects such as biogas infrastructure and local feasibility studies. At the same time, the regional role remains largely supportive. Counties are described as "*important stakeholders … aware of local opportunities and needs,*" (p.106) and they are expected to take climate considerations into account in spatial planning and public health policy.[92] The government also provides guidance and tools so that counties can include environmental considerations, such as carbon-rich areas, in planning. However, counties often remain free to decide whether to include environmental requirements in procurement processes.

The **Climate Adaptation Strategy 2024-2028** sets a similar strategy towards subnational actors emphasising the need to strengthen resilience and manage climate risks through coordination across levels.[93] Norway recognises the importance of the regional level, but mainly frames municipalities and counties as coordinators and implementation partners within broader national frameworks rather than as actors with clearly defined and binding responsibilities.

In Poland, the **National Energy and Climate Plan for 2021-2030** includes regional governments as key actors and links them to measures such as emission reduction in heating and transport sectors. The Clean Air programme is especially important, as it creates legal and financial tools for implementing air protection at local and regional level, including anti-smog measures adopted by voivodship assemblies. NECP further strengthens local and regional level role by linking regions to waste management and support for coal regions through the Just Transition Fund. Five voivodships (Lower Silesian, Lodz, Malopolska, Silesian and Greater Poland) are specifically identified as areas for transition, with measures such as retraining, innovation and land restoration.[94]

The **Polish 2030 National Environmental Policy** provides a very detailed role for regions. It identifies region-specific problems, assigns tasks to regional and local actors and links environmental programmes to regional planning and financing.[95] Voivodship environmental protection programmes are key tools and regional funds play an important role in financing

[91] Norwegian Government. (2017). Better growth, lower emissions: The Norwegian Government's strategy for green competitiveness. https://www.regjeringen.no/en/documents/bedre-vekst-lavere-utslipp--regjeringens-strategi-for-gronn-konkurransekraft-engelsk/id2575420/.
[92] Norwegian Ministry of Climate and Environment. (2021). Norway´s Climate Action Plan for 2021–2030. https://www.regjeringen.no/contentassets/a78ecf5ad2344fa5ae4a394412ef8975/en-gb/pdfs/stm202020210013000engpdfs.pdf.
[93] Norwegian Environment Agency. (2024). Climate adaptation 2024–2028. https://www.miljodirektoratet.no/publikasjoner/2024/januar-2024/klimatilpasning-2024--2028/.
[94] Ministry of Climate and Environment. (2024). National Energy and Climate Plan. https://www.gov.pl/web/climate/national-energy-and-climate-plan.
[95] Ministry of Climate and Environment. (2019). Poland's Environmental Policy 2030. https://bip.mos.gov.pl/fileadmin/user_upload/bip/strategie_plany_programy/Polityka_Ekologiczna_Panstwa/Polityka%20Ekologiczna%20Państwa%202030%20ENG_wersja%20internet.pdf.

projects. Regions are also involved in monitoring and reporting through regional indicators and environmental inspection systems. Other strategies reinforce this strong role of voivodships. The **Sustainable Development Strategy for Rural Areas, Agriculture and Fisheries 2030** involves regional actors in planning and coordination.[96] The **Energy Policy of Poland 2040** assigns local governments a role in implementing energy policy including energy planning activities and involvement in the local low-emission economy including renewable energy deployment, energy efficiency and energy clusters.[97] The **National Waste Management Plan 2028**,[98] **Strategy for Responsible Development**[99] and **National Adaptation Strategy**[100] also require regional planning and implementation in waste management, transport, spatial planning and adaptation measures. Finally, the **Clean Air** programme gives voivodships a direct role in distributing financial support.[101]

National strategies related to the green transition in all four countries recognise the regional level, but they differ in how concretely they assign responsibilities and implementation tools. Finland and Poland give regions a relatively strong role through funding, planning, programme delivery and implementation, while Latvia and Norway rely more on coordination, partnership and territorial support within broader MLG frameworks. In all four cases, green transition is treated as a shared governance process in which regions are important actors, but their influence depends less on new formal powers and more on how strongly national strategies connect them to planning, financing and practical implementation.

[96] Government of Poland. (2023). Sustainable Development Strategy for Rural Areas, Agriculture and Fisheries 2030. https://www.gov.pl/attachment/2bc064a5-46b8-41c7-96b0-48387ad0a372.
[97] Ministry of Climate and Environment. (2021). Energy Policy of Poland until 2040. https://www.gov.pl/web/climate/energy-policy-of-poland-until-2040-epp2040.
[98] Government of Poland. (2023). National Waste Management Plan 2028. https://isap.sejm.gov.pl/isap.nsf/download.xsp/WMP20230000702/O/M20230702.pdf.
[99] Ministry of Funds and Regional Policy. (2019). Strategy for Responsible Development. https://www.gov.pl/web/fundusze-regiony/informacje-o-strategii-na-rzecz-odpowiedzialnego-rozwoju.
[100] Ministry of Climate and Environment. (2013). Strategic Adaptation Plan 2020. https://www.gov.pl/web/klimat/strategiczny-plan-adaptacji-2020.
[101] Government of Poland. (2024). Clean Air programme. https://www.gov.pl/attachment/f68f0088-ed18-4629-a4b3-0e2eb696e24e.

4. Regional Framework for the Green and Digital Transition

This part of the policy report looks at regional-level strategies and plans related to the green and digital transition in the case countries. It focuses on the types of documents regions prepare, whether these are required or voluntary and how green and digital priorities are included in them. The aim is to show how regions translate green and digital goals into regional planning.

In all four countries regions prepare both mandatory strategies and additional voluntary or semi-obligatory documents related to the digital and green transition. In general, green and digital policies and priorities are not treated separately, but they are rather included in broader regional development strategies, smart specialisation strategies, spatial planning and also in sectoral documents such as transport, energy or waste management plans.

Latvia combines general regional development strategies with additional voluntary thematic documents in selected sectoral policies. Planning regions therefore include green and digital goals in broad development strategies, while some also prepare more detailed documents on energy, climate, innovation, or green infrastructure. All regions prepare key development documents such as the **Sustainable Development Strategy** and the **Regional Development Strategy** (for 2021-2027 or 2022-2027). These cover the main development directions of the planning regions Zemgale, Kurzeme, Riga, Vidzeme and Latgale. In practice, green and digital priorities are treated as cross-cutting themes rather than separate policy areas.

Some Latvian regions also prepare more specific thematic documents. This is especially visible in Vidzeme, which has developed a **Strategy for Attracting Domestic and Foreign Investment in the Priority Smart Specialisation Fields**,[102] a **Strategic Framework for Energy and Climate Resilience**,[103] a **Sustainable Food System Strategy**[104] and a **Smart Specialisation Strategy**[105] linking the region to both digital and green policies. Other examples include the Riga Planning Region **Heating Development Action Programme**[106] or the **Use of Renewable Energy in Transport**[107] in Zemgale. These strategies include digital innovation, research and business development, while energy and climate frameworks focus on decarbonisation, adaptation and sustainable energy.

In Finland, the governance system is more clearly defined by law. The most important legal basis is the **Act on Regional Development and the Implementation of the European Union's Regional and Structural Policy (756/2021)** providing for the implementation and coordination of

[102] Vidzeme Planning Region. (2023). Strategy for attracting local and foreign investment in the priority smart specialisation areas of the Vidzeme Planning Region for 2022–2027. https://www.vidzeme.lv/wp-content/uploads/2024/11/Vietjo_un_rvalstu_investciju_piesaistes_stratija_Vidzemes_plnoanas_reiona_prioritrajm_vieds_specializcijas_jomm_2022.-2027._gadam.pdf.
[103] Vidzeme Planning Region. (2024). Strategic framework for energy and climate. https://www.vidzeme.lv/wp-content/uploads/2025/02/19.02.-Strategiskais_ietvars_energetika_klimats_.pdf.
[104] Vidzeme Planning Region. (2024). Strategic guidelines for a sustainable food system in Vidzeme. https://www.vidzeme.lv/wp-content/uploads/2025/06/Vidzemes-ilgtspejigas-partikas-sistemas-strategiskas-vadlinijas.pdf.
[105] Vidzeme Planning Region. (2022). Smart specialisation strategy 2022–2030. https://www.vidzeme.lv/wp-content/uploads/2024/11/VPR_Smart_Specialisation_2022-2030_FINAL.pdf.
[106] Riga Planning Region. (2016). Heating supply programme of the Riga Planning Region. https://rpr.gov.lv/wp-content/uploads/2018/02/RPR_siltumapg%C4%81des-programma.pdf.
[107] Zemgale Planning Region. (2018). Prospects for the use of renewable energy in transport in the Zemgale region. https://www.zemgale.lv/lv/media/127/download?attachment.

national regional policy and regional and structural policy of the EU and according to which the regional council must prepare a regional programme (*maakuntaohjelma*).[108] This programme is mandatory and must include or be linked to a smart specialisation strategy, which ensures that both digital and green priorities are part of a legally required regional framework. Public authorities must also take this programme into account, which further strengthens its role. This Act is crucial for management and coordination of the EU regional and structural policy funds as well.

Finland does not require a separate digital transition plan for each region. Instead, the regional programme and smart specialisation strategy play a key role. **Smart specialisation strategies** are therefore key for regional digital transition in Finland. All regions have them, either as part of the regional programme itself or as separate documents. For example, **Helsinki-Uusimaa** focuses on resource efficiency and innovation,[109] **South Ostrobothnia** on productivity and digitalisation in manufacturing and remote work and services[110] and **Southwest Finland** on clean solutions and innovations and growth.[111] These examples show that while the national Digital Compass is a key national roadmap setting national targets, its regional operationalization occurs through the smart specialisation and regional programme strategies.

In case of green transition documents, Finland relies on broad regional programme supported by land use planning and sustainability. The **Act on Regional Development and the Implementation of the European Union's Regional and Structural Policy (756/2021)** defines regional development as promoting sustainability, growth, competitiveness, well-being and climate action by both mitigation and adaption measures.[112] This gives the regional programme a strong environmental focus. Particular regional strategies further include climate-related goals such as achieving carbon neutrality, circular economy, renewable energy and climate adaptation measures.

For example, the **Helsinki-Uusimaa Smart Specialisation Strategy** refers explicitly to the goal of carbon neutrality by 2035 and includes circular economy, new energy sources, bioeconomy innovations and new materials.[113] **South Ostrobothnia**'s strategy addresses climate mitigation, adaptation, circular economy roadmaps, green public procurement, land-use planning in support of green projects and carbon-neutral solutions in products, materials, services and production methods.[114] **Southwest Finland**'s strategy and regional programme are similarly linked to

[108] Finlex. (2021). Act on Regional Development and Implementation of the European Union's Regional and Structural Policy (756/2021). https://www.edilex.fi/saadoskokoelma/20210756.pdf.
[109] Helsinki-Uusimaa Regional Council. (2020). Smart specialisation strategy for the Helsinki-Uusimaa Region. https://uudenmaanliitto.fi/wp-content/uploads/2021/10/Smart_specialisation_strategy_for_Helsinki-Uusimaa_Region.pdf.
[110] Regional Council of South Ostrobothnia. (2025). Smart specialisation strategy. https://epliitto.fi/aluekehitys/alykkaan-erikoistumisen-strategia/.
[111] Regional Council of Southwest Finland. (2026). Smart specialisation strategy 2021–2027. https://varsinais-suomi.fi/kehittaminen/mika-maakuntastrategia-on/alykkaan-erikoistumisen-strategia-2021-2027/.
[112] Finlex. (2021). Act on Regional Development and Implementation of the European Union's Regional and Structural Policy (756/2021). https://www.edilex.fi/saadoskokoelma/20210756.pdf.
[113] Helsinki-Uusimaa Regional Council. (2020). Smart specialisation strategy for the Helsinki-Uusimaa Region. https://uudenmaanliitto.fi/wp-content/uploads/2021/10/Smart_specialisation_strategy_for_Helsinki-Uusimaa_Region.pdf.
[114] Regional Council of South Ostrobothnia. (2025). Smart specialisation strategy. https://epliitto.fi/aluekehitys/alykkaan-erikoistumisen-strategia/.

sustainable partnerships, green and just transition, energy efficiency, adaptation and circular economy.[115]

In Norway, the regional level in green and digital transition relies on two planning tools used by the county authorities: the **Regional Planning Strategy** and the **Regional Plan**. Of these, the Regional Planning Strategy is the key legally mandated strategic document. Every county must prepare one every four years, in close cooperation with municipalities, the county governor, regional state authorities and other relevant bodies. This strategy includes a knowledge base about the region, an assessment of development challenges, an evaluation of long-term opportunities, a consideration of national expectations, long-term development goals and a decision on which issues should be addressed through further regional planning.[116] It therefore functions as the main entry point through which counties decide which digital and green policies are strategic priorities. The Regional Plan then develops these priorities further under the framework defined by the Regional Planning Strategy. These plans may be thematic or sectoral and are the main instruments through which county municipalities follow up identified issues.[117]

Similarly to other countries also in the Norwegian case, this means that there may not always be one separate, nationally standardized digital strategy or green strategy for each county, but counties are expected to address these issues through their regional planning system. Furthermore, Norwegian regions develop also **Regional Water Management Plans (2022-2027)**, which are especially relevant to the green transition because they address water management and environmental sustainability including biodiversity at regional level.

In Poland, the regional level (voivodeships) has several required strategies and plans connected to twin transition. In the area of digital transition, the key regional instruments are **Regional Innovation Strategies for Smart Specialisation (RIS3)** being part of the EU Cohesion Policy and linked to access to EU funding, including the European Regional Development Fund (ERDF) and Horizon Europe instruments, operating at both national and regional level in Poland.[118] They define regional innovation priorities and usually include digital transformation, Industry 4.0 and related modernization goals.

