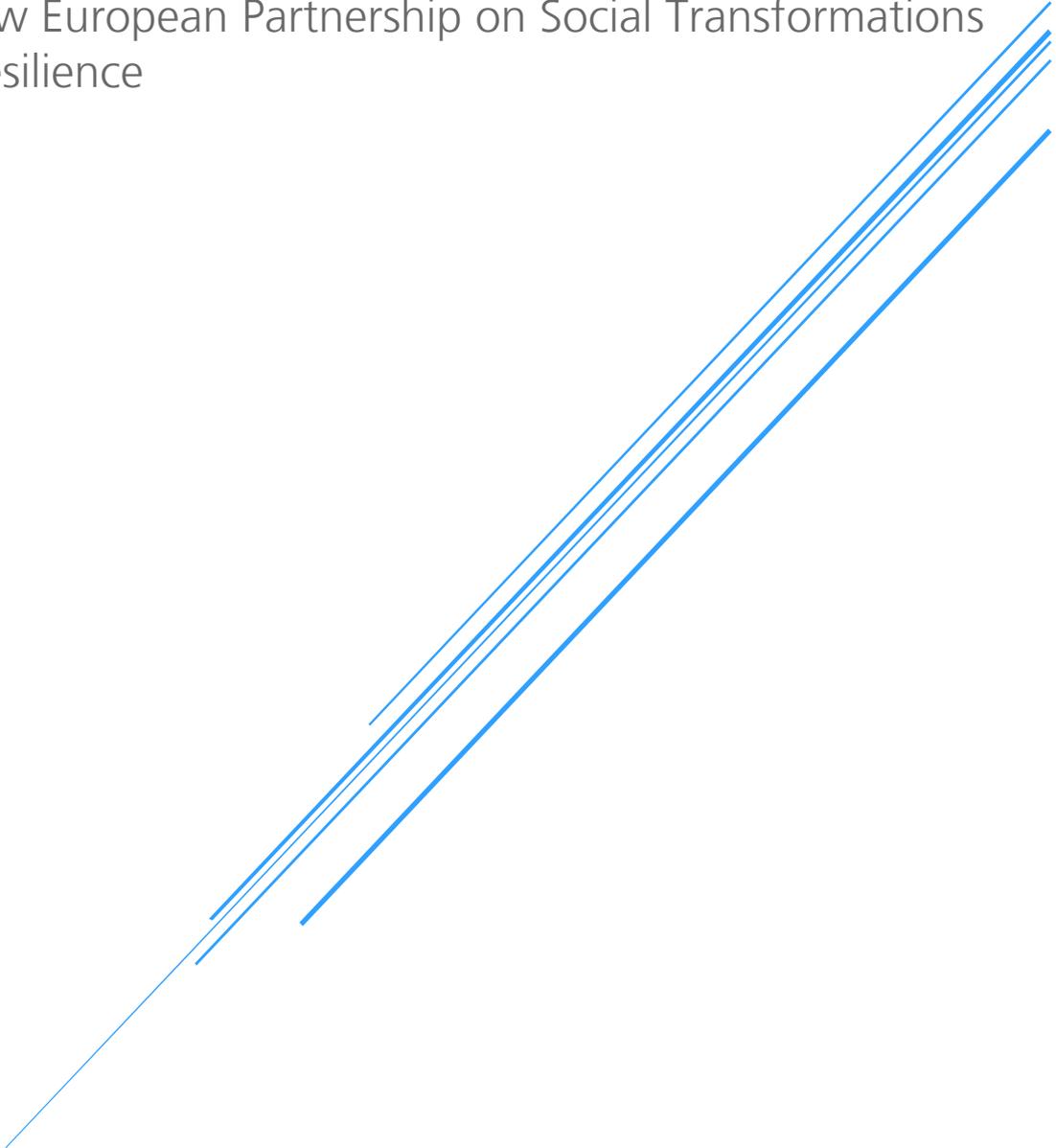


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# PRELIMINARY DRAFT STRATEGIC RESEARCH & INNO- VATION AGENDA FOR THE STR- PARTNERSHIP

Towards a Strategic Research & Innovation Agenda for  
the new European Partnership on Social Transformations  
and Resilience



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## IMPRINT

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## Disclaimer:

The research priorities presented in Chapter 7 are the result of a structured, multi-stage strategic foresight process. This process drew on evidence and expert deliberations, which were generated through interviews, online surveys, four thematic workshops, and the final backcasting workshop. These priorities are also informed by the four scoping studies mapping the state of the art in the respective thematic areas (see Chapter 4.2).

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## Content

1.	Introduction & Strategic Context.....	4
1.1	Motivation: Addressing Europe’s Social Transformations and Systemic Pressures .....	4
1.2	Purpose and Ambition: What the Partnership Aims to Achieve .....	5
1.3	Strategic Context: Alignment with EU Priorities and Policy Frameworks.....	6
1.4	Added Value: What the Partnership Brings That Does Not Yet Exist .....	6
2.	The Partnership’s Vision & Mission .....	7
2.1	Common Vision and Mission of the Social Transformation and Resilience Partnership .....	7
2.2	The Partnership’s Operational Objectives .....	8
3.1	Expertise and Methods: The Research Approaches Underpinning the SRIA.....	8
3.2	How Research contributes to Achieving the Partnership’s Aims.....	9
3.3	Guiding Principles .....	10
4.	Strategic Foresight-Based Development of the SRIA.....	11
4.1	Foresight Process: How Evidence Was Generated.....	11
4.1	From Scenarios to Transformation Needs: The backcasting Process .....	12
4.2	Role of Scoping Studies Mapping the State of the Art .....	13
4.3	Process Quality, Transparency & Inclusiveness .....	13
5.	Challenges and Knowledge Gaps in Key Impact Areas.....	14
5.1	Challenges and Knowledge Gaps in the Area of “Social Protection Systems and Essential Services” .....	15
5.2	Challenges and Knowledge Gaps in Area of the “Future of Work” .....	17
5.3	Challenges and Knowledge Gaps in the Area of “Education and Skills Development” .....	18
5.4	Challenges and Knowledge Gaps in the Area of a “Fair Transition towards Climate Neutrality” .....	20
6.	Cross-cutting and interacting dynamics.....	21
6.1	Self-Reinforcing Inequalities Across the Life Course .....	22
6.2	Unequal Adaptation to Green and Digital Transitions .....	22
6.3	Institutional Interdependence Between Labour Markets, Skills, and Welfare .....	23
6.4	Institutional Constraints and Governance Capacity.....	24
7.	Research and Innovation Priorities.....	25
7.1	Cross-cutting R&I Priorities .....	25
7.2	Impact area-specific R&I Priorities.....	29
7.3	Types of Research Needs and Evidence Architecture Across Impact Areas.....	33

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7.4 From Knowledge to Transformation: Partnership and Uptake Architecture .....	34
8. Strategic Use, Implementation and Further Development of the SRIA.....	35
8.1 Logic and Use of the SRIA .....	35
8.2 Monitoring and Impact Orientation .....	36
8.3 Governance and Updating Process .....	36

# 1. Introduction & Strategic Context

This Strategic Research and Innovation Agenda (SRIA) is aimed at responding to major challenges for European societies for the coming decades. Despite the diversity of European societies in terms of their governance structures, institutions as well as social, economic and cultural characteristics, common large-scale challenges make a comprehensive transnational and comparative joint research and innovation agenda indispensable. Because encompassing insights are needed, only a joint European research initiative can meet the complexity of the subject matter.