In addition, some regions also prepare voluntary strategies and platforms, such as the **Spatial Information System of the Greater Poland Voivodeship**.[119] This means that in Poland, the digital transition is carried by a combination of required EU-linked innovation strategies and operational programmes at both national and regional level in some cases supplemented by voluntary regional digital strategies and programmes.

In the area of green transition documents the broadest is the **Voivodeship Development Strategy**, which every voivodeship must prepare under the Act on the Principles of Development

[115] Regional Council of Southwest Finland. (2026). Smart specialisation strategy 2021–2027. https://varsinais-suomi.fi/kehittaminen/mika-maakuntastrategia-on/alykkaan-erikoistumisen-strategia-2021-2027/.
[116] Hagen, A. and Higdem, U. (2024). Regional planning strategies: understanding the implementation of a new strategic tool in Norwegian planning law. European Planning Studies 32(12), 2555–2573, doi:10.1080/09654313.2024.2385773.
[117] Norwegian Government. (2021). Regional planning functions. https://www.regjeringen.no/en/topics/plan-bygg-og-eiendom/plan_bygningsloven/planning/introduction-to-the-planning-system-and-the-processes/regional-planning-functions/id2836145/.
[118] European Commission. (2026). Smart Specialisation Platform: Poland. https://ec.europa.eu/regional_policy/assets/s3-observatory/regions/pl.html.
[119] The Spatial Information System of the Greater Poland Voivodeship. (2026). Home page. https://sipww.pl/en/.

Policy of 2006.[120] This is the central regional strategy covering economic, social, environmental, spatial and increasingly also digital priorities. In the climate and energy field, it includes objectives related to environmental protection, renewable energy, energy efficiency and climate adaptation. It is therefore the overarching strategic document through which the green transition is framed regionally.

Another mandatory document is the **Voivodeship Environmental Protection Programme** required under the Environmental Protection Law of 2001. This strategy sets specific objectives, tasks and instruments related to environmental and air quality, water and waste management, biodiversity and climate adaptation.[121] Another mandatory document is the **Voivodeship Waste Management Plan** required by the Waste Act of 2012 defining infrastructure needs, recycling targets and investment priorities for waste management.[122] Given the importance of waste prevention, recycling and circular economy in green transition, it is another important regional planning tool in green transition. Another obligatory strategic document is the **Spatial Development Plan of the Voivodeship**, which sets directions for territorial development, land use, transport corridors, energy infrastructure, environmental protection and climate resilience.

Beyond these required documents, Poland also has a number of supplementary regional documents that are encouraged (for example by the Ministry of Climate and Environment) or widely used. These include regional low-emission economy plans, adaptation plans and sectoral strategies on sustainable mobility, agriculture, or noise protection. These examples include **Regional Action Plans form Climate and Energy** in Lesser Poland[123] or Subcarpathian[124] energy strategies in Lower Silesian[125] or Lubelskie,[126] and declarations such as **Małopolska (Lesser Poland) free from plastic**.[127]

[120] Sejm of the Republic of Poland. (1998). Act on Voivodship Self-government. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19980910576.
[121] Sejm of the Republic of Poland. (2001). Environmental Protection Law. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20010620627.
[122] Sejm of the Republic of Poland. (2013). Act on Waste. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=wdu20130000021.
[123] EkoMałopolska. (2026). LIFE Climate Projects in Lesser Poland. https://klimat.ekomalopolska.pl/life-ekomalopolska-2/.
[124] Podkarpackie Voivodeship. (2023). Regional climate strategy adopted. https://www.podkarpackie.pl/index.php/srodowisko/aktualnosci/wojewodzka-strategia-klimatyczna-przyjeta.
[125] Lower Silesian Voivodeship. (2022). Energy strategy of Lower Silesia: directions for supporting the energy sector. https://umwd.dolnyslask.pl/fileadmin/user_upload/Gospodarka/SEWD/1_Strategia_Energetyczna_Dolnego_Slaska__-_wersja_do_pobrania.pdf.
[126] Lublin Voivodeship. (2024). Energy Policy in the Lublin Voivodeship up to 2030. https://umwl.bip.lubelskie.pl/upload/pliki/284zalacznik_nr_1.pdf.
[127] ToGetAir. (2026). EkoMałopolska: We care about the environment. https://raport.togetair.eu/human/regional-policy/ecomalopolska-we-care-about-the-environment

5. Regional Practice: Evidence from Selected Regions

This part of the report focuses on a selected group of regions in order to provide a more detailed and practice-oriented understanding of how the green, digital and twin transitions are addressed at the subnational level. While the previous parts analyse national frameworks and general regional structures, this section examines concrete regional cases. The selection of regions allows for a more in-depth analysis of how strategies are translated into organisational arrangements and regional practices and activities. The aim of this part is not to provide a comprehensive overview of all regions in the four countries, but rather to identify patterns, differences and examples of how regions approach the twin transition in practice.

This part is structured into three sub-sections. Part 5.1 examines the organisational structures of the selected regions, with a focus on how digital, green and innovation-related functions are embedded within regional administrations. Part 5.2 analyses social innovation in the context of the green, digital and twin transition, looking at how regions develop new forms of cooperation and participation. Part 5.3 focuses on international cooperation, particularly within Interreg programmes and explores how regions engage in cross-border projects and knowledge exchange related to the twin transition. These perspectives provide a more detailed view of how regions operate in practice and how they contribute to twin transition.

5.1. Organisational Structure

In most analysed regions, the main common feature is that digital, climate, energy and/or twin transition governance are usually not organised as separate, fully autonomous departments, but are instead embedded in broader regional development, planning, project-management, or economic structures.

More formal structures can be found in Norwegian and Polish regions, where dedicated digital units or clearly defined environmental departments exist. In contrast, Finnish and Latvian regions rely more on integrated and project-based approaches. These are often supported by strategies, advisory bodies, information services, or specialised agencies rather than formal departments. Moreover, innovation is the least likely to exist as a separate department and is usually handled through smart specialisation, regional development, or advisory platforms. No region has a dedicated twin transition department, which shows that this agenda is still treated as cross-cutting rather than as a separate policy field. So, the regional governance in these areas depends more on coordination, projects and cooperation than on specialised structures.

In Latvian regions (Kurzeme,[128] Riga,[129] Vidzeme;[130] see Table 4), there are no dedicated digital departments. Digitalisation is managed through planning and project-based units, such as Planning Departments or Development and Project Units. Activities include digital skills, platforms and Information and Communication Technologies (ICT)-related projects, but these are not part

[128] Kurzeme Planning Region. (2026). About us. https://kurzemesregions.lv/par-kpr/.
[129] Riga Planning Region. (2026). Organisational structure. https://rpr.gov.lv/par-mums/par-iestadi/rpr-organizatoriska-struktura/.
[130] Vidzeme Planning Region. (2026). Organisational structure. https://www.vidzeme.lv/par-iestadi/struktura/.

of permanent structures. Digital governance is therefore diffused and project-driven rather than structurally embedded.

A similar approach can be seen in Finnish regions. None of the analysed regions (Helsinki-Uusimaa, South Ostrobothnia, Southwest Finland, North Ostrobothnia) has a formal digital department. Digitalisation is handled through information services, GIS systems and development projects and digital governance in Finland is integrated and strategy-based, not organised as a separate unit. For example, in Southwest Finland, digital functions are managed by the Information Services Group (Lounaistieto),[131] which works on open data and spatial information. In North Ostrobothnia, digitalisation is promoted through projects on digital wellbeing and inclusion.[132]

Table 4. Organisational structure in Latvian regions

Region	Digital Transition	Green Transition	Innovation	Twin Transition
Kurzeme	Planning Department and projects	projects (energy, climate, environment)	Planning and Project units	integrated in thematic projects
Riga	project-based (digital skills, governance initiatives)	spatial planning and projects	project platforms	integrated in thematic projects
Vidzeme	Development and Projects unit	energy experts embedded in administration	Innovation Centre within Development unit	integrated in thematic projects

Source: Authors

Norwegian regions show a higher level of institutionalisation showing a more structured approach combining formal departments and cooperation platforms. Trøndelag and Vestland both have dedicated digitalisation departments within their administrations. In addition, digital governance is supported by regional cooperation platforms such as **DigiTrøndelag**[133] and **DigiVestland**,[134] which bring together municipalities through networks and projects. In the region of Oslo, digital governance is even more centralised through the Digitalisation Agency (DIG), which manages infrastructure, services and innovation.[135]

[131] Regional Council of Southwest Finland. (2026). Tasks. https://varsinais-suomi.fi/liitto/organisaatio/tehtavat-2/.
[132] Regional Council of North Ostrobothnia. (2022). Development of digital wellbeing and inclusion in North Ostrobothnia. https://www.pohjois-pohjanmaa.fi/kehittaminen/omat-hankkeet/pohjois-pohjanmaan-digihyvinvoinnin-ja-osallisuuden-kehittaminen/.
[133] DigiTrøndelag. (2026). Home page. https://www.digitrondelag.no/.
[134] DigiVestland. (2026). Home page. https://www.digivestland.no/.
[135] City of Oslo. (2026). Agency for Digitalisation. https://www.oslo.kommune.no/etater-foretak-og-ombud/digitaliseringsetaten/.

Polish regions show a mixed model combining combines formal structures with more flexible arrangements depending on the region. In Lesser Poland[136] and Pomeranian voivodships there are dedicated digital departments responsible for e-government, IT systems and GIS.[137] In Greater Poland, digitalisation is handled across different departments without a separate unit.[138]

In addition to the digital departments, we looked also how innovations are organised within regional governance structures. Innovation governance across the analysed regions is consistently not organised as a separate department and is instead part of regional development structures, often supported by strategic frameworks and advisory bodies.

In Latvian regions, there are no dedicated innovation departments. Innovation policies are carried out by Planning Departments and Development/Project Units, which develop and implement project ideas. In Vidzeme, the presence of an Innovation Centre within the Development and Projects unit represents a more structured approach, but still within an integrated governance framework.

Finnish regions also do not have formal innovation departments. Innovation is implemented through regional development responsibilities and Smart Specialisation Strategies (RIS3).[139] Regional councils coordinate innovation through strategies, EU programmes and roles such as innovation managers.[140] Innovation is therefore strategically embedded in regional development governance, rather than organisationally separated (Table 5).

Table 5. Organisational structure in Finnish regions

Region	Digital transition	Innovation	Green transition	Twin transition
North Ostrobothnia	digital themes in development strategies and projects	Smart Specialisation and development programmes	Climate Work Advisory Board and climate roadmap	strategies and projects
South Ostrobothnia	GIS and data services	embedded in regional development governance	integrated into regional planning and development	policy instruments and strategies
Southwest Finland	Information Services (GIS, open data)	Regional development department and EU projects platform	Valonia and planning units	networks and strategies
Helsinki-Uusimaa	strategic priority within RDI and smart specialisation	embedded in RDI policy and Smart Specialisation Strategy	2030 climate plan and coordination with municipalities	programmes and projects

Source: Authors

In Norway, innovation governance is similarly integrated but more structured. Vestland has a Business, Planning and Innovation Department, which explicitly combines innovation with other

[136] Lesser Poland Voivodeship. (2026). Department of Digitalisation. https://www.malopolska.pl/departamenty/departament-informatyzacji.
[137] Pomorskie Voivodeship. (2026). Department of Digitalisation. https://pomorskie.eu/departamenty/departament-cyfryzacji/.
[138] Greater Poland Voivodeship. (2026). Departments. https://www.umww.pl/departamenty.
[139] Helsinki-Uusimaa Regional Council. (2026). Innovative Helsinki-Uusimaa. https://uudenmaanliitto.fi/en/development-and-planning/innovative-helsinki-uusimaa/.
[140] Regional Council of South Ostrobothnia. (2026). Regional development. https://epliitto.fi/aluekehitys/.

policy areas. In Trøndelag, innovation is embedded in planning (**Strategy for innovation and value creation in Trøndelag**) and business functions and supported through cooperation with external partners such as Innovation Norway.[141] In Oslo, innovation is organised through project-based and networked structures, including experimental initiatives and cross-sector collaborations, such as "i-team" involving municipal units, NGOs, firms and citizen groups.

In Poland, innovation governance in analysed regions is organised through advisory bodies and economic departments. For example, the **Greater Poland Forum for Smart Specialisations** act as consultative platforms supporting innovation policy.[142] In Pomeranian, innovation is coordinated by the Department of Economic Development, supported by regional programmes and investment initiatives.[143] In Lesser Poland, innovation is managed within the Department of Ownership Supervision and Economy responsible for coordinating the Regional Innovation Strategy, supporting entrepreneurship and strengthening cooperation between actors.[144] Moreover, the regional initiative **Innovative Lesser Poland** emphasises building a broader innovation ecosystem, including smart specialisations, cooperation platforms and projects that connect stakeholders and support the development of new solutions.[145]

When it comes to green transition, we looked at departments dedicated to climate and energy. In all regions, dedicated climate or energy departments are also generally absent, but climate governance is often more developed than digital governance through strategies, advisory bodies and specialised organisations. In Latvian regions, there are no formal climate or energy departments. Climate-related work in Kurzeme and Riga is carried out through projects such as renewable energy, environmental protection and energy efficiency. In Vidzeme, energy efficiency experts are part of the administration, showing some specialisation, but not a formal department.

Finnish regions follow a similar model but with stronger coordination. In Helsinki-Uusimaa, climate policy is guided by the Carbon-Neutral Uusimaa 2030 roadmap, which integrates multiple sectors (energy, mobility, land use).[146] In Southwest Finland, climate work is supported by Valonia, a specialized Regional sustainability and energy service centre linked to the Regional Council.[147] In North Ostrobothnia, a Climate Work Advisory Board helps coordinate regional climate targets and promotes cooperation.[148] These examples show a model in which green transition governance is institutionalised through strategies, specialised agencies and coordination bodies rather than formal departments.

[141] Trøndelag County Council. (2017). Strategy for innovation and value creation in Trøndelag. https://www.trondelagfylke.no/contentassets/b91afe6250b342e9b2d73dc270993796/strategy-for-innovation-and-value-creation-in-trondelag.pdf.
[142] Greater Poland Region. (2026). Wielkopolska Forum of Smart Specialisations. https://wielkopolskieforumis.pl/wielkopolskie-forum-is/.
[143] Pomorskie Voivodeship. (2026). Department of Economic Development. https://pomorskie.eu/departamenty/departament-rozwoju-gospodarczego/.
[144] Lesser Poland Region. (2026). Department of Corporate Supervision and Economy. https://www.malopolska.pl/departamenty/departament-nadzoru-wlascicielskiego-i-gospodarki.
[145] Lesser Poland Region. (2026). Innovations. https://www.malopolska.pl/dla-przedsiebiorcy/innowacje.
[146] Helsinki-Uusimaa Regional Council. (2026). Tasks, organisation and strategy. https://uudenmaanliitto.fi/liitto/tehtavat-organisaatio-ja-strategia/.
[147] Regional Council of Southwest Finland. (2025). Valonia and the Regional Council of Southwest Finland celebrated ten years of cooperation. https://varsinais-suomi.fi/valonia-ja-varsinais-suomen-liitto-juhlistivat-kymmenvuotista-yhteista-taivalta/.
[148] Regional Council of North Ostrobothnia. (2026). Climate work advisory board. https://www.pohjois-pohjanmaa.fi/pohjois-pohjanmaan-liitto/organisaatio/ilmastotyon-neuvottelukunta/.

In Norway, climate governance is also integrated into broader structures but includes additional tools (see Table 6). In Trøndelag, climate and energy work is integrated into planning and business functions and supported by initiatives such as Grønt Hjerte AS, a regionally owned energy company. Climate budgets are used as management tools. In Vestland, climate policy is handled within the Business, Planning and Innovation Department, while in Oslo, a dedicated Climate Agency coordinates cross-sectoral climate action.

Table 6. Organisational structure in Norwegian regions

Region	Digital transition	Innovation	Green transition	Twin transition
Oslo	Digitaliseringsetaten (DIG) central agency	labs, i-team, cross-sector projects	Climate Agency coordinating cross-sector work	integrated initiatives
Trøndelag	Department of Finance and Digital Development + DigiTrøndelag platform	embedded in planning/business + external partnerships	planning/business + climate budget + regional initiatives	cross-sector coordination
Vestland	IT and Digitalisation Department + DigiVestland	Business, Planning and Innovation Department	Business, Planning and Innovation Department	cross-sector coordination

Source: Authors

Polish regions show a more formal approach especially in Greater Poland voivodship where a Department of Environmental Management and Climate is responsible for climate policy[149] showing a higher level of formalisation compared to other countries and regions (Table 7). In Lesser Poland and Pomeranian, climate and environmental competences are distributed across departments (ecological policy, environment and agriculture). These departments have clearly defined administrative and regulatory responsibilities, indicating a higher level of formal institutionalisation compared to other countries.

Across all analysed regions, there is no dedicated department for the twin transition. In Latvian regions, the twin transition is addressed through projects that combine digital and environmental goals, but without formal structures. In Finnish regions, it is reflected in strategies such as Smart Specialisation[150] and regional programmes, but not in administrative structures.[151] In Norway, the twin transition is managed through coordination between digital, climate and innovation structures. For example, collaborative platforms and agencies (digitalisation departments, climate agency, innovation networks) interact across policy domains, but remain institutionally separate. In Poland, the twin transition is implemented across several departments, especially those

[149] Greater Poland Voivodeship. (2026). Department of Environment and Climate Management. https://www.umww.pl/departament-zarzadzania-srodowiskiem-i-klimatu.
[150] Regional Council of North Ostrobothnia. (2026). North Ostrobothnia regional programme 2029. https://www.pohjois-pohjanmaa.fi/kehittaminen/mako/mako2029/.
[151] Helsinki-Uusimaa Regional Council. (2026). Previous projects. https://uudenmaanliitto.fi/en/projects/previous-projects/.

responsible for environment, development and EU funds. However, no region has created a specific organisational unit dedicated to integrating digital and green policies.

Table 7. Organisational structure in Polish regions

Region	Digital transition	Innovation	Green transition	Twin transition
Greater Poland	no independent unit, implemented via GIS and data services	Greater Poland Forum for Smart Specialisation (advisory body)	Department of Environmental Management and Climate	cross-sector mostly related to EU units
Lesser Poland	Department of Digitisation	Department of Corporate Supervision and Economy, strategies	Department of Environment, Department of Agriculture	cross-sector mostly related to EU units
Pomeranian	Department of Digitalisation	Department of Economic Development, strategies	Department of Environment and Agriculture	cross-sector mostly related to EU units

Source: Authors

5.2. Social Innovations in the Green, Digital and Twin Transition

This part of the policy report examines how social innovation appears in regional strategies and initiatives, using the definition of social innovation as "*initiatives that create new social interactions and relationships to address social needs*".[152] The analysis looks at social innovation in general, as well as in relation to the green transition, digital transition and the twin transition. The aim is to understand how regions address social needs through new forms of collaboration, participation and problem-solving and to assess how clearly these practices are reflected in regional documents and initiatives.

The analysis revealed that the regional documents and initiatives from Latvia, Finland, Norway and Poland show a similar pattern. Social innovation is rarely defined directly, but many documents include elements that fit this definition. These elements usually appear as new forms of cooperation, participatory governance, cross-sector partnerships, co-creation practices and structured interaction between public authorities, civil society, research institutions and businesses. At the same time, the level of detail differs, because some regions refer only broadly to cooperation and inclusion, while others describe more concrete regional practices.

In Finland, the selected regional programmes do not usually define social innovation explicitly, but they frame regional development through ecosystem-based collaboration and structured multi-actor governance. The **Helsinki-Uusimaa Programme (2022)** presents regional development through partnerships between municipalities, universities, research institutions and firms.[153] Its priorities include sustainable urban development, innovation ecosystems and participatory regional governance. The repeated emphasis on multi-actor coordination suggests

[152] Hlebec, V. and Mandič, S. (2021). Socialne inovacije kot nov tip kolektivnega delovanja. Teorija in praksa 58(1), 5–27, doi:10.51936/tip.58.1.5-27.
[153] Helsinki-Uusimaa Regional Council. (2026). Helsinki-Uusimaa regional programme. https://uudenmaanliitto.fi/en/development-and-planning/helsinki-uusimaa-regional-programme/.

that new governance relationships are seen as central to solving regional challenges of sustainability and competitiveness.

A similar approach can be seen in South Ostrobothnia, where cooperation between municipalities, businesses and communities is used to address regional challenges such as population decline and service access.[154] This can be interpreted as social innovation insofar as the document promotes new territorial cooperation networks to deal with peripheral challenges that cannot be solved by one actor alone. Regional programme in Southwest Finland focuses on cooperation in innovation ecosystems, especially in the maritime sector and circular economy.[155] The structured collaboration between public authorities, research institutions and firms again suggests that the region sees new collaborative relationships as part of innovation and development resonating with the conceptualisation of social innovation ecosystems.[156]

Northern Ostrobothnia highlights competence networks connecting universities, technology firms and municipalities, framing industrial renewal, digitalization and regional resilience as collaborative processes.[157] Across the Finnish cases, then, social innovation is present mainly in the form of institutionalized cooperation networks.

In Latvian regions, social innovation is not defined as a separate concept. In the **Kurzeme Planning Region Development Programme 2021-2027**, innovation is used as a general term across areas such as business, education, environment and services. The example of social innovation is the focus on cooperation between actors such as municipalities, businesses and research institutions. In particular, the regional strategy refers to the *penta helix* model, which is described as a five-stakeholder cooperation model involving government, business, education, NGOs and society.[158] In addition, the strategy's horizontal priority *"Active Society"* reflects ideas of social innovation by emphasising civic engagement and community-driven development. People of different ages and ethnic backgrounds, as well as members of the diaspora, are encouraged to participate in local activities. Thus, in Kurzeme, social innovation is best understood as collaborative governance and inclusive participation.

The **Riga Planning Region Development Programme 2022-2027** uses social innovation mainly in relation to governance capacity, economy and education referring to inclusive communities and cooperation. This is especially evident in Strategic Objective "*Knowledge-based, green, innovative and resilient economy,"* which is framed through terms such as smartness, knowledge, initiative, creativity, efficiency and competitiveness. Strategic Objective **Socially inclusive life in prosperous communities***,* refer to inclusive communities, service design and cross-sectoral cooperation, but the document does not specify concrete mechanisms that would establish new

[154] Regional Council of South Ostrobothnia. (2025). Regional strategy 2050. https://epliitto.fi/aluekehitys/maakuntasuunnitelma-ja-ohjelma/.
[155] Regional Council of Southwest Finland. (2022). Regional programme and partnership work annual review 2022. https://varsinais-suomi.fi/en/liitto/organisaatio/aineistopankki/regional-programme-and-partnership-work-annual-review-2022/.
[156] Parjanen, S., & Pässilä, A. (2025). Emerging social innovation ecosystems—A case study of urban development in Finland. European Planning Studies, 33(12), 2123–2141.
[157] Regional Council of North Ostrobothnia. (2022). North Ostrobothnia regional programme 2025. https://www.pohjois-pohjanmaa.fi/kehittaminen/mako/mako2025/.
[158] Kurzeme Planning Region. (2020). Development programme of the Kurzeme Planning Region for 2021–2027. https://kurzemesregions.lv/darbibas-nozares/attistibas-planosana/regiona-planosanas-dokumenti/kurzeme-2021-2027/.

social interactions or institutionalised forms of co-creation.[159] The closest example of social innovation lies in the emphasis on inter-municipal cooperation, the territorial organisation of public service provision and institutional coordination. This is particularly visible in the framing of Riga as a functional territory, where development is pursued through coordinated action rather than isolated municipal initiatives. However, participation and opportunities for citizens remain mostly implicit. Participation is mentioned in general terms, without new participation models and expanded opportunities are framed through inclusion and accessibility rather than active co-creation.

The **Vidzeme Planning Region Development Programme 2022-2027** is closer to direct understanding of the idea of social innovation. It includes new participatory and co-creation practices such as effective resident councils, increased public involvement in governance, participatory budgeting, youth participation, innovative governance solutions and more active engagement in planning processes.[160] These are genuine examples of attempts to create new social interactions and relationships in order to respond to public needs. Additional elements such as smart and green procurement, stronger advisory and development councils, better-qualified specialists and a regional monitoring and learning system act as enabling conditions for more systemic forms of social innovation. The programme also supports cooperation across sectors, stronger advisory bodies and learning systems. In addition, it promotes innovative social services and a stronger role for NGOs. Vidzeme therefore appears to be the Latvian region where the planning document most clearly reflects participatory and co-creative forms of social innovation.

The Norwegian regional plans of Vestland, Trøndelag and Oslo also focus strongly on interaction among actors. In Vestland, the regional plan emphasizes co-creation and social entrepreneurship. Co-creation is explicitly defined as a method in which "*different actors jointly develop solutions, products, or services"*.[161] These actors include citizens, businesses, public institutions and voluntary organizations and the ambition is to build alliances that can last beyond single projects. This is described as a move away from short-term cooperation toward strategic, long-term cooperation. In addition, the regional planning process itself used scenario workshops that involved residents of different ages, genders, sexualities and ethnic backgrounds, together with authorities and other stakeholders, to discuss the county's future. This was described as a new participatory method that lowered the threshold for democratic participation. Vestland therefore offers examples of social innovation as new participatory and co-creative practices in regional governance.

In Trøndelag, the regional plan emphasises partnerships and collaboration through functional networks. Social innovation is visible especially in the collaboration model between Norwegian Labour and Welfare Administration and the county council to provide tailor-made vocational certificates for job seekers. This is a good example of creating new relationships between welfare administration, education and the labour market in order to address social needs related to employment and skills. The plan also treats volunteering as a "*vital partner*" and stresses stronger

[159] Riga Planning Region. (2023). Development programme of the Riga Planning Region for 2021–2027: Strategic part. https://rpr.gov.lv/wp-content/uploads/2023/04/RPR-AP_2027_Strategiska-dala.pdf.
[160] Vidzeme Planning Region. (2022). Development programme of the Vidzeme Planning Region for 2022–2027. https://www.vidzeme.lv/wp-content/uploads/2024/11/VPR_AP_2022-2027_2.1-1.pdf.
[161] Vestland County Council. (2024). Development plan for Vestland 2024–2028. https://www.vestlandfylke.no/planlegging/utviklingsplanen/.

interaction between the voluntary sector and local communities to generate social value.[162] Moreover, the background condition of Trøndelag as a result of territorial restructuring and merger suggests that regional governance itself is shaped by new collaborative structures.