As European societies are undergoing fundamental transformations, complex new tasks arise for policy makers and other key actors shaping European societies in their specific national contexts. Therefore, in addition to researchers, the SRIA targets a wide range of stakeholders including policy makers, social partners, and civil society organisations who are expected to participate in research and innovation activities and engage in a dialogue. It is collaborative, cross-sectoral research and innovation that creates the evidence base that decision makers need to set the course for a more resilient society amid the ongoing and future social transformations.

## 1.1 Motivation: Addressing Europe's Social Transformations and Systemic Pressures

Europe is undergoing **profound social transformations** driven by climate change, ecological transitions, digital transitions, demographic change, rising inequalities, geopolitical instability and unexpected shocks, such as pandemics and energy crises. These developments are reshaping welfare systems, labour markets, education and skills systems, and the social foundations of the transition towards climate neutrality. These transformations are **creating systemic pressures** in the form of widening divides in income, skills and access to services, structural skill shortages, uneven impacts across regions and population groups, risks of social conflict, erosion of trust and challenges to social cohesion and democratic legitimacy. Without coordinated responses, the gap between social groups, territories and Member States may widen.

Despite a wealth of research, **critical gaps in current knowledge systems remain**:

- fragmentation of Social Sciences and Humanities (SSH) in research that is geared at developing solutions to handle societal challenges
- lack of comparative and cross-country evidence
- insufficient integration of behavioural, cultural, institutional and governance perspectives
- inadequate understanding of distributional effects and fairness
- underdeveloped tools to anticipate and shape transformations
- lack of future-oriented approaches to generate orientation knowledge how to face future challenges
- limited evidence on social innovation, experimentation, and solution pathways.

The **SRIA therefore** provides a common direction and key priorities for European R&I on social transformations, aligned with EU priorities such as the European Pillar of Social Rights, the European Green Deal, the Digital Decade, and the Sustainable Development Goals (SDGs). This agenda fills a gap in that it addresses the social dimensions of transitions, an area currently underrepresented in EU partnerships and missions. In addition, it is geared to exploring ways in which the resilience of societies can be maintained and strengthened in the face of diverse challenges. The Partnership sees itself as an evolving, learning collaboration. The challenges addressed are long-term, uncertain and transformative in nature. For this reason, the SRIA does not function as a fixed blueprint with rigid activity plans, but rather as a strategic framework that guides programming whilst remaining adaptable to new evidence, emerging risks and institutional developments. Continuous monitoring, reflexive learning and iterative updating are integral to the Partnership's governance architecture.

The SRIA was drafted using a **strategic foresight approach** because it supports the systematic exploration of long-term developments and uncertainties that will shape Europe's social transformations over the coming decades (see

Chapter 4). This approach helps the Partnership's strategy anticipate relevant changes to the calls by identifying emerging issues, potential shocks, and key transition dynamics early on. Furthermore, incorporating strategic foresight methods into the preparation of the SRIA increases its relevance to policy and practice, providing a robust basis for defining research and innovation priorities that are fit for purpose in conditions of complexity and uncertainty.

Four strategic foresight cycles were conducted in preparation for the SRIA in 2024–25, addressing the four expected impact areas of the STR Partnership<sup>1</sup>:

1. Supporting the modernisation of social protection systems and essential services
2. Shaping the future of work
3. Fostering education and skills development for the green and digital transition
4. Contributing to a fair transition towards climate neutrality

In line with the Partnership's particular **emphasis on circular causation and life-course dynamics**, the results of these foresight cycles were considered in terms of cross-cutting dynamics. Inequalities in education influence labour-market outcomes and health, while income insecurity and health disparities impact educational attainment and social mobility. Climate and digital transitions redistribute risks and opportunities in ways that interact with institutional capacity and public trust (see Chapter 6). The SRIA therefore moves beyond sector-specific problem definitions, supporting research that can shed light on interaction effects, unintended spillovers and cumulative pressures.

## 1.2 Purpose and Ambition: What the Partnership Aims to Achieve

The core purpose of the STR-Partnership is to enable a **long-term, coordinated European R&I approach** focused on understanding social transformations and strengthening Europe's capacity to respond to complex social challenges. This Partnership thus supports fair, inclusive and resilient transitions by fostering the evidence-base, encouraging interdisciplinary collaboration and systematically engaging stakeholders from the worlds of policy, practice and society. To this end, the Partnership will provide **robust scientific evidence** for policymaking in the key areas it covers: social protection systems and essential services, the future of work, education and skills, and the fair transition to climate neutrality. The Partnership will produce knowledge to clarify the drivers, interactions and impacts of social transformations and generate actionable knowledge to support the design and implementation of policies and social innovations.

Another purpose of the STR-Partnership is to **encourage experimentation and social innovation**. This can be achieved through living labs, policy pilots, individual and social experiments, and participatory processes that test new models of service delivery, work organisation, education, and community engagement. By generating knowledge, tools, and innovative solutions, the Partnership will strengthen Europe's ability to anticipate, absorb, and adapt to shocks and structural shifts, thereby improving resilience at the levels of the individual, institutions, and society as a whole.

Finally, the Partnership will contribute to the **European ecosystem of comparative, transnational and cross-sectoral research** and researchers. This ecosystem will help to overcome fragmentation, **strengthen the European Research Area**, and **mobilise a broad coalition of funding organisations, researchers, policymakers, social partners, and civil society organisations** to work together towards shared goals.

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<sup>1</sup> European Partnership on Social Transformations and Resilience under Horizon Europe. Draft proposal. Version 28 January 2025, [https://chance.org/wp-content/uploads/2025/01/STR\\_draft-guidance-proposal\\_ver-28.01.2025.pdf](https://chance.org/wp-content/uploads/2025/01/STR_draft-guidance-proposal_ver-28.01.2025.pdf), p. 12.

### 1.3 Strategic Context: Alignment with EU Priorities and Policy Frameworks

The SRIA is aligned with major European frameworks that shape social, economic, and environmental transitions, including:

- European Green Deal: ensuring socially fair pathways to climate neutrality.
- Digital Decade Policy Programme 2030: addressing digital transformation, skills, data governance, and digital inclusion.
- European Pillar of Social Rights: guiding fairness, inclusiveness, quality jobs, skills development, and access to social protection.
- European Skills Agenda and European Education Area: supporting lifelong learning, talent development, and educational resilience.
- Horizon Europe (Cluster 2): providing the R&I foundation for understanding social transformations, democracy, governance, and cultural change.
- EU Strategic Foresight Agenda: highlighting resilience, preparedness, social cohesion, and just transitions as strategic priorities.
- UN SDGs, in particular SDGs 1, 4, 5, 8, 10, 11 and 16.
- ...

Together, these frameworks provide the strategic backdrop for the STR Partnership and support alignment between European and national research agendas, strengthening coherence across Member States and ensuring that R&I investments contribute to fair, inclusive, and resilient transitions.