In Oslo[163] social innovation appears through terms such as social participation, co-creation, inclusive urban development, neighbourhood development and positive energy districts. These are presented as participatory methods for addressing concrete problems, particularly in health, migrant integration and education, with the aim of creating sustainable and inclusive neighbourhoods through local participation.[164] Compared with the Finnish and Latvian documents, the Norwegian examples are more explicit in their attention to participatory methods and co-creation with residents, although they often remain close to the broader language of social sustainability.

In Poland, the examples of social innovations could be found in specific regional initiatives. In Lesser Poland one example is the regional platform **Innovation Lesser Poland**, which serves as a coordination and information hub for innovation actors, including businesses, research institutions and public administration.[165] It supports cooperation, knowledge exchange and the development of innovation projects aligned with regional smart specialisations. By connecting different stakeholders and promoting joint initiatives, the platform strengthens interaction between public institutions and the innovation ecosystem.

In Pomeranian, the **Pomeranian Academy of Public Space Planning** represents another case aiming to improve public space planning through participatory methods and cooperation between local governments, universities, students and residents.[166] Summer academies bring together students of architecture, art and planning with local residents to prepare spatial development proposals. This does not only improve public spaces; it also creates new collaborative relations and distributes responsibility for planning more broadly across the community. It is therefore a particularly concrete example of social innovation through participatory spatial planning and practical co-design.

In Greater Poland, the **Greater Poland Smart Specialization Forum** is a consultative and advisory body built on the *quadruple helix* model.[167] It brings together business, science, public administration and other actors in the regional innovation ecosystem. Its role is to support regional innovation policy, monitor implementation of the **Regional Innovation Strategy**, formulate recommendations, identify new development areas and promote exchange and cooperation among key actors. Although this initiative is more strongly oriented toward innovation governance than toward direct social needs, it still creates new social and institutional relationships to address regional development challenges.

[162] Trøndelag County Council. (2024). Regional planning strategy for Trøndelag. https://www.trondelagfylke.no/globalassets/dokumenter/plan-og-areal/regional-planlegging/regionale-planer-og-handlingsprogram/trfk_regionalplanstrategi_2024_vedtatt.pdf.
[163] Oslo City (Oslo kommune) is the capital city and a municipality that also functions as its own county, while Oslo Region (Akershus fylkeskommune) is the surrounding, separate county council responsible for regional services in surrounding suburbs. They both cooperate with their innovation strategical plans.
[164] City of Oslo. (2024). Planning strategy 2024–2027. https://www.oslo.kommune.no/politikk/kommuneplan/planstrategi-2024-2027/.
[165] Lesser Poland Region. (2026). About us. https://innowacyjna.malopolska.pl/pl/o-nas.
[166] Pomeranian Voivodeship Spatial Planning Office. (2026). Pomeranian academy of public space planning. https://pbpr.pomorskie.pl/home/pappp/.
[167] Greater Poland Smart Specializations. (2026). Home page. https://wielkopolskieforumis.pl/.

Table 8. Social innovations in the regions

Region	General Social Innovation	Digital Transition Social Innovation	Green Transition Social Innovation	Twin Transition Social Innovation
		FINLAND		
Helsinki-Uusimaa	Multi-actor governance ecosystems; participatory regional governance	Smart-city governance platforms; data-driven public services; digital innovation platforms	Coordinated metropolitan climate action; low-carbon urban development; sustainable mobility systems	Smart mobility systems; digital energy monitoring; digital governance tools supporting carbon neutrality
South Ostrobothnia	Cooperation networks between municipalities, SMEs and local communities; rural service collaboration	Digital inclusion programmes; digitalisation of SMEs; digital service accessibility in rural areas	Bioeconomy initiatives; sustainable agriculture; local renewable energy solutions	Digital tools supporting sustainable agriculture and rural resilience
Southwest Finland	Innovation ecosystems connecting public authorities, firms and research institutions	Digitalisation in logistics and manufacturing; innovation platforms	Maritime decarbonisation initiatives; circular economy projects	Integration of Industry 4.0 solutions with circular economy and maritime decarbonisation
North Ostrobothnia	Competence networks between universities, municipalities and firms; co-production models	ICT innovation ecosystems; digital competence development; collaboration with technology firms	Renewable energy development; industrial decarbonisation	Integration of renewable energy systems with digital innovation and industrial transformation
		LATVIA		
Kurzeme	Penta helix cooperation model; “Active Society” promoting civic engagement and community participation	Digital Innovation Centres; digital skills development programmes; digital transformation strategy; e-publicity initiatives	Green business initiatives; green clusters; circular economy business models; green infrastructure in enterprises	Smart monitoring of climate change impacts; smart energy management in municipal buildings; ICT sustainable mobility
Riga	Inter-municipal cooperation; coordinated service provision; functional territory governance	Expansion of digital literacy; ICT use in governance and mobility; innovation in education and competitiveness	Climate-neutral transport systems; sustainable spatial planning; flood risk management; RES; circular economy measures	ICT-supported mobility planning combined with climate-neutral transport objectives
Vidzeme	Participatory budgeting; resident councils; youth participation; co-creation in governance; cross-sector and territorial partnerships	Digital healthcare consultations; broadband expansion; digital skills development; digitalisation of public services and governance	Natural resource management; awareness-raising on sustainability; citizen-science approaches; climate adaptation measures	Smart and green public procurement; ICT-supported sustainable mobility; digitalisation linked with green industrial development

Region	General Social Innovation	Digital Transition Social Innovation	Green Transition Social Innovation	Twin Transition Social Innovation
		NORWAY		
Vestland	Co-creation processes involving citizens, businesses and public institutions; scenario workshops for participatory planning	Digitalisation of municipal services; use of AI and data-driven innovation; broadband development	Nature-based solutions; sustainability-oriented cooperation networks	Co-creation addressing combined digital and environmental challenges; recognition of interdependencies between digital and green policies
Trøndelag	Partnerships and functional networks; cooperation between NAV and county council; volunteer sector engagement	DigiTrøndelag network supporting municipal digitalisation; shared digital solutions across municipalities	Circular industry initiatives; sustainability networks; green industrial development missions	Digital solutions supporting green industry and circular economy; knowledge-sharing networks for sustainability
Oslo	Co-creation and participatory governance in neighbourhood development; inclusive urban development initiatives	Smart-city platforms; data-driven governance; digital participation tools	Zero-emission neighbourhoods; sustainable mobility systems; energy-efficient urban planning	Smart energy districts; data-driven energy management; co-created climate and mobility solutions
		POLAND		
Lesser Poland	Innovation Lesser Poland platform for cooperation;	Platform integrating cultural institutions; digital access to museum services	ICT-supported circular economy and resource management	ICT and digital competences; innovation for clean energy and circular economy
Pomeranian	Participatory spatial planning through public space academies; cooperation between universities, local governments and communities	Digital education programmes; digital skills training for residents; inclusion of digitally excluded groups	Energy communities and energy cooperatives; renewable energy investments; decarbonisation initiatives	Smart grids; energy islands integrating RES with digital management systems; air quality monitoring systems
Greater Poland	Smart Specialisation Forum (quadruple helix cooperation)	Digital School of Wielkopolsk@; development of digital competences in education; ICT adoption in economy	Climate neutrality ecosystem; circular economy initiatives; green energy and electromobility	Integration of ICT technologies with zero-emission economy; digitalisation supporting energy transition and innovations

Source: Authors

Social innovations in digital transition

Most regions treat digitalisation primarily as a technical or economic driver, while social innovation aspects emerge indirectly through digital inclusion, new service models, participatory governance and collaborative digital platforms. Therefore, digital transition policies increasingly involve new forms of interaction between citizens, institutions and organisations, but these are often framed in technical or economic terms rather than explicitly recognised as social innovations.

In Finland, digital social innovation is most visible in the form of institutionalised collaboration and digital innovation ecosystems. The **Helsinki-Uusimaa Programme** frames digitalisation as a cross-cutting enabler, particularly in smart-city governance, data-driven decision-making and digital public services. Cooperation between municipalities, universities and firms leads to the development of digital platforms that restructure interactions between public administration and stakeholders.[168] These arrangements can be interpreted as digital social innovation because they create new channels of interaction and participation, even if citizen-level engagement is not always explicitly emphasised.

In Southern Ostrobothnia, digitalisation is closely linked to digital inclusion and rural development. The programme highlights efforts to improve digital competences and service accessibility in sparsely populated areas, addressing territorial inequalities.[169] This reflects social innovation insofar as it seeks to integrate previously excluded groups into digital systems. Similarly, Southwest Finland and Northern Ostrobothnia frame digitalisation as a collective competence-building process, based on cooperation between firms, universities and public authorities. In Northern Ostrobothnia, ICT competence and innovation networks, particularly around the University of Oulu play a central role in labour-market transformation.[170]

In Latvia, digitalisation is integrated into regional development strategies, but its social dimension is often implicit rather than explicitly framed as social innovation. In the Kurzeme Planning Region, digital innovation is linked to improving ICT infrastructure, accessibility and digital skills. The establishment of **Digital Innovation Centres**, the promotion of digital competences and the development of a regional digital transformation strategy aim to reduce disparities in digital skills and improve quality of life.[171] While they create new opportunities for interaction especially between municipalities, schools and local communities, they are primarily framed as capacity-building and service modernisation tools rather than as a clearly articulated transformation of social relations.

In the Riga Planning Region, digitalisation is addressed through regional development priorities related to education, innovation and mobility, with a focus on digital literacy, ICT use and regional competitiveness. However, the programme does not introduce digital social innovations in the sense of new social practices, new forms of interaction, or community-driven digital

[168] Helsinki-Uusimaa Regional Council. (2026). Helsinki-Uusimaa regional programme. https://uudenmaanliitto.fi/en/development-and-planning/helsinki-uusimaa-regional-programme/.
[169] Regional Council of South Ostrobothnia. (2025). Regional strategy 2050. https://epliitto.fi/aluekehitys/maakuntasuunnitelma-ja-ohjelma/.
[170] Regional Council of North Ostrobothnia. (2022). North Ostrobothnia regional programme 2025. https://www.pohjois-pohjanmaa.fi/kehittaminen/mako/mako2025/.
[171] Kurzeme Planning Region. (2020). Development programme of the Kurzeme Planning Region for 2021–2027. https://kurzemesregions.lv/darbibas-nozares/attistibas-planosana/regiona-planosanas-dokumenti/kurzeme-2021-2027/.

transformation.[172] Digitalisation is treated primarily as a functional tool for economic and administrative efficiency, rather than as a mechanism for reshaping social relations.

In the Vidzeme Planning Region digitalisation is framed as a cross-cutting priority embedded across multiple policy areas, including governance, mobility, education and social services. The programme explicitly links digital transition with cooperation, accessibility and institutional capacity and includes measures such as the development of collaboration-based digital solutions, digital innovation centres, broadband expansion and digitalisation in agriculture and business. Importantly, it also addresses digital inclusion, for example through measures to reduce digital exclusion, improve digital skills across different social groups and introduce digital platforms in healthcare.[173] Under community-oriented priorities, digital tools are used to support inclusive services and participation.

The Norwegian regions provide a stronger emphasis on the social dimension of digitalisation, particularly in relation to inclusion, participation and public service transformation. In Trøndelag, digital initiatives are directly linked to addressing societal challenges such as labour shortages and an ageing population. The strategy highlights the need for an "*inclusive approach to digitalisation*", aiming to reduce the technological gap and increase labour-market participation.[174] Digitalisation is used to enable new forms of cooperation in service delivery, especially in health and care. The **DigiTrøndelag network** is a key example of digital social innovation, as it facilitates coordination, knowledge sharing and joint digital solutions across municipalities.[175] This creates new inter-municipal relationships and supports collective problem-solving.

In Vestland, digitalisation is linked to participation and planning processes. The use of digital consultations supported by artificial intelligence (AI) is presented as a way to lower the threshold for participation and strengthen citizen involvement in planning. The strategy also acknowledges the broader societal implications of digitalisation, including its interaction with issues such as climate justice. Co-creation, data-driven innovation and digital services are framed as areas requiring collaboration across sectors, which reflects an understanding of digital social innovation as a tool for enhancing participation and addressing challenges within the society.[176] In the Oslo region, digitalisation is embedded in smart-city and platform-based governance models. Social innovation appears through co-creation, participatory governance and user-centred experimentation, supported by digital tools. Citizens and civil society actors are encouraged to contribute ideas and monitor implementation processes.[177]

In Poland, Lesser Poland voivodeship uses digital platform the **Virtual Museums of Lesser Poland**.[178] This initiative shows how digital tools create new forms of interaction between cultural

[172] Riga Planning Region. (2023). Development programme of the Riga Planning Region for 2021–2027: Strategic part. https://rpr.gov.lv/wp-content/uploads/2023/04/RPR-AP_2027_Strategiska-dala.pdf.
[173] Vidzeme Planning Region. (2022). Development programme of the Vidzeme Planning Region for 2022–2027. https://www.vidzeme.lv/wp-content/uploads/2024/11/VPR_AP_2022-2027_2.1-1.pdf.
[174] Trøndelag County Council. (2024). Regional planning strategy for Trøndelag. https://www.trondelagfylke.no/globalassets/dokumenter/plan-og-areal/regional-planlegging/regionale-planer-og-handlingsprogram/trfk_regionalplanstrategi_2024_vedtatt.pdf.
[175] DigiTrøndelag. (2026). Home page. https://www.digitrondelag.no/.
[176] DigiVestland. (2026). Home page. https://www.digivestland.no/.
[177] Oslo Municipality. (2023). Strategy for knowledge-based development, innovation and digital technology for Oslo Municipality. https://www.offentligservice.no/strategi-for-kunnskapsbasert-utvikling-innovasjon-og-digital-teknologi-for-oslo-kommune.6575561-400271.html.
[178] Lesser Poland Museums. (2026). About us. https://muzea.malopolska.pl/en/about-us.

institutions and citizens. By digitising collections and making them accessible online, they allow users to explore cultural heritage remotely and increase participation in cultural life. At the same time, they connect multiple institutions through shared digital infrastructure, which improves cooperation and coordination across the region.

In Pomeranian, the project **Get involved. Digital education for everyone** focuses on digital inclusion by providing training in the use of online services, banking applications and digital tools.[179] Targeting groups at risk of digital exclusion, the initiative creates new relationships between citizens and digital services, enabling broader participation in society. The project is an example of digital social innovation aimed at reducing inequalities and empowering individuals through skills development.

In Greater Poland, the **Digital School of Wielkopolsk@ 2030** initiative demonstrates how digitalisation can transform education systems. By integrating ICT into teaching, providing training for teachers and creating technology labs and remote learning infrastructure, the project reshapes relationships between students, teachers and educational institutions.[180] It also connects education more closely to labour-market needs, contributing to long-term social and economic transformation.

Social innovations in green transition

Most regions frame the green transition primarily through technical, infrastructural, or economic measures, while social innovation elements appear mainly through collaboration, participatory approaches, knowledge-sharing networks and community-oriented environmental initiatives.

The Finnish regions integrate green transition with collaborative governance and innovation ecosystems, which can be understood as forms of green social innovation. The **Helsinki-Uusimaa Programme** sees climate neutrality, sustainable mobility and energy-efficient urban development as central goals, implemented through cooperation between municipalities, firms, research institutions and regional authorities.[181] These structured cooperation platforms represent institutionalised cross-sectoral governance arrangements, creating new relationships oriented toward emission reduction and sustainability.

In Southern Ostrobothnia, the green transition is framed through bioeconomy, sustainable agriculture and local energy solutions, with cooperation between agricultural actors, municipalities and regional development bodies. These collaborative networks respond to environmental and demographic challenges while strengthening rural resilience.[182] Similarly, Southwest Finland emphasises maritime decarbonisation and circular economy through partnerships between ports, industries, research institutions and public authorities.[183] Northern Ostrobothnia highlights

[179] Pomorskie Voivodeship. (2026). Join in too: Free digital training courses now open for registration. https://pomorskie.eu/trwaja-zapisy-na-bezplatne-cyfrowe-szkolenia.
[180] Greater Poland Voivodeship. (2026). Innovations that change education for the better. https://csw2030.pl/.
[181] Helsinki-Uusimaa Regional Council. (2026). Helsinki-Uusimaa regional programme. https://uudenmaanliitto.fi/en/development-and-planning/helsinki-uusimaa-regional-programme/.
[182] Regional Council of South Ostrobothnia. (2025). Regional strategy 2050. https://epliitto.fi/aluekehitys/maakuntasuunnitelma-ja-ohjelma/.
[183] Regional Council of Southwest Finland. (2022). Regional programme and partnership work annual review 2022. https://varsinais-suomi.fi/en/liitto/organisaatio/aineistopankki/regional-programme-and-partnership-work-annual-review-2022/.

renewable energy, hydrogen development and industrial decarbonisation as collaborative projects involving municipalities, universities and firms.[184]

In Latvia, in the Kurzeme Planning Region, the green transition is addressed through **Green and Safe Development** priority which includes sustainable energy production, circular economy, climate-neutral policies and natural resource management.[185] An important aspect from the perspective of social innovation is the strong focus on green entrepreneurship within the region's smart specialisation. The development of the Green Deal is presented as a key direction, aiming to support environmentally friendly business practices. In this context, green business can be understood as a form of social innovation, as it promotes new ways of combining economic activity with environmental responsibility and encourages new relationships between businesses, communities and public actors. This includes the development of green clusters, the promotion of sustainable lifestyles and the introduction of innovative solutions for urban development.

In the Riga Planning Region, the green transition is addressed through the development of integrated public transport, mobility hubs, low-emission transport, sustainable land use, flood risk management, nature protection, renewable energy and elements of the circular economy.[186] These measures aim to improve environmental performance and efficiency at the regional level. From the perspective of social innovation, the programme refers to community development and participation in general terms, for example through actions supporting inclusive development of municipalities and strengthening community capacity. However, it does not define concrete mechanisms that would link public participation to green transition measures.

In the Vidzeme Planning Region, the green transition is addressed mainly through the priorities related to natural capital, cultural and natural heritage and climate neutrality and adaptation. From the perspective of social innovation is the focus on public involvement in natural resource management, as the region plans to promote changes in public behaviour towards more sustainable resource use, strengthen the role of society in conservation and support citizen-science approaches.[187] It also includes capacity-building for municipal staff to improve public engagement. These measures suggest an effort to involve society more actively in environmental governance.

The Norwegian regions provide some of the clearest examples of green social innovation, particularly where co-creation, dialogue and knowledge-sharing networks are explicitly linked to climate challenges. In Trøndelag, the Trøndelag **sustainability network** functions as a platform for 30 municipalities to exchange knowledge and best practices, addressing challenges that cannot be solved individually. This network creates new horizontal relationships between municipalities and supports collective problem-solving. The **Green Industrial Lift Trøndelag** project further introduces so-called *social missions* focused on circular industry, infrastructure

[184] Regional Council of North Ostrobothnia. (2022). North Ostrobothnia regional programme 2025. https://www.pohjois-pohjanmaa.fi/kehittaminen/mako/mako2025/.
[185] Kurzeme Planning Region. (2020). Development programme of the Kurzeme Planning Region for 2021–2027. https://kurzemesregions.lv/darbibas-nozares/attistibas-planosana/regiona-planosanas-dokumenti/kurzeme-2021-2027/.
[186] Riga Planning Region. (2023). Development programme of the Riga Planning Region for 2021–2027: Strategic part. https://rpr.gov.lv/wp-content/uploads/2023/04/RPR-AP_2027_Strategiska-dala.pdf.
[187] Vidzeme Planning Region. (2022). Development programme of the Vidzeme Planning Region for 2022–2027. https://www.vidzeme.lv/wp-content/uploads/2024/11/VPR_AP_2022-2027_2.1-1.pdf.

development and competence building, which require coordinated action across sectors.[188] Additionally, the emphasis on "trust-based dialogue" in managing conflicts between renewable energy development and cultural interests reflects an attempt to create new forms of interaction between stakeholders. Moreover, requirements for climate considerations in public procurement also aim to mobilise broader societal change.

In Vestland, the regional plan recognises that sustainability challenges require long-term, structured cooperation beyond traditional sectoral coordination. It explicitly calls for formalised cooperation structures and defines co-creation as a method where citizens, businesses, public institutions and voluntary organisations jointly develop solutions.[189] The focus on nature-based solutions that provide both environmental and social benefits further links climate action with community well-being. In the Oslo region, green social innovation appears in neighbourhood-level initiatives and pilot programmes, where co-creation, participatory governance and user-centred experimentation are used to implement climate and energy policies. These include open consultations and involvement of civil society actors in designing solutions.[190] However, the integration of social participation into formal planning remains partial, particularly in land-use and transport planning.

The Polish examples provide practice-oriented illustrations of social innovation in green transition. In Lesser Poland, an example of social innovation in the green transition is the regional platform on circular economy, which focuses on reducing waste, reusing materials and extending the life cycle of products. What makes it relevant from a social-innovation perspective is that it does not focus only on environmental outcomes, but also on creating new forms of interaction between public authorities, businesses and residents. It provides information, tools and examples of good practices, while also supporting initiatives such as competitions, educational activities and funding opportunities for environmentally friendly projects.[191]

In Pomeranian, the **Archipelago of Energy Islands** project promotes community energy systems, including energy clusters and cooperatives. This creates new relationships between producers and consumers and fosters local energy self-sufficiency.[192] The initiative also supports cooperation between local governments and partners in renewable energy investments, linking technological change with community-based governance. In Greater Poland, the **Ecosystem for Climate Neutrality** project develops innovation ecosystems through collaboration between businesses, research institutions, NGOs and public administration, particularly in areas such as hydrogen development.[193] The **Greater Poland Climate Talks** further illustrate social innovation

[188] Trøndelag County Council. (2026). Industry. https://www.trondelagfylke.no/vare-tjenester/naring-og-innovasjon/Energi-industri-og-mineraler/industri/.
[189] Vestland County Council. (2024). Development plan for Vestland 2024–2028. https://www.vestlandfylke.no/planlegging/utviklingsplanen/.
[190] City of Oslo. (2021). Climate strategy for Oslo towards 2030. https://www.klimaoslo.no/rapport/klimastrategi-for-oslo-mot-2030/.
[191] Lesser Poland Region. (2026). Circular economy. https://goz.malopolska.pl/.
[192] Pomorskie Voivodeship. (2026). Green energy. https://gospodarka.pomorskie.eu/zielona-energia/.
[193] Wielkopolskie Forum Inteligentnych Specjalizacji. (2026). We are implementing the project "Wielkopolska smart specialisations: an ecosystem for climate neutrality." https://wielkopolskieforumis.pl/realizujemy-projekt-wielkopolskie-inteligentne-specjalizacje-ekosystem-na-rzecz-neutralnosci-klimatycznej/.

through stakeholder dialogue and network-building, bringing together actors from multiple sectors to address climate challenges collectively.[194]

Social innovations in twin transition

Twin transition social innovations are in this policy report understood as initiatives that simultaneously integrate digital and green transitions while creating new social interactions and relationships. In most cases, digital and green dimensions are present, but their integration into socially innovative practices remains limited or implicit, often framed through technical, infrastructural, or economic lenses rather than through explicitly social or participatory mechanisms.

In Finland, the twin transition is systematically embedded within regional innovation ecosystems and governance frameworks. In the Helsinki-Uusimaa region, digital tools are explicitly linked to climate objectives, particularly in smart mobility systems and energy monitoring. Digital governance platforms are presented as enabling instruments for achieving carbon neutrality, thereby integrating environmental and technological transformation within coordinated metropolitan governance.[195] This reflects a model where digitalisation supports environmental goals through institutionalised cooperation, creating new forms of interaction between municipalities, firms and research institutions.

Similarly, in Southern Ostrobothnia, digitalisation is combined with bioeconomy strategies and sustainable agriculture. Digital tools support environmentally sustainable production and rural resilience, integrating green and digital agendas within local development networks.[196] In Southwest Finland, **Industry 4.0 approaches** are connected with maritime decarbonisation and circular economy objectives,[197] while Northern Ostrobothnia integrates renewable energy development with digital competence and technological innovation.[198] Across all Finnish regions, the twin transition is characterised by strong overlaps between digital and green strategies, supported by structured cooperation platforms. These platforms link public authorities, businesses and research institutions and serve as the institutional backbone for social innovation, even if citizen-level participation is less visible.

In Latvia, the Kurzeme Planning Region has also elements of a twin transition, particularly through the use of digital tools supporting environmental objectives. For instance, by focus on the establishment of a monitoring system for assessing climate change impacts and risks or linking energy efficiency improvements in municipal buildings with smart management solutions or

[194] Greater Poland Voivodeship. (2025). Wielkopolska climate talks. https://www.umww.pl/wielkopolskie-rozmowy-o-klimacie-1.
[195] Helsinki-Uusimaa Regional Council. (2026). Helsinki-Uusimaa regional programme. https://uudenmaanliitto.fi/en/development-and-planning/helsinki-uusimaa-regional-programme/.
[196] Regional Council of South Ostrobothnia. (2025). Regional strategy 2050. https://epliitto.fi/aluekehitys/maakuntasuunnitelma-ja-ohjelma/.
[197] Regional Council of Southwest Finland. (2022). Regional programme and partnership work annual review 2022. https://varsinais-suomi.fi/en/liitto/organisaatio/aineistopankki/regional-programme-and-partnership-work-annual-review-2022/.
[198] Regional Council of North Ostrobothnia. (2022). North Ostrobothnia regional programme 2025. https://www.pohjois-pohjanmaa.fi/kehittaminen/mako/mako2025/.

promoting sustainable multimodal mobility supported by innovative (including digital) solutions.[199] These initiatives indicate a functional integration of digital technologies into environmental management, such as monitoring systems and smart infrastructure. However, the social dimension remains limited: public involvement is not strongly embedded and the initiatives are primarily technical. Thus, while Kurzeme reflects a technologically driven twin transition, it only partially meets the definition of social innovation.

In contrast, the Riga Planning Region presents digital and green transitions as largely separate policy domains. Digitalisation is addressed under priorities related to education, innovation and ICT use, while environmental objectives are covered under spatial planning, climate resilience and energy efficiency priorities.[200] Although regional priority Mobility and logistics combines ICT use with climate-neutral transport, this integration remains technical and infrastructural, without creating new social practices or interaction patterns. The programme does not introduce mechanisms for a true twin transition, nor does it embed socially innovative approaches.

The Vidzeme Planning Region offers a more integrated approach, as the programme explicitly states that all priorities are implemented through cooperation, climate adaptation and digital transformation, indicating a strategic commitment to integration.[201] Several actions combine digital and green objectives. For example, smart procurement (digital optimisation) with green public procurement, thereby connecting technological and environmental goals within governance processes. Another example is the industrial transformation that combines digitalisation with the development of green industrial territories, while mobility-related actions integrate environmentally friendly transport with ICT-based planning tools. These examples suggest a structural alignment of digital and green policies, particularly in governance and industrial transformation. However, the social dimension such as citizen co-creation or community-driven innovation is not explicitly present.