### 1.4 Added Value: What the Partnership Brings That Does Not Yet Exist

The STR-Partnership establishes a dedicated European Partnership that explicitly focuses on the social dimensions of the green, digital and demographic transitions, addressing an identified gap in the current Horizon Europe landscape. The Partnership creates a **structured platform that connects research with policymaking and practice**, ensuring the coordinated engagement of ministries, public authorities, social partners, NGOs and local actors.

The Partnership helps to **further strengthen the links between knowledge production and policy design**, experimentation and evaluation. The objective is not merely to expand academic understanding, but also to strengthen the evidence base for policymakers and institutional actors responsible for societal change. This involves supporting descriptive research where problems are not well understood, explanatory research where mechanisms are unclear, and evaluative research where policy instruments can be tested and refined. By aligning types of research with stages of knowledge maturity, the Partnership increases the likelihood that funded projects will generate evidence that is both usable and relevant to decision-making.

Additionally, the Partnership provides a **long-term structure for coordinated action**, including joint calls, shared priorities, and stronger alignment of national strategies. This enables more comprehensive research, builds synergies and reduces duplication across Europe's fragmented SSH funding landscape, while strengthening the coherence and visibility of social transformation research at a European level. Finally, the Partnership is characterised by a clear **long-term impact orientation**. It contributes to robust, evidence-based social policies that uphold the European Pillar of Social Rights, supports transitions towards climate neutrality that are socially just and democratically legitimate, fosters social cohesion and trust by addressing inequalities and empowering citizens and communities, and strengthens Europe's preparedness for future crises and uncertainties.

## 2. The Partnership's Vision & Mission

What is the long-term strategic direction of the Partnership? And what are the key objectives that shape the SRIA's design?

### 2.1 Common Vision and Mission of the Social Transformation and Resilience Partnership

#### **Vision**

- Relevant European research focusses heavily on generating evidence geared at enabling European societies to navigate profound green, digital, demographic, and geopolitical transformations in ways that strengthen resilience, fairness, inclusiveness, and social cohesion.
- European research proliferates evidence to facilitate European societies to proactively shape these transitions, rather than merely react to them, through tailor-made policymaking informed by this evidence, social innovation, experimentation, and evidence-based governance.
- There is an established research ecosystem that understands these transformations as long-term, systemic, society-wide shifts that require coordinated action across welfare systems, education, labour markets, and climate-related policies.
- The potential of relevant research is fully mobilised to analyse institutional, social, cultural, economic and technological changes, enabling better strategies for fair, inclusive, and future-oriented development.
- The Partnership contributes to a Europe where resilience is strengthened, inequalities are reduced, trust is rebuilt, and social cohesion is supported through policies aligned with shared European values.

#### **Mission**

The Partnership's vision is to establish a Research and Innovation (R&I) programme spanning seven to ten years, in which the social sciences and humanities (SSH) will explore and utilise their potential to provide substantial support for political and social initiatives aimed at building resilience, ensuring fairness and inclusiveness, and fostering social cohesion in the context of changes in climate and environment, technology, demography, and unexpected shocks. The Partnership also aims to foster the development of knowledge, tools, and innovative solutions to address contemporary social challenges in a collaborative, interdisciplinary, and systematic way. By providing a robust scientific evidence base on social transformations, the Partnership will contribute to new strategies and policy solutions at European, national and regional levels.

#### **Working across four impact areas**

- Provide a multidisciplinary evidence base for policymaking in four impact areas:
  - Supporting the modernisation of social protection systems and essential services in order to secure their financial stability and thus create a functioning social protection also for coming generations - not merely as a compensatory mechanism, but as a key institution fostering individual and social resilience, social cohesion, and the acceptability of ecological and digital transitions.
  - Shaping the future of work securing human-centred employment as well as culturally embedded life-long learning over the life-course and thus enabling sustainable economic transformation while strengthening the inclusiveness, fairness, well-functioning and resilience of labour markets.
  - Fostering education and skills development so that the provision of training is better aligned with citizens' and labour market demands, imparting social-emotional competences among students, and inclusive competences among teachers geared to equality of chances and responding to the pressures of the digital and green transitions and to demographic decline.

- Contributing to a fair transition to climate neutrality built on fiscal and regulatory frameworks as well as institutional capacities and protecting households from disproportionate burdens, while promoting democratic legitimacy under long-term transformation pressures.
- The detailed long-term visions for these four impact areas are presented in Chapter 4.

## 2.2 The Partnership's Operational Objectives

The operational objectives translate the overarching vision and mission of the STR Partnership into concrete research and innovation ambitions. They operationalise how the Partnership will generate the knowledge, tools and evidence needed to support fair, inclusive, and resilient social transformations across Europe. To implement its vision and mission, the Partnership will pursue seven operational objectives, which enable the Partnership to deliver on its mission and support the realisation of the four impact-area visions:

1. **Enhance the knowledge and use of existing research and administrative data, support the collection of new comparative data, and foster good data management principles as well as FAIR (findable, accessible, interoperable, and reusable) data:** Improve the availability, comparability, and accessibility of data to understand social transformations, distributional effects, and resilience across Member States.
2. **Promote comparative studies across countries and regions:** Foster transnational, interdisciplinary research that enables Europe to learn from diverse institutional settings, governance models, and social responses.
3. **Connect researchers with policymakers, stakeholders, and citizens for co-creation and collaboration:** Strengthen interfaces between knowledge production, civic engagement, and decision-making by building platforms for exchange, participation, and knowledge translation.
4. **Promote the development of social and individual experimentations:** Support pilot projects, testing environments, living labs, and experimental approaches (including Randomized Controlled Trials where appropriate) across local, regional, national, and European levels to explore innovative solutions in real-life settings.
5. **Encourage new analytical approaches and methodological tools:** Advance methods such as strategic foresight to anticipate challenges and facilitate the development of adequate response strategies, action research including social interventions and research into social change, and mixed-method approaches to comprehensively analyse social transformations, the impacts of transitions, and preconditions for resilience.
6. **Build capacity among the R&I community and policymakers:** Strengthen competencies in crisis preparedness, adaptive policymaking, and systemic thinking, and support the development of research and governance capacities relevant to the four impact areas.
7. **Create a participatory hub and synergies forum:** Build a platform that anchors the Partnership in a broad ecosystem of EU, national, regional and local actors.

# 3. Key Approaches and Principles of the SRIA

## 3.1 Expertise and Methods: The Research Approaches Underpinning the SRIA

Understanding and addressing social transformations and identifying potential social resilience requires expertise spanning various perspectives, institutional and behavioural analysis, and historical and cultural understanding. Inter- and multidisciplinary approaches are particularly apt to capture the complexity of transitions. Among these, problem-oriented Social Sciences and Humanities (SSH) research plays a central role in analysing complex interrelationships and interactions. SSH contributes knowledge that clarifies the drivers, interactions and social implications of transformations. It also

offers analytical insight into social relationships, governance structures, institutional dynamics, historical legacies, inequalities, identities, values and norms. SSH also provides historical and interpretive perspectives that shed light on long-term developments and the socio-cultural foundations of social change. This includes the processes by which meaning is created, which shape attitudes, acceptance, trust, norms and values and thus legitimacy.