In Norway, the concept of twin transition is rarely explicitly mentioned, but its logic is implicitly present in regional planning. In Vestland, the planning strategy emphasises the complexity of sustainability challenges and the need for co-creation as a response to interdependent digital and environmental issues. The document recognises that actions in one domain may negatively affect another, reflecting an awareness of the need for integrated approaches.[202] Social innovation is framed through long-term cooperation structures and cross-sectoral collaboration, although these are still evolving. In Trøndelag, initiatives such as sustainability networks and circular industry projects indicate attempts to combine environmental and technological transformation. The emphasis on cooperation, knowledge sharing and capacity building suggests that social innovation lies in the creation of collaborative networks that address complex sustainability challenges.[203]

[199] Kurzeme Planning Region. (2020). Development programme of the Kurzeme Planning Region for 2021–2027. https://kurzemesregions.lv/darbibas-nozares/attistibas-planosana/regiona-planosanas-dokumenti/kurzeme-2021-2027/.
[200] Riga Planning Region. (2023). Development programme of the Riga Planning Region for 2021–2027: Strategic part. https://rpr.gov.lv/wp-content/uploads/2023/04/RPR-AP_2027_Strategiska-dala.pdf.
[201] Vidzeme Planning Region. (2022). Development programme of the Vidzeme Planning Region for 2022–2027. https://www.vidzeme.lv/wp-content/uploads/2024/11/VPR_AP_2022-2027_2.1-1.pdf.
[202] Vestland County Council. (2024). Development plan for Vestland 2024–2028. https://www.vestlandfylke.no/planlegging/utviklingsplanen/.
[203] Trøndelag County Council. (2026). Sustainability network in Trøndelag. https://www.trondelagfylke.no/vare-tjenester/plan-og-areal/prosjekter-og-satsinger/barekraftsnettverket-i-trondelag/.

The Oslo region provides the clearest example of an emerging twin transition approach in Norway. Planning documents refer to smart, energy-efficient neighbourhoods and mobility systems, where digital tools (data-driven energy management) support environmental objectives such as zero-emission targets. These initiatives are implemented through co-creation, participatory governance and stakeholder engagement, positioning social innovation as the "human and institutional side" of the twin transition.[204] However, the integration remains partial and the concept is often used more as a guiding principle derived from EU and national frameworks than as a fully operationalised regional strategy.

In Poland, the twin transition is primarily articulated through regional innovation and sectoral strategies, with several concrete examples of integration. In Lesser Poland, the Regional Innovation Strategy provides a structured framework linking digitalisation with green transition. The strategy promotes a data-based, climate-neutral and circular economy and supports cooperation between businesses, research institutions and public administration. It emphasises digital competences, ICT development and innovation ecosystems, while also connecting these to sustainability goals such as clean energy and circular economy.[205]

In the Pomeranian Region the **Regional Strategic Program** includes the development of smart grids, integration of renewable energy systems with digital management tools and the use of data for monitoring and evaluating energy investments.[206] Digital technologies are also used in air quality monitoring and environmental management. These initiatives demonstrate a practical integration of digital and green systems, particularly in infrastructure and energy governance. However, social innovation is mainly indirect, emerging through improved coordination and data-driven decision-making rather than through participatory or community-driven processes. In Greater Poland, the **Regional Innovation Strategy 2030** explicitly links the development of a zero-emission economy with digitalisation and ICT technologies. The strategy highlights the role of digital tools in supporting energy transition, circular economy and regional competitiveness.[207]

5.3. Interreg and International Cooperation

This section examines the Interreg projects in order to identify broader patterns of regional cooperation in relation to the green, digital and twin transitions. Interreg projects provide a useful source for this analysis because they reflect concrete forms of cross-border and transnational collaboration between regions in Europe.[208] At the same time, it is important to note that Interreg is not the only form of international cooperation in which regions participate, as regions are also involved in other EU programmes, bilateral initiatives and international networks. However, Interreg is particularly suitable for this analysis because it is explicitly designed to support territorial cooperation, directly involves regional and local actors and provides comparable and

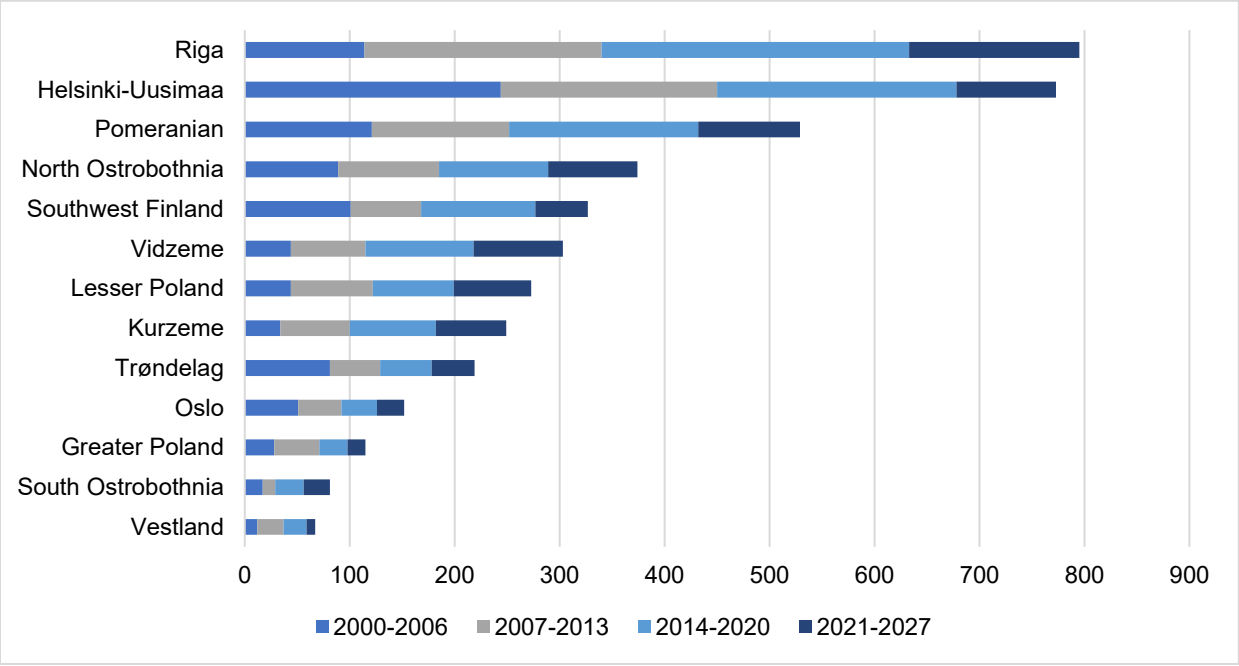
[204] Oslo and Akershus. (2026). Regional plan for competence, restructuring and value creation. https://www.oaplan.no/#internasjonal.
[205] Lesser Poland Region. (2021). Regional innovation strategy of the Małopolska Region 2030. https://innowacyjna.malopolska.pl/uploads/pdf/Regional-Innovation-Strategy-of-the-Malopolska-Region-2030.pdf.
[206] Pomorskie Voivodeship. (2026). Regional strategic programme for environmental and energy security. https://strategia2030.pomorskie.eu/regionalne-programy-strategiczne/rps-w-zakresie-bezpieczenstwa-srodowiskowego-i-energetycznego/.
[207] Greater Poland Voivodeship. (2020). Regional innovation strategy for Wielkopolska 2030. https://www.umww.pl/artykuly/54802/pliki/20210104081530_ris2030.pdf.
[208] Interreg. (2026). Home page. https://interreg.eu/.

structured project data across countries. Data were collected from the Interreg projects database in January 2026.[209] By looking at the thematic focus of projects, their distribution across programming periods and their connection to green and digital priorities, the analysis helps to show how regional cooperation has evolved over time. The following overview, therefore, presents the main quantitative trends in the project sample, while the thematic interpretation of individual areas is developed in the subsequent qualitative analysis.

All projects in the Interreg database are implemented at the subnational or local level, which makes them a useful source for understanding regional dynamics. However, this does not mean that regional governments are always directly involved. Many projects are carried out by a mix of stakeholders, including municipalities, universities, NGOs, businesses and sectoral agencies reflecting the multi-actor nature of regional development and cooperation. Even when regional authorities are not always directly involved, these initiatives still provide valuable insights into regional priorities, capacities and challenges. They show how different actors within regions contribute to the green, digital and twin transitions in practice.

Overall, the dataset includes 13 regions that were involved in 4,257 projects (Figure 1). This indicates a high level of participation across all selected regions over time, although the intensity of involvement differs considerably from one region to another. In terms of time, project activity is spread across four programming periods: 2000-2006, 2007-2013, 2014-2020 and 2021-2027. The highest overall number of projects appears in 2014-2020, suggesting that this was the most intensive period of project involvement in the dataset. However, the current programming period is still ongoing.

Figure 1. Participation in Interreg projects by region



Source: Authors; N = 4,257

[209] Keep.eu. (2026). Interreg and cross-border project database. https://keep.eu/.

The most active region is Riga (Latvia), with 795 projects, followed very closely by Helsinki-Uusimaa (Finland) with 773 projects. These two regions clearly stand out from the rest of the sample and together account for more than one third of all recorded projects. The next most involved region is Pomeranian (Poland) with 529 projects, while North Ostrobothnia (Finland) also shows a strong level of participation with 374 projects. Other regions with substantial engagement include Southwest Finland (327), Vidzeme (303), Lesser Poland (273) and Kurzeme (249). At the lower end of the table, the smallest numbers of projects are recorded in Vestland (67) and South Ostrobothnia (81), followed by Greater Poland (115) and Oslo (152).

Table 9 presents the number of projects in which each region was involved across different thematic categories. It is important to note that the theme recorded in the table refers only to the first main theme assigned to each project. In the Interreg database, each project can be associated with up to three main themes, but this table includes only the first main theme listed for each project. The results therefore show the primary thematic orientation of projects rather than their full thematic complexity. In addition, the table includes only a selected set of themes. Out of a total of 41 identified themes in the dataset, we focus on 16 themes that each have more than 100 projects overall. This selection allows for a clearer comparison across regions by concentrating on the most relevant and representative thematic areas, while less frequent themes are not included in the table.

Looking at the overall distribution, the strongest concentration of projects is found in a relatively small group of themes, while several other themes appear only rarely. The theme with the highest number of projects is **Institutional cooperation and cooperation networks**, with 497 projects in total. This suggests that cooperation-building and network creation were the most common forms of activity across the regions. Particularly strong involvement in this theme can be seen in regions such as Riga and Helsinki-Uusimaa, which are also among the most active regions in the dataset overall.

Other highly represented themes are **Cultural heritage and arts** (310 projects), **Clustering and economic cooperation** (304), **ICT and digital society** (279), **Waste and pollution** (265) and **Tourism** (259). For example, Riga, Pomeranian and Helsinki-Uusimaa appear frequently in projects linked to cultural cooperation, innovation and digitalisation. North Ostrobothnia and Southwest Finland also show visible participation in economically oriented and digital themes, while regions such as Vidzeme and Kurzeme are active in tourism and environment related projects. In addition, **Education and training** (204) and **Health and social services** (202) also stand above the threshold of 200 projects, again with participation spread across several of the more active regions.

At the other end of the spectrum, a number of themes appear only marginally, however, these are not included in the table. The least represented theme is **Scientific cooperation**, with only 2 projects in total. Very low numbers are also recorded for **Soil and air quality** (9 projects), **Logistics and freight transport** (14) and **Urban development** (15). These themes involve only limited regional participation compared with the dominant categories. At the same time, it is important to note that some of these topics are present more widely across the dataset but are often embedded within broader thematic categories rather than identified as primary themes. For example, logistics frequently appear within projects classified under **Transport and mobility**, which means their actual presence is higher than the numbers for standalone categories suggest.

Table 9. Main themes of the Interreg projects in the regions

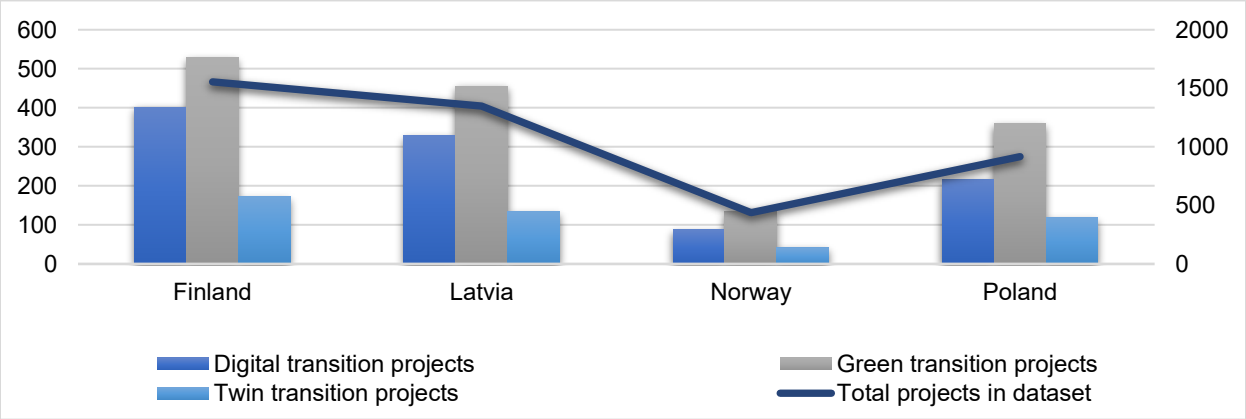
	Finland				Latvia			Norway			Poland		
	SO	HU	NO	SF	KU	RI	VI	OS	TR	VE	GP	LP	PO
Clustering and economic cooperation	7	59	40	31	13	58	13	13	16	4	8	12	30
Coastal management and maritime issues	0	42	3	15	4	29	2	4	3	4	0	1	30
Cultural heritage and arts	3	41	11	27	19	41	37	7	31	7	1	42	43
Education and training	3	35	17	11	21	46	16	11	19	2	3	9	11
Health and social services	9	32	25	21	17	36	11	10	9	4	9	7	12
ICT and digital society	11	48	21	21	20	50	21	9	17	8	12	12	29
Infrastructure	3	40	20	6	8	16	7	8	5	1	2	13	14
Institutional cooperation and networks	9	87	36	43	36	95	28	18	25	5	17	21	77
Knowledge and technology transfer	1	27	27	9	8	26	10	4	2	0	2	7	22
New products and services	3	20	23	11	10	27	8	2	5	4	4	4	5
Renewable energy	6	12	10	2	3	25	6	4	2	3	2	9	16
SME and entrepre-neurship	2	17	11	7	7	22	9	7	11	3	6	2	10
Sustainable management of natural resources	0	32	9	13	5	24	5	6	5	3	4	11	14
Tourism	2	35	22	13	20	38	40	5	15	2	0	31	36
Transport and mobility	1	15	3	10	4	13	4	9	0	2	8	9	24
Waste and pollution	1	55	23	30	8	59	15	3	7	2	7	13	42

Source: Authors; N = 3,318

Figure 2 compares the involvement of four countries in projects related to the green transition, digital transition and twin transition. All 4,257 projects in the dataset were coded into these three categories (for more detailed information on the coding approach see the Methodology section).In the figure, the left axis shows the number of green, digital and twin transition projects, while the right axis shows the total number of projects in the dataset for each country.

Overall, Finland has the highest total number of projects, with 1,555 projects, followed by Latvia with 1,347, Poland with 917 and Norway with 438. The same general ranking can also be seen in the transition-related categories. Finland records the highest number of green projects (529) and digital projects (402), while Latvia follows with 455 green and 328 digital projects. Poland is also strongly represented, with 360 green and 217 digital projects. Norway has the lowest numbers in all categories, with 135 green and 88 digital projects. The number of twin transition projects is lower in all countries than the number of green or digital projects. This is because twin projects combine both dimensions at the same time: they are projects that are both green and digital simultaneously, rather than belonging to only one of these categories. Finland again has the highest number of such projects, with 172 twin projects, followed by Latvia with 134, Poland with 118 and Norway with 41.

Figure 2. Participation in Interreg projects related to green, digital and twin transition by country



Source: Authors; N = 4,257

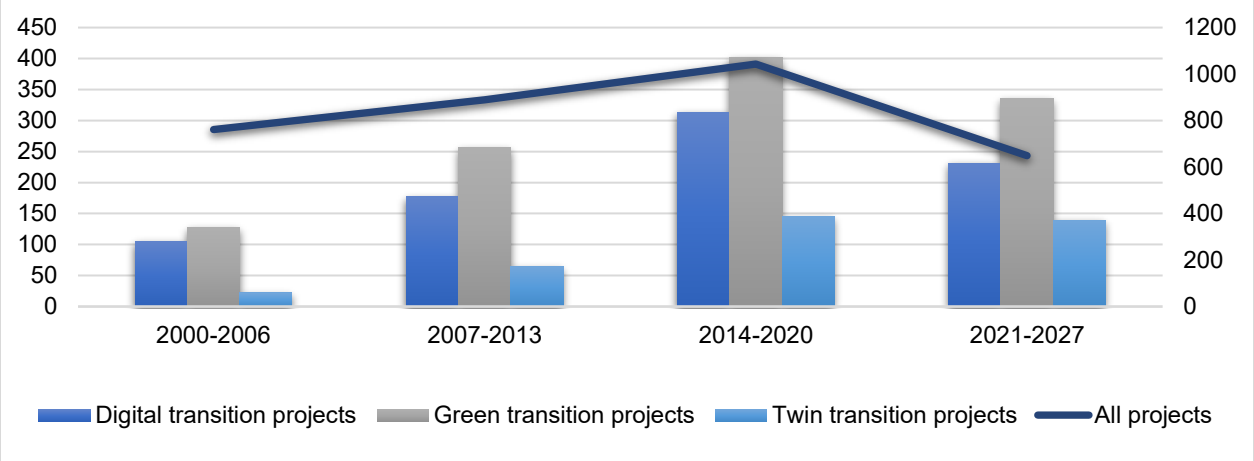
In the next step, duplicates were removed from the original dataset in order to shift the focus from regional participation to the projects themselves. The initial dataset contained 4,257 entries, but these entries did not represent 4,257 unique projects. This is because the data collection was conducted by region rather than by project. As a result, whenever a single project involved more than one of the selected regions, that same project appeared multiple times in the dataset, once for each participating region. So, the dataset captured regional involvement in projects, not the unique projects themselves. A good example is the project ActNow (Action for Energy Efficiency in Baltic Cities) from the 2014-2020 programming period. This single project appeared repeatedly in the dataset because it involved several regions included in the analysis, namely Vidzeme, Riga, North Ostrobothnia and Pomeranian.

After deleting all duplicities, the dataset was reduced from 4,257 entries to 3,342 unique projects. This means that 1,015 entries in the original dataset were duplicates caused by multi-regional participation in the same project. The deduplicated version of the dataset provides a more accurate basis for analysing projects as individual units, especially when examining thematic

orientation, programming periods, or the overall distribution of green, digital and twin transition activities. At the same time, the original dataset remains useful for understanding the intensity of participation of individual regions, since it reflects how often each region appeared in the project sample.

Figure 3 compares the number of projects across the four programming periods and shows how many of them were related to the green transition, digital transition and twin transition. In the figure, the left axis presents the number of green, digital and twin transition projects, while the right axis shows the total number of projects in each period. The figure indicates that transition-oriented projects became more prominent over time. In terms of green transition projects, the highest number is found in 2014-2020 with 401 projects, followed by 2021-2027 with 335, 2007-2013 with 256 and 2000-2006 with 127. A similar pattern appears for digital transition projects: 2014-2020 again records the highest number (313), followed by 2021-2027 (231), 2007-2013 (177) and 2000-2006 with 105 projects.

Figure 3. Interreg projects in digital, green and twin transition by period



Source: Authors; N = 3,342

The number of twin transition projects is lower in every period, which is expected because twin projects are those that are both green and digital at the same time. The highest number of twin projects is recorded in 2014-2020 (145), followed very closely by 2021-2027 (139). Although the most recent period has the lowest total number of projects, it already shows a strong concentration of transition-related activities. Earlier periods show substantially lower numbers, with 64 twin projects in 2007-2013 and only 22 in 2000-2006.

There are two projects in the dataset that directly address the twin transition. The Twinnovation (Twin Transition as a Source of Innovation for Estonian and Latvian SMEs) project involving 13 partners including Kurzeme, Riga and Vidzeme focuses on supporting SMEs in adopting both green and digital solutions.[210] Its main aim is to help businesses understand how these transitions affect their operations and how they can use them for growth. The project combines training with pilot activities, allowing SMEs to test new solutions in their products, services, or processes. A second project is TWINUP4CE (Improving workforce skills for the twin transition in peripheral and rural Central Europe) involving five partners including Lesser Poland, which focuses on workforce

[210] EST-LAT Programme. (2023). Twinnovation. https://estlat.eu/en/project-TWINNOVATION.

skills for the twin transition.[211] The project addresses the lack of training and upskilling opportunities in peripheral regions. Its main innovation is the creation of Regional Upskilling Management Alliances, which bring together public authorities, employers, training providers and workers.

In total, 826 projects focus on the digital transition. These projects aim to improve public services, support innovation, develop data-driven solutions, provide smart services in urban development and transport and build digital skills among citizens and residents. For example, INNOCARE (Innovative solutions in care of elderly citizens living at home)[212] and VIRTUE (Virtual Elderly Care Services on the Baltic Islands)[213] develop digital services for social care and inclusion, while 3I solutions for PS (Enabling better public services in BSR with immersive, intelligent and innovative solutions),[214] Digital Kiosks (Innovative public-private-people partnerships to implement new infrastructure)[215] or Egoprise (E-GOvernment solutions as instruments to qualify the public sector for the specific needs of small and medium sized enterPRISEs (SMEs) in the rural BSR)[216] improve public services through innovation and digital tools making the services more accessible.

Many of these projects support digital transformation in business and logistics, often by introducing new ICT tools and improving data exchange. There are several projects in healthcare services using digital tools, for example HybReDe (Effective joint hybrid e-rehabilitation solutions for BSR citizens)[217] facilitating AI based virtual assistants for public sector rehabilitation processes. Healthcare services projects also support remote healthcare systems (telemedicine) and e-health databases development and exchange, for example Cross-Border Health Innovation: Data Integration and Cooperation for Valga-Valka Region.[218] Other initiatives, such as CreaDigi&Tourism (Creativity, Digital Innovation and Cultural Tourism: Synergies, Network and Capacity Building)[219] apply digital tools in the cultural and creative sectors, increasing accessibility and cooperation between institutions. Across these projects, a common feature is the innovative use and development of digital platforms, data sharing and ICT solutions to improve efficiency, accessibility and coordination between actors.

Projects in the green transition (in total 1,119) mainly address mobility, energy, environment and resource use, including biodiversity, water management, sustainable tourism development and ecosystem protection. Many also focus on climate resilience, adaptation and also environmental education, aiming to support long-term behavioural change. An example of a large-scale green transition oriented project is BSR EAGLE (Nature Centres and Environmental Interpretation in the Baltic Sea Region), which involved 50 partners from across the Baltic Sea Region including

[211] Interreg Central Europe. (2026). TwinUp4CE: Building a stronger workforce with green and digital skills. https://www.interreg-central.eu/projects/twinup4ce/.
[212] Keep.eu. (2011). Innovative solutions in care of elderly citizens living at home. https://keep.eu/projects/5259/Innovative-solutions-in-care-EN/.
[213] Keep.eu. (2010). Virtual elderly care services on the Baltic Islands. https://keep.eu/projects/5294/Virtual-Elderly-Care-Service-EN/.
[214] Interreg Baltic Sea Region. (2023). 3I solutions for PS. https://interreg-baltic.eu/project/3i-solutions-for-ps/.
[215] Interreg North Sea. (2026). Project data. https://www.interregnorthsea.eu/project-data.
[216] Institute of Baltic Studies. (2009). Improving business oriented e-government solutions. https://www.ibs.ee/en/projects/improving-business-oriented-e-government-solutions/.
[217] Interreg Baltic Sea Region. (2025). HybReDe. https://interreg-baltic.eu/project/hybrede/.
[218] European Commission. (2021). Cross-border healthcare in the twin cities of Valga and Valka. https://futurium.ec.europa.eu/de/border-focal-point-network/good-practices/cross-border-healthcare-twin-cities-valga-and-valka.
[219] Interreg Baltic Sea Region. (2017). Creativity, digital innovation and cultural tourism: Synergies, network and capacity building. https://interreg-baltic.eu/project/creadigitourism/.

Kurzeme, Riga, Vidzeme, Helsinki-Uusimaa and Southwest Finland.[220] The project conducted during 2000-2006 period focused on strengthening environmental education, nature interpretation and public participation as part of broader efforts to support sustainable development.

Climate adaptation, sustainable tourism development and environmental education were supported especially in previous programming periods. In the current period, there is, for example, the project EnTRA (Energy Transition for Climate Neutrality in the BSR)[221], which aims to mobilize awareness and capacity building for clean energy. Blue Platform (Bioeconomy for Blue Growth in the Baltic Sea Region)[222] promotes the sustainable use of marine resources, while NonHazCity (Reducing hazardous substances in construction to safeguard the aquatic environment, protect human health and achieve more sustainable buildings)[223] focuses on reducing hazardous substances in urban environments. Many projects are related to biodiversity protection and nature restoration in cross-border areas, such as Green LUPO (Greening land-use policies by land management to protect and restore nature and biodiversity).[224]

Circular economy and waste management are becoming increasingly important for regional cooperation, as seen in projects such as Circ@Home (Resilience by circularity and sharing culture at households as a precondition for climate-neutral cities)[225], ChemClimCircle (Integrating criteria for chemicals, climate and circularity in procurement processes)[226] and Circular Ports (Deploying circular economy in port environments)[227], which promote reuse of materials, sustainable production and green public procurement.