To ensure that SSH research informs policy and practice, the Partnership will invest in measures that support and incentivise SSH research, strengthening problem-solving capacities and undertaking outcome-oriented work related to the design, implementation, and evaluation of policies and social innovations. The Partnership will therefore explicitly encourage problem-solving elements in supported research, for example through living labs, policy pilots, individual and social experimentation, and participatory processes.

The SRIA promotes interdisciplinarity across the entire spectrum of SSH disciplines and beyond. Collaborating with other disciplines opens up new research perspectives and provides insights into areas that would otherwise remain unexplored. Cooperation with STEM fields, such as data science, AI, educational technology and environmental engineering, will be particularly important for analysing complex systems, developing innovative solutions, and understanding human–technology interactions.

Due to the complexity of the issues being addressed, the SRIA encourages the use of a variety of empirical methods and approaches, as well as framing issues within a broad, potentially comparative context. This productive openness to multiple disciplines and methodological approaches is necessary in order to address multidimensional challenges and support fair, inclusive and resilient transitions.

Finally, achieving impact requires the systematic integration of the expertise of policymakers, practitioners, social partners and civil society at local, regional, national and European levels. Co-creation and stakeholder engagement enhance the relevance, legitimacy and social uptake of research outcomes while facilitating experimentation in real-life settings. Building on this approach, previous European initiatives in related fields (including CHANSE, HERA, NORFACE and T-AP) provide a solid basis for cross-border, interdisciplinary and collaborative research. The SRIA builds on this legacy by engaging new communities and establishing stronger links between SSH research and policymaking, system transformation and resilience-building.

### 3.2 How Research contributes to Achieving the Partnership's Aims

R&I contribute to the aims of the Partnership to stimulate, enable and fund research that forms a good basis for policies that may lead to better systems and better lives for people in Europe by:

- Providing orientation knowledge, enabling institutions and policymakers to understand complex transformation dynamics, long-term drivers, and multi-level interactions.
- Generating actionable knowledge and innovative solutions that can inform reforms, governance improvements, social innovation, and policy design.
- Producing comparative and context-sensitive evidence that supports policymaking at local, regional, national, and EU level.
- Facilitating co-creation and stakeholder engagement, ensuring that research reflects social needs and strengthens understanding legitimate institutions, trust, and uptake.
- Supporting experimental approaches, allowing European societies to test novel models of service delivery, work organisation, skills development, and transition governance.
- Enabling anticipatory, future-oriented planning through strategic foresight, scenario development, and back-casting, thus strengthening resilience and preparedness.

### 3.3 Guiding Principles

The guiding principles define the ethos of the STR Partnership and shape how the SRIA is developed and implemented. They ensure that research supported through the Partnership is excellent, inclusive, future-oriented, and socially relevant.

**Co-creation:** Stakeholders are involved throughout the research cycle to ensure that research questions are relevant, findings are valid, and results are usable. Co-creation deepens contextual understanding and enables effective impact through actionable solutions, targeted dissemination, and broad uptake across policy, practice, and society.

**Transformation-driven orientation:** Research priorities are derived from the major social transformations Europe faces. The Partnership focuses on system-level change rather than isolated sectoral or disciplinary agendas, ensuring that R&I contributes directly to resilience, fairness, inclusion and cohesion.

**Support for policymaking at all levels:** R&I activities are designed to inform evidence-based decision-making at local, regional, national and EU levels. Research under the SRIA strengthens the analytical foundations for strategic policy development, governance reforms, and long-term planning.

**Stakeholder participation:** Policy actors, social partners, and civil society contribute to identifying needs, shaping research questions and supporting uptake of results. Their involvement ensures social relevance, enhances legitimacy, and facilitates implementation.

**Openness:** The SRIA promotes openness to new ideas, research approaches and disciplinary perspectives. It encourages collaboration and knowledge exchange across sectors and communities, ensuring transparency and inclusiveness in research design, implementation and dissemination.

**Interdisciplinarity and transdisciplinarity:** Complex social transformations require an inter- or even multidisciplinary perspective. They may also require integrating SSH with technical sciences, environmental sciences and systems thinking. Interdisciplinary, cross-sectorial and transdisciplinary approaches that engage stakeholders such as social partners, civil society organisations or public authorities, support holistic analyses and innovative solutions.

**Inclusion and diversity:** Equity, diversity and inclusion are core principles of the Partnership. Calls and activities incorporate EDI requirements, avoid discrimination, and encourage participation from underrepresented groups in order to support a broad diversity of researchers. Research should address social relations determined by gender, ethnic minority and indigenous (identity), age, disability, socio-economic diversity, and geographic inequalities and intersectionality of all these aspects, in order to develop insights considering inclusiveness, justice, and other core democratic values.

**Promotion of social innovation:** The SRIA supports experimentation, new models of service delivery and bottom-up innovation that addresses the needs of communities through dialogue and collaboration and are geared to help societies adapt to green, digital, demographic and geopolitical changes. Research is expected to explore, test and evaluate social innovations and their pathways to adoption.

**Ethical Research:** Research activities adhere to high standards of integrity, ethics and data protection. Ethical considerations guide participatory processes, experimentation, digital technologies and work with vulnerable populations.

**Future-Oriented Thinking:** Anticipatory approaches such as foresight, scenario-building and systemic analysis ensure that research is aligned with long-term social challenges and strengthens preparedness for future shocks as well as resilience when facing challenges.

**Fostering Scientific Excellence:** The Partnership supports high-quality research. Excellence will be reached in three respects: safeguarding scholarly excellence through competitive selection procedures with transparent review processes; promoting innovative and societally relevant scholarship; ensure excellent impact, reaching out effectively and targeted precisely at bringing about the desired change.

**Policy Relevance:** With regard to impact, research should be accessible and actionable for policy actors, in particular. Activities support evidence-based policymaking by producing timely, high-quality insights across all governance levels.

**Social impact:** The SRIA aims to generate both academic and social impact. Research should make a visible contribution to addressing inequalities, strengthening cohesion, supporting a fair transition and improving governance across the four impact areas

## 4. Strategic Foresight-Based Development of the SRIA

The following chapter outlines the methodology used to develop the draft SRIA and provides context for the analysis in the following sections. The strategic foresight methodology used to prepare the evidence-base for this SRIA is described using a logic model that depicts how the foresight analysis contributed to the structure and strategic content of the Partnership and eventually wider impacts for societies in Europe.