A specific subgroup of green transition projects focuses on renewable energy and energy efficiency. Projects such as Co2mmunity (Co-producing and co-financing renewable community energy projects)[228] and Baltic Energy Areas[229] support local renewable energy solutions and community-based initiatives, while VIS NOVA (Sustainable and efficient energy for rural regions)[230] and Easy Energy (Easy energy efficiency solutions for public buildings and small companies in the BSR)[231] address energy use in buildings and energy savings. Attention is also given to new energy sources such as hydrogen, for example in the project BSR HyAirport (BSR Hydrogen Air Transport-Preparation of Baltic Sea Region Airports for Green Hydrogen)[232]. There are also projects in mobility aiming to reduce emissions from the transport sector, such as Active

[220] Baltic Sea Region. (2005). Baltic Sea Region Eagle. https://www.nynashamnsnaturskola.se/pdfHtm/bsreng.pdf.
[221] Interreg Baltic Sea Region. (2025). EnTRA. https://interreg-baltic.eu/project/entra/.
[222] Interreg Baltic Sea Region. (2018). Bioeconomy for blue growth in the Baltic Sea Region: A platform project to capitalize on the outputs of complementary transnational projects. https://interreg-baltic.eu/project/blue-platform/.
[223] Interreg Baltic Sea Region. (2023). NonHazCity 3. https://interreg-baltic.eu/project/nonhazcity-3/.
[224] Interreg Europe. (2025). Green LUPO. https://www.interregeurope.eu/green-lupo.
[225] Interreg Baltic Sea Region. (2025). Circ@Home. https://interreg-baltic.eu/project/circhome/.
[226] Stockholm Environment Institute. (2022). ChemClimCircle: Integrating criteria for chemicals, climate and circularity in procurement processes. https://www.sei.org/projects/chemclimcircle-eng/.
[227] Interreg Baltic Sea Region. (2025). Circular Ports. https://interreg-baltic.eu/project/circular-ports/.
[228] Interreg Baltic Sea Region. (2017). Co-producing and co-financing renewable community energy projects. https://interreg-baltic.eu/project/co2mmunity/.
[229] Interreg Baltic Sea Region. (2016). Baltic Energy Areas – A Planning Perspective. https://interreg-baltic.eu/project/bea-app/.
[230] Keep.eu. (2011). Sustainable and efficient Energy for Rural Regions. https://keep.eu/projects/5511/Sustainable-and-efficient-En-EN/.
[231] Interreg Baltic Sea Region. (2023). Easy Energy. https://interreg-baltic.eu/project/easy-energy/.
[232] Interreg Baltic Sea Region. (2023). BSR HyAirport: Advancing Hydrogen-Powered Aviation in the Baltic Sea Region. https://interreg-baltic.eu/project/bsr-hyairport/.

Cities (Active mobility increased for sustainable zero-carbon urban multimodality, through human-centric planning, mobility hubs and behaviour change).[233]

Innovative solutions to tackle climate change also appear in projects in the agriculture sector (TransFarm; TRANSborder cooperation for circular soil-less farming systems)[234], water management (WaterMan; Promoting water reuse in the Baltic Sea Region through capacity building at local level)[235], forestry (FORESTCARBOVISION; Empowering communities through forest carbon farming: building climate resilience and sustainable resource management)[236] and industrial processes (Ar2CorD; Low carbon concrete for Arctic climate with excellent sustainability and durability).[237]

Projects in the twin transition (370 in total) focus on the use of digital tools to support climate neutrality and/or environmental objectives or combine innovation with sustainability. Almost one third of these projects focused on transport logistics and urban mobility such as BSR Electric (Fostering e-mobility solutions in urban areas in the Baltic Sea Region)[238], HUPMOBILE (Holistic Urban and Peri-urban Mobility)[239], Cities.multimodal (Urban transport system in transition towards low carbon mobility)[240] or COMODALCE (Enhancing COordination on multiMODAL freight transport in Central Europe)[241] integrate low-emission transport with digital planning tools, data systems and coordination mechanisms.

Environmental projects such as Baltic Smart Water Hub[242] use digital platforms to improve water management, monitoring and cooperation across regions. There are also digital tools in the field of biodiversity protection (FORESTBAND; Climate smart solutions for enhanced biodiversity through increased presence of broadleaved trees in landscape)[243] and species monitoring (AquilaNorth), sustainable farming (Agronomist AI assistant; AI-powered agronomic assistant for optimizing greenhouse vegetable cultivation)[244] and early warning systems related to disaster management including climate change risks (ClimaResponse; Responsive Local Action for Climate Change Adaptation and Disaster Risk Reduction)[245].

[233] Interreg North Sea. (2023). Active Cities. https://www.interregnorthsea.eu/active-cities.
[234] Keep.eu. (2023). TRANSborder cooperation for circular soil-less FARMing systems. https://keep.eu/projects/27685/TRANSborder-cooperation-for-EN/.
[235] Interreg Baltic Sea Region. (2023). WaterMan. https://interreg-baltic.eu/project/waterman/.
[236] Interreg NPA. (2025). FORESTCARBOVISION. https://www.interreg-npa.eu/projects/forestcarbovision/.
[237] Interreg NPA. (2023). Ar2CorD: Low Carbon Concrete for Arctic Climate with Excellent Sustainability and Durability. https://www.interreg-npa.eu/projects/ar2cord/home.
[238] Interreg Baltic Sea Region. (2017). BSR electric: Fostering e-mobility solutions in urban areas in the Baltic Sea Region. https://interreg-baltic.eu/project/bsr-electric/.
[239] Interreg Baltic Sea Region. (2019). Holistic Urban and Peri-urban Mobility. https://interreg-baltic.eu/project/hupmobile/.
[240] Keep.eu. (2017). Urban transport system in transition towards low carbon mobility. https://keep.eu/projects/21644/Cities-multimodal-urban-tra-EN/.
[241] Keep.eu. (2019). Enhancing COordination on multiMODAL freight transport in CE. https://keep.eu/projects/21493/Enhancing-COordination-on-m-EN/.
[242] Interreg Baltic Sea Region. (2018). Platform on Integrated Water Cooperation. https://interreg-baltic.eu/project/bsr-water/.
[243] Latvian State Forest Research Institute Silava. (2024). Climate smart solutions for enhanced biodiversity through increased presence of broadleaved trees in landscape. https://www.silava.lv/en/research/projects/ForestBand.
[244] Agrihorts. (2025). AI-powered agronomic assistant for optimizing greenhouse vegetable cultivation. https://agrihorts.lbtu.lv/en/ai-powered-agronomic-assistant-optimizing-greenhouse-vegetable-cultivation.
[245] Interreg Baltic Sea Region. (2025). ClimaResponse. https://interreg-baltic.eu/project/climaresponse/.

Other projects related to the twin transition focus on improving energy systems through a mix of digital and green solutions. COPOWER (COmmunity based virtual POWER plant)[246] develops community-based virtual power plants to support local renewable energy use and reduce fossil fuel dependence. ECOHOUSING (Energy Efficient and Ecological Housing)[247] promotes energy-efficient housing and bioenergy use through research, training and digital advisory services. Energy Equilibrium (Carbon driven energy equilibrium at the municipal scale)[248] introduces a platform to help municipalities plan renewable energy use and storage. GreenITNet[249] supports policies for energy-efficient ICT and its role in reducing emissions. LUCIA (Lighting the Baltic Sea Region - Cities accelerate the deployment of sustainable and smart urban lighting solutions)[250] demonstrates energy-efficient urban lighting.

Innovation-oriented projects support businesses and regions in adopting digital technologies while also moving towards circular economy and sustainable production. The BALTIC2HAND (As good as new: Enhancing the behavioural and business change of the second-hand textile industry in the Central Baltic region)[251] project focuses on improving the second-hand textile sector in the Central Baltic region and reducing textile waste by promoting reuse and more circular business models. Project SMART CIRCUIT[252] targets manufacturing and addresses high resource use and waste by promoting circular economy solutions, while at the same time supporting digital transformation. Its main approach is to build a network of Digital Innovation Hubs that help companies adopt digital and technology-driven circular business models.

All these projects show that regional cooperation is not only about implementing specific measures, but also about sharing knowledge, testing solutions and building long-term partnerships. This highlights the importance of cross-border and transnational cooperation in supporting both green and digital transitions at the regional level. At the same time, it shows that Interreg programme has long been an important tool for the twin transition, even before this concept was explicitly framed in policy debates. Through the implementation of projects in areas such as energy, climate adaptation, circular economy, mobility, digital public services and smart solutions, much has already been achieved in both green and digital policy fields. These projects have generated new ideas, practical innovations and forms of cooperation that help regions respond to the twin transition challenges.

[246] Interreg NPA. (2023). COPOWER-Community-based Virtual Power Plant. https://www.interreg-npa.eu/projects/copower/home/.
[247] Central Baltic. (2011). ECOHOUSING. https://projects.centralbaltic.eu/project/453-ecohousing.
[248] Interreg Baltic Sea Region. (2023). Energy Equilibrium. https://interreg-baltic.eu/project/energy-equilibrium/.
[249] Keep.eu. (2012). Green IT Network Europe. https://keep.eu/projects/5391/Green-IT-Network-Europe-EN/.
[250] Interreg Baltic Sea Region. (2019). Lighting the Baltic Sea Region: Cities accelerate the deployment of sustainable and smart urban lighting solutions. https://interreg-baltic.eu/project/lucia/.
[251] Baltic2Hand. (2023). Baltic2Hand: Enhancing the behavioral and business change of the second-hand textile industry in the Central Baltic region. https://balticsecondhand.eu/.
[252] Interreg Central Europe. (2023). Smart Circuit: Cleaning up the manufacturing industry. https://www.interreg-central.eu/projects/smart-circuit/.

6. Conclusions

This policy report examined regional governance of the twin transition in Finland, Latvia, Norway and Poland through a comparative analysis of national legal and strategic frameworks, regional planning documents, organisational structures, social innovations and Interreg cooperation. Using a multi-level governance perspective, it asked how regions are positioned within the green and digital transitions and to what extent they are able to translate national and EU priorities into territorial strategies, institutions and practical action.

The first main conclusion is that regions are influential actors in multi-level governance of the twin transition, but they are not equally empowered and they cannot be understood as agents of change in the same way across all national contexts.[253] All four countries include the regional level in governance related to green and digital policies, yet the institutional status of regions differs considerably. Latvia relies on planning regions with mainly coordinating functions, Finland on Regional Councils built on municipal cooperation, Norway on county municipalities with broader public responsibilities and Poland on voivodeships with a strong self-governing role. Their capacities are therefore defined by a combination of formal competences, institutional autonomy, access to funding, administrative resources, coordination capacity and their ability to connect European, national and local levels of governance.

The second conclusion is that national frameworks include regions, but responsibilities remain fragmented. Green transition roles are generally more visible in planning, environmental, energy, transport and adaptation policies, while digital transition roles are more often linked to public administration, connectivity, data governance and cybersecurity. In none of the analysed countries is the twin transition clearly established as a distinct regional competence. In practice, it appears mainly through the interaction of green and digital agendas. This means that regional coordination capacity is often just as important as formal legal competence. The twin transition is therefore less a separate policy field than a governance challenge that requires regions to align policies, institutions and actors that are usually organised separately.

The third conclusion is that regions usually translate the twin transition through existing planning and development instruments rather than through dedicated strategies. Regional development strategies, smart specialisation strategies, spatial planning documents and sectoral plans remain the main vehicles through which green and digital priorities are combined. At the same time, the report shows that organisational structures are rarely integrated around the twin transition. Climate, digitalisation and innovation are often handled by separate departments, agencies or project-based structures and no analysed region has a dedicated twin transition unit. This makes cooperation across portfolios and across sectors crucial and suggests that regional influence often depends less on formal institutional redesign than on the ability to work across existing administrative sectors.

The fourth conclusion is that regions do create opportunities for non-state actors, but these opportunities vary in form and depth. The analysis of social innovation shows that regions rarely define social innovation explicitly, but many initiatives rely on participation, co-creation, partnerships and structured interaction between public authorities, businesses, research

[253] See also: Kleinberga, V., Livdanska, B. and Bukovskis, K. (2026). Report on the gaps in the MLG framework concerning twin transitions. DeCrises project deliverable D1.2.

institutions and civil society. This indicates that regional governance can open important spaces for non-state involvement in the twin transition. However, the extent to which this involvement is substantive differs. In some cases, non-state actors appear mainly as consultees, project partners or recipients of support and in others, they are more clearly involved in co-design, experimentation and implementation.

Similarly, the analysis of Interreg projects demonstrates that regions have long been active in cross-border and transnational cooperation related to green, digital and twin transition priorities. In this respect, the role of the EU is particularly important. Through Interreg, the EU has not only provided financial support for regional projects, but has also created an institutional framework that encourages cooperation, policy learning, knowledge exchange and joint experimentation across borders. Interreg has therefore been an important European tool through which regions have been able to develop new ideas, test innovative solutions and build durable partnerships in both green and digital policies.

At the same time, the analysis also shows that these four countries and their regions have already done a considerable amount in the areas of green and digital transition. The report identifies a broad range of strategic documents, planning practices, institutional arrangements and innovative projects that demonstrate active regional engagement rather than only formal policy commitments. This is important not only for understanding the current state of the twin transition in the Baltic Sea Region, but also because it suggests that these countries may offer useful inspiration for others. In particular, their experience with strategic planning, territorial coordination, participatory approaches and innovative cross-border projects can serve as important examples and best practices to be shared with other countries.

The report shows that regions are essential to the twin transition, but their role is best understood not simply in terms of whether they possess formal powers, but in terms of how they operate within multi-level governance.[254] Regions are influential where they can connect scales of governance, coordinate fragmented policy fields, mobilise resources and create arenas for cooperation among state and non-state actors. They are therefore not automatically agents of change, but they can become such where institutional capacity, political support, financial support and collaborative arrangements come together. From this perspective, the twin transition is not only a technological or environmental transformation, but mainly a question of governance: who is able to coordinate change, how different actors are included and whether regional arenas can turn broad transition goals into territorially embedded and socially legitimate action.

However, their effectiveness depends on several conditions: clearer regional mandates, stronger institutional coordination, better links between climate, digitalisation and innovation policies and continued financial support for participatory and cross-sector cooperation. Strengthening these dimensions would improve the capacity of regions to act not only as stakeholders in the transition, but as capable governance arenas for a more equitable and socially embedded twin transition.

[254] See also: Kleinberga, V. and Livdanska, B. (2026). Report on appropriated MLG framework for climate and digital transitions. DeCrises project deliverable D1.3.