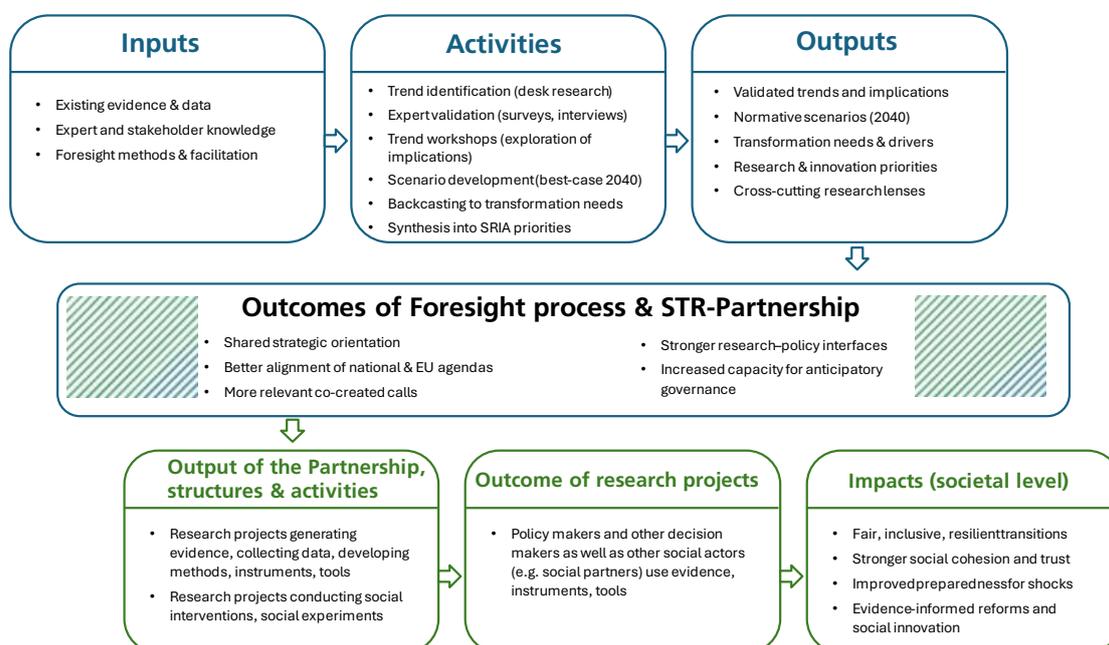


Figure 1. Logic model for the STR Partnership and the contributions of the strategic foresight process

Note: The upper layer (in blue) describes the logic model of the strategic foresight process that created the evidence base for the SRIA. The part in the middle (in green and blue) depicts the transitional stage in which the outcomes of the strategic foresight process feed into the STR-Partnership’s SRIA process. The lower layer of the figure (in green) showcases the logic model of the STR-Partnership, guided by the SRIA process.

### 4.1 Foresight Process: How Evidence Was Generated

The SRIA development followed a foresight-oriented approach to ensure that research priorities are informed by systematic exploration of long-term developments, enabling the Partnership to anticipate change rather than react to it. Strategic foresight supports evidence-based, proactive decision-making, aligns research with future societal needs, and helps identify emerging issues, shocks, and transition dynamics early. Co-creation across all steps ensured shared ownership, strengthened legitimacy, and aligned the SRIA with the needs and perspectives of researchers, policymakers, and social actors.

A dedicated foresight cycle was carried out for each impact area: Future of Work, Education & Skills Development, Social Protection & Essential Services, and Fair Transitions towards Climate Neutrality. The process combined structured desk

research with participatory formats, ensuring methodological transparency and broad stakeholder involvement throughout. Experts from academia, public authorities, funding bodies, social partners, civil society, non-profits, and the private sector participated, ensuring diverse disciplinary, institutional, and geographical perspectives.

1. **Step 1: Trend Identification (Desk Research):** Systematic desk research formed the evidence base for identifying longlists of 25–34 trends per impact area. Sources included academic studies, foresight and trend reports, and publications by international organisations such as EU, OECD, ILO, WEF (depending on the domain).
2. **Step 2: Expert Validation (Survey + Interviews):** Online surveys for each impact area validated, refined, and prioritised the longlists into ten high-impact trends per impact area, drawing on responses ranging from 132 to 187 experts across Europe. Free-text feedback was analysed to sharpen trend descriptions, identify overlooked issues, and integrate missing nuance. Semi-structured expert interviews added contextual depth, surfaced weak signals and underexplored issues, and linked trends to research and policy implications.
3. **Step 3: Trend Workshops:** Each cycle included an online trend workshop with 27 to 42 participants. Participants worked in breakout groups using the so-called ‘Futures Wheel’ method to map first-, second-, and third-order implications of each validated trend. Workshops aimed to (1) validate and enrich implications, (2) bring together diverse expertise, and (3) generate structured input for scenario development.
4. **Step 4: Scenario Development:** For each impact area, a normative best-case scenario for 2040 was developed, grounded in validated trends and their implications. Scenarios synthesise expert perspectives, stakeholder input, and institutional knowledge into future-oriented narratives that guide strategic thinking and highlight desired outcomes.

#### 4.1 From Scenarios to Transformation Needs: The backcasting Process

A backcasting approach was applied to translate the best-case 2040 scenarios into actionable strategic guidance for the SRIA. This method enabled experts to work backwards from desirable futures in order to identify the milestones, enablers and barriers that would need to be addressed in order to realise them. Based on validated trends and their implications, as well as the four normative scenarios, participants identified the key steps required to transition from the present to the envisioned futures. The process also highlighted cross-cutting enablers and barriers shared across impact areas (see Chapter 6), indicating where progress in one domain depends on transformations in others.

Each action step was examined in terms of the necessary research, evidence, methods and innovation. This enabled participants to derive a set of priority R&I needs, focusing on filling knowledge gaps, improving understanding of system dynamics and supporting experimentation and solution development.

Synthesising all impact areas revealed clusters of shared transformation needs, showing where R&I can create leverage across multiple systems. These consolidated insights form the basis for the transformation needs outlined in Chapter 5, providing a direct link between the foresight results and the SRIA’s research agenda.

## 4.2 Role of Scoping Studies Mapping the State of the Art

To complement the strategic foresight process, four scoping studies<sup>2</sup> were commissioned to map the state of the art in each impact area and to identify initial research gaps. These studies synthesise existing knowledge, ongoing Horizon Europe (HE) activities, and emerging debates in European and international research. They provide a structured overview of where evidence is strong, where contradictions persist, and where new research is required to address the transformation needs identified through foresight. They

- Provided baseline knowledge on social transformations in Europe across the four STR impact areas.
- Reviewed recent research, policy debates, and relevant Horizon Europe projects (e.g., Education scoping study analysis of HE projects).
- Identified gaps, blind spots, and under-researched topics, especially concerning green/digital transitions, demographic change, and unexpected shocks.
- Helped detect fragmentation in existing research landscapes and the need for better coordination across disciplines and national contexts.
- Informed the consolidation of transformation needs by clarifying where strong evidence already exists and where new R&I investments could add value.
- Ensured alignment with existing EU frameworks and avoided duplication with ongoing initiatives.

The scoping studies complement the SRIA development process. They do not define research priorities themselves, but rather support and validate the transformation needs identified through the foresight process. By mapping existing evidence and areas where knowledge remains fragmented or insufficient, the studies contribute to building a solid evidence base for Chapter 5, where the transformation challenges and knowledge needs are explored in depth. Their insights help ensure that the SRIA's priorities are grounded in what is already known, avoid duplication with existing research efforts, and concentrate on areas where new R&I investment is most beneficial. In addition, the studies highlight where European collaboration can generate added value, particularly in domains where national-level evidence is sparse or uneven, thereby strengthening the strategic coherence of the future Partnership.

## 4.3 Process Quality, Transparency & Inclusiveness

The foresight process that underpins the SRIA was conducted using a transparent and systematic methodology to ensure clear traceability from evidence to strategic conclusions. Multiple sources of input, including desk research, expert surveys, interviews, workshops, scenario development and backcasting, were combined to ensure the triangulation and robustness of insights. All analytical steps were based on documented methods and explicit criteria, enabling transparency in how trends, implications, scenarios and transformation needs were derived. Workshops and consultations were designed to minimise bias, encourage open dialogue and integrate both converging and diverging viewpoints.

The SRIA was prepared by a wide range of experts, who generously contributed their expertise during the foresight processes for the four impact areas. Diverse stakeholders from research, policy, funding bodies, social partners, civil society and practice, ensured that multiple perspectives and forms of expertise were represented throughout. Among the **four trend surveys**, a total of **625 submissions** could be gathered. The four **online trend workshops** brought together **134** participants and **40** experts shared their views on the potential research priorities for the SRIA at the

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<sup>2</sup> You can access the studies here:

- [The future of work](#) – by Werner Eichhorst and Isabelle Berrebi-Hoffmann
- [Change and stability of social protection systems in societal and ecological transitions](#) – by Olli Kangas and Pascale Vielle
- [Education and skills for social transformations and resilience](#) – by Mikołaj Herbst and Geraldine Mooney Simmie
- [Fair transition towards climate neutrality](#) – by Edoardo Croci and Zuzana Harmáčková

**backcasting workshop** in Bonn, Germany. Overall, an equal share of men and women from **37 different European countries** helped to prepare the SRIA by sharing their views and priorities. This approach ensured shared ownership, strengthened the legitimacy of the resulting priorities and aligned the SRIA with the ERA's principles of openness, excellence and inclusiveness.

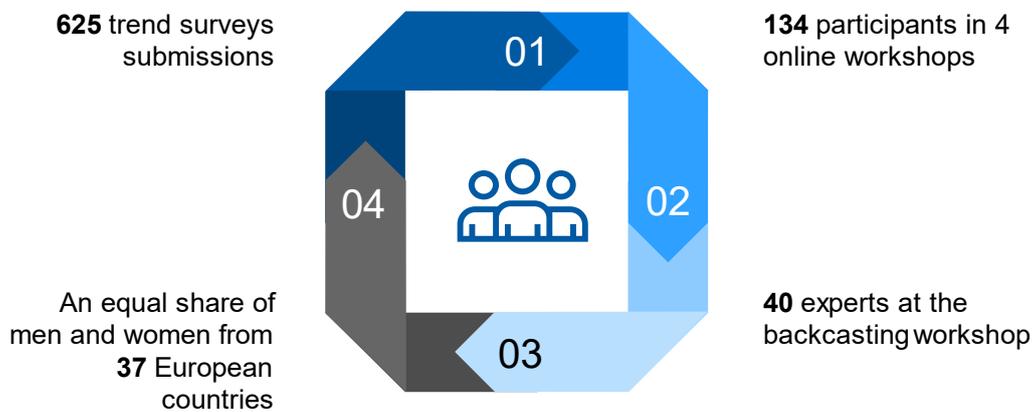


Figure 2. The participatory and anticipatory approach to developing the SRIA

Naturally, this strategic foresight process has its limitations, particularly with regard to the number of experts who can be invited to participate in workshops and qualitative interviews. Due to time, budget and staff constraints, it was only feasible to hold one workshop per impact area, one backcasting workshop with about 40 experts per workshop. Thus, the limited number of experts who took part in the workshops and interviews cannot represent the entirety of the respective research community or stakeholder group. However, when selecting experts, we aimed to achieve a balance in terms of country of work organisation, stakeholder (academia and beyond), discipline, research interests and gender. In addition to the fairly balanced composition of the expert groups, systematically evaluating what other experts had validated, analysed and prioritised in previous steps of the strategic foresight cycle was another way to minimise distortions. Another method of providing checks was to include the results of the four scoping studies (see Chapter 4.2) at each step (desk research, trend collection, interview guidelines and workshop evaluations). Finally, the authors of the scoping studies, having extensive knowledge of their respective research and policy fields, participated in the trend and backcasting workshops. Overall, the limitations of the strategic foresight process were mitigated to the degree possible.

## 5. Challenges and Knowledge Gaps in Key Impact Areas

This chapter identifies the major transformation pressures and knowledge gaps within the four impact areas of the Partnership. It provides the thematic foundation for the SRIA by outlining where existing systems are under strain, where evidence remains fragmented or insufficient, and where research and innovation are needed to strengthen the basis for informed policy development and implementation.

The role of the SRIA is to guide the Partnership's research initiatives so that they generate robust, policy-relevant knowledge capable of underpinning effective societal transformation efforts undertaken by policymakers and other actors. In this sense, the chapter focuses on identifying areas where better understanding, comparative and cross-country evidence, and integrated analysis are necessary to support decision-makers in navigating complex structural change.

Each impact area section includes:

- A short **vision statement**, developed collaboratively through foresight processes, providing orientation for long-term aspirations<sup>3</sup>.
- **Transformation challenges** and strategic relevance, outlining why the area matters, what pressures are reshaping it, and what is at stake.
- **Policy and knowledge needs**, identifying systemic gaps, blind spots, and areas where R&I are required to strengthen evidence-based policy and practice.

Together, these sections define the thematic demand for R&I that will be further integrated and operationalised in Chapters 6 and 7.

## 5.1 Challenges and Knowledge Gaps in the Area of “Social Protection Systems and Essential Services”<sup>4</sup>

Social protection systems and essential services face mounting pressure as demographic change, labour-market transformation, climate risks, and digitalisation interact and intensify existing vulnerabilities. Systems originally designed around rather stable employment patterns, manageable demographic structures, and clearly defined risk profiles must now respond to more heterogeneous career patterns and life courses as well as overlapping forms of insecurity.

One major challenge concerns changes in the labour market. The expansion of non-standard, fragmented, and discontinuous work complicates access to contributory schemes and challenges the adequacy and continuity of entitlements. Younger workers, those with interrupted careers, and individuals in precarious or platform-mediated employment are particularly exposed to coverage gaps. Existing institutional arrangements struggle to reconcile labour-market flexibility with income security and comprehensive protection.

At the same time, new and overlapping forms of vulnerability are emerging. Climate change increases exposure to health risks, housing insecurity, and service disruptions, particularly for disadvantaged groups. Yet analytical frameworks often treat social and environmental risks separately, limiting the ability to understand how eco-social risks interact and accumulate. As a result, policy responses may address individual risks without recognising their combined effects.

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<sup>3</sup> For more information see [Co-creating a common vision](#).

<sup>4</sup> Based on (1) Kangas, O. and Vielle, P. (2025): [Change and stability of social protection systems in societal and ecological transitions – Scoping study](#). European Commission, Directorate-General for Employment, Social Affairs and Inclusion. Luxembourg: Publications Office of the European Union.

Figure 3: Vision - Social Protection Systems & Essential Services

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### **The Vision**

*Social protection systems and essential services in Europe are resilient, inclusive, and futures-oriented, ensuring security and equal access for all. A modernized welfare system effectively supports individuals throughout the life course to maintain a decent standard of living, irrespective of work status. Social policies are recognized as an investment in societies as they strengthen European competitiveness and social cohesion. While social protection remains a national competence, greater coordination and exchange of best practices foster stronger cooperation across Member States, reinforcing shared values that contribute to a sense of European solidarity. On this ground, social policies are regarded as a shared responsibility, ensuring that national approaches remain adaptive and responsive to common challenges. Digitalization has been successfully leveraged to enhance service accessibility, including remote healthcare and digital social protection solutions, without reinforcing inequalities or digital divides. Through strong collaboration between science, policy, and society, social protection is adaptive, innovative, and financially sustainable, equipping Europe to navigate demographic shifts, labour market transformations, and climate-related challenges. To support better evidencebased policymaking, researchers have access to administrative data in the area of social security. Finally, social protection systems are designed to proactively support and integrate those most at risk of social exclusion, ensuring that vulnerable groups have access to the necessary services and opportunities to fully participate in society.*

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Digitalisation reshapes both governance and delivery of services. Automated decision-making and data-driven tools offer potential efficiency gains but raise concerns regarding access, transparency, and exclusion. Digital interfaces may create barriers for individuals with limited digital skills or infrastructure access, while algorithmic systems risk reproducing existing biases. Research on how digitalisation affects accountability, user experiences, and trust remains fragmented.

Governance and institutional capacity further influence system responsiveness. Responsibilities are often distributed across multiple levels and actors, complicating coordination and generating uneven implementation. Comparative evidence on how different institutional configurations manage fiscal constraints, crisis exposure, and long-term adaptation remains limited.

Trust and legitimacy are increasingly central. Perceived fairness, accessibility, and responsiveness shape public confidence and policy take-up. Rising complexity, digital exclusion and administrative burdens risk undermining trust, yet research on how institutional design and service delivery models influence legitimacy under sustained transformation pressures remains underdeveloped.

Despite substantial research on individual welfare components, knowledge remains fragmented across policy domains (e.g. employment, health, housing) and disciplines. Integrated evidence on how social protection systems and essential services function under compounded risk and prolonged uncertainty is limited. This constrains the ability to assess the long-term adequacy, accessibility, and sustainability of welfare systems.

Overall, social protection systems increasingly function as stabilising infrastructures in contexts of overlapping structural pressures. While challenges are widely recognised, evidence on how systems can adapt to new forms of vulnerability, maintain legitimacy, and coordinate responses across domains remains incomplete.

## 5.2 Challenges and Knowledge Gaps in Area of the “Future of Work”<sup>5</sup>

Labour markets in Europe are undergoing profound and interrelated transformations that are reshaping employment relations, work organisation, and the experience of work. Digitalisation, automation, and the growing use of algorithmic systems increasingly affect task composition, skill requirements, and managerial practices across sectors. These developments intersect with demographic change and economic restructuring, contributing to labour-market volatility and new forms of inequality. Together, these dynamics challenge institutional arrangements that were largely designed around stable employment relationships.

A defining feature of these transformations is the growing heterogeneity of employment forms. Alongside standard employment, non-standard and hybrid forms of work have expanded, including platform-mediated work, freelancing, and dependent self-employment. While such arrangements can increase flexibility and labour-market access for some workers, they are also associated with higher income volatility, weaker social protection coverage, and limited access to collective representation. Evidence points to persistent gaps in unemployment insurance and social protection for non-standard workers, exposing them to heightened risks of employment instability and insufficient institutional support.

Figure 4: Vision - Future of Work

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### **The Vision**

*Europe’s workforce thrives in an inclusive, resilient, and human-centered work environment that embraces digitalization, demographic shifts, and the green transition and withstands external shocks while ensuring Europe remains a competitive at a global scale. A prosperous and skilled workforce contributes to strengthening the EU’s competitiveness and innovation capacity, makes operations efficient and facilitates the supply of skills, which in turn lays the foundation for European cohesion, democracy and geopolitical stability. All those of working age – including workers, job seekers, and those re-entering the labour market – enjoy access to sustainable and quality employment, supported by continuous reand upskilling opportunities that ensure adaptability to evolving skill demands. A dynamic and future-oriented productive model balances economic growth with social well-being, ensuring that job quantity and job quality reinforce each other. Work-life balance, well-being, and health are prioritized, fostering a fair and participatory work culture that strengthens worker representation, agency and the productivity and innovation of firms. Social partners, governments, businesses, and research institutions collaborate to co-create and implement policies and solutions that ensure fair work distribution, equitable wages, and transparency in labour relations. AI and automation are leveraged to support workers and enhance job quality, rather than replace human labour. Special focus is placed on ensuring equal access to employment for all social groups, addressing inequalities and discrimination related to gender, sexuality, ethnicity, age, disability, geography, and socio-economic backgrounds. Through multi-level governance and social dialogue, Europe pioneers a Future of Work that is fair, adaptable, and globally competitive. Strengthening worker rights is central to this transformation, including decision-making power over work conditions, protections against unfair labour practices, and the right to withdraw from unsafe, unhealthy or unethical work environments.*

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The organisation and experience of work are also changing significantly. Remote and hybrid work models are becoming more widespread, while digital monitoring tools and algorithmic management increasingly mediate work processes. These developments blur temporal and spatial boundaries between work and private life and interact with rising work intensity and performance pressures. Concerns about stress, burnout, and work–life balance are therefore becoming

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<sup>5</sup> Based on (1) Eichhorst, W. and Berrebi-Hoffmann, I. (2025): [The Future of Work – A Scoping Study](#). European Commission, Directorate-General for Employment, Social Affairs and Inclusion. Luxembourg: Publications Office of the European Union, and (2) [Shaping Future of Work – Final Report](#) (2025).

more salient, yet research on occupational health and the protection of non-work time remains fragmented and unevenly integrated across disciplines.

Institutional and regulatory frameworks are struggling to keep pace with these changes. Labour law, collective bargaining systems, and social protection regimes continue to rely on categories that do not fully reflect emerging employment realities. In particular, the governance of algorithmic management and digital labour platforms raises unresolved questions regarding accountability, enforcement, and worker voice. Comparative evidence on regulatory approaches and their effectiveness remains limited, constraining understanding of how institutional frameworks can adapt to evolving forms of work.

Uncertainty about future employment paths further complicates policy and research responses. Technological change, economic pressures, and labour-market restructuring are unfolding unevenly across sectors, firm types, and regions, making it difficult to anticipate cumulative and long-term effects. Existing research often focuses on isolated dimensions of change, while interactions between digitalisation, organisational restructuring, and institutional adaptation remain underexplored.

Overall, despite a substantial body of research, significant knowledge gaps persist. In particular, there is limited evidence on how digitalisation, organisational restructuring, and institutional adaptation interact over time. Comparative and longitudinal evidence remains limited across disciplines and national contexts, with limited comparative insight into how multiple transformation pressures interact and how institutional frameworks mediate their effects over time. This constrains the ability to assess whether current trajectories of change lead towards more inclusive, resilient, and sustainable labour markets.

### 5.3 Challenges and Knowledge Gaps in the Area of “Education and Skills Development”<sup>6</sup>

Education and skills systems play a central role in enabling adaptation to ongoing social, economic, and technological transformations. Rapid technological change, the green transition, and demographic developments are reshaping skill demand across labour markets and sectors, while education and training systems are increasingly expected to support inclusion, mobility, and social cohesion under conditions of uncertainty. These rising expectations put additional strain on systems that are often slow to adapt and differ in their ability to respond to change.

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<sup>6</sup> Based on (1) Herbst, M. and Mooney Simmie, G. (2025): [Education and Skills for Social Transformations and Resilience – A Scoping Study](#). European Commission, Directorate-General for Employment, Social Affairs and Inclusion. Luxembourg: Publications Office of the European Union, and (2) Education and Skills Development – [Final Report](#).

A core challenge concerns the misalignment between evolving skill needs and existing education and training structures. Digitalisation and the deployment of artificial intelligence are accelerating changes in occupational profiles and transversal skill requirements, while the green transition generates demand for new technical, interdisciplinary, and sustainability-related competences. Evidence suggests that education and training systems adapt slowly to these shifts, particularly within formal education and vocational training, increasing the risk of both skills shortages and skills mismatches with uneven effects across regions and social groups

Figure 5: Vision – Education & Skills Development

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### **The Vision**

*Europe has built an inclusive, adaptive, and futures-oriented education and skills ecosystem that empowers individuals to thrive in a rapidly changing world. Education systems, from early childhood to lifelong learning, are holistic, equitable, and responsive, enabling learners of all backgrounds to gain the knowledge, skills, and mindsets needed for the green and digital transitions, demographic shifts, and unforeseen global challenges. Learning is recognized as a continuous journey, with flexible pathways that support both personal development and societal needs. Education embraces innovation and digitalization to enhance accessibility, while maintaining a human-centred approach that values creativity, critical thinking, and social responsibility. Barriers to participation are systematically removed, ensuring a gender-sensitive approach as well as equal opportunities for disadvantaged groups. Teachers, institutions, and policymakers co-create inclusive learning environments that foster democratic values, social cohesion, and resilience. The future of education is collaborative, innovative, and transformative, shaping a Europe where everyone has the right to learn, adapt, and contribute.*

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Persistent inequalities in access to learning opportunities further exacerbate these challenges. Socio-economic background, regional disparities, age, and migration status continue to shape educational trajectories and participation in lifelong learning. While digital learning environments and micro-credentials offer new possibilities for flexible skill acquisition, they also risk reinforcing existing divides where access to infrastructure, digital skills, or institutional support is uneven.

Research evidence remains uneven across different stages of the life course. While initial education and formal qualifications are comparatively well studied, there is limited evidence on the effectiveness, inclusiveness, and long-term outcomes of lifelong learning systems, particularly for adults in mid- and later career stages. Comparative research on how education and training models respond to structural labour-market change, and how learning pathways interact with employment stability, job quality, and social protection over time, remains underdeveloped.

Governance and coordination challenges further constrain system responsiveness. Responsibilities for education and skills policies are often fragmented across levels of governance and institutions, complicating strategic responses to cross-cutting challenges such as digitalisation. Existing research tends to focus on individual policy instruments or reforms, while the interaction between governance arrangements, institutional capacity, and learning outcomes is less well understood.

Finally, growing concerns relate to well-being and resilience within education systems. Rising mental health challenges among learners, increasing demands on educators, and pressures linked to performance measurement and standardisation raise questions about the sustainability of prevailing education and training models. Evidence on the long-term implications of these developments for learning outcomes, skill acquisition, and social cohesion remains fragmented.

Overall, education and skills systems are positioned at the intersection of multiple structural transformations. Despite a broad body of research, significant knowledge gaps persist regarding how these systems can adapt to changing skill demands while promoting inclusion, resilience, and well-being. Addressing these gaps is critical for understanding whether education and skills systems can effectively support sustainable social and economic transformation.

## 5.4 Challenges and Knowledge Gaps in the Area of a “Fair Transition towards Climate Neutrality”<sup>7</sup>

Europe’s transition towards climate neutrality is increasingly challenged by its social, economic, and territorial consequences. Climate policies now affect everyday domains such as housing, energy use, mobility, employment, and local infrastructure, making distributional effects more visible and politically salient. As climate impacts intensify, questions of who bears transition costs, who benefits from mitigation and adaptation, and who is protected from emerging risks have become central to the legitimacy and feasibility of climate action.

Unequal exposure to climate impacts and uneven adaptive capacity represent a defining challenge. Heatwaves, floods, droughts, and infrastructure stress disproportionately affect low-income households, older populations, and regions with weaker fiscal and administrative capacity. Adaptation responses remain uneven, with wealthier regions and households better positioned to invest in protection and resilience. Climate-related damages increasingly trigger disputes over compensation and responsibility, placing strain on solidarity mechanisms and public trust.

Access to the benefits of the transition is similarly uneven. Participation in cleaner mobility, energy-efficient housing, and low-carbon technologies remains concentrated among more affluent and urban populations, while rural and low-income households face higher costs and administrative barriers. Administrative complexity itself can function as a distributional filter, disproportionately excluding groups with limited time, digital access, or institutional support. These disparities risk reinforcing existing socio-economic inequalities and weakening public support for climate policies.

Fiscal and regulatory frameworks are decisive in shaping fairness outcomes. The extension of carbon pricing to buildings, transport, and imports increases pressure on households and regions with limited alternatives. While climate and social objectives are increasingly combined in fiscal instruments, distributional effects depend on policy design, sequencing, and the visibility of compensation mechanisms. Persistent tensions between climate investment and competing fiscal priorities can constrain redistribution and weaken political acceptance.

Although fairness principles are increasingly embedded in legal and regulatory frameworks, research highlights a gap between formal commitments and effective implementation. Variations in administrative capacity, enforcement, and monitoring mean that fairness may remain procedural rather than substantive in practice. Comparative evidence on how fairness can be defined, measured, and operationalised across policy domains remains limited.

Governance capacity and coordination across levels further shape outcomes. As implementation responsibilities shift toward regional and local authorities, disparities in institutional capacity influence transition trajectories. Participatory and place-based approaches can enhance legitimacy, but without binding national frameworks and adequate re-sourcing, local experimentation risks remaining fragmented and uneven.

Trust and public perception are increasingly central to transition dynamics. Perceived fairness, responsibility, and credibility influence public support more strongly than technical policy details. Disinformation, polarisation, and geopolitical tensions may erode trust, particularly where citizens perceive inconsistencies between stated goals and lived outcomes. Research integrating distributional, territorial, governance, and cultural perspectives remains fragmented.

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<sup>7</sup> Based on (1) Croci, E. and Harmáčková, Z. (2025): [Fair transition to climate neutrality – A Scoping Study](#). European Commission, Directorate-General for Employment, Social Affairs and Inclusion. Luxembourg: Publications Office of the European Union, and (2) Fair Transition towards Climate Neutrality – [Final Report](#) (2025).

Figure 6: Vision – Fair Transition towards Climate Neutrality

### **The Vision**

*Europe has achieved a just and inclusive climate transition, ensuring that no person or community is left behind. Fairness and social equity are at the core of climate policies, enabling all citizens (regardless of gender, income, geography, or background) to benefit from the opportunities of a climate-neutral economy. The transition is not only environmentally sustainable but also socially and economically just, mitigating distributional impacts and fostering societal resilience. Communities play an active role in shaping transition policies through meaningful participation and democratic decision-making that challenge existing power structures. Locally grounded and culturally relevant narratives make the green transition accessible and inspire behavioural change, ensuring that global policies are successfully adapted to local realities. Energy poverty has been defeated, and financial mechanisms ensure that all individuals and businesses, particularly in vulnerable regions, can experience direct benefits from climate action. Project funding is designed to maximize tangible, localized impacts, empowering communities to see and feel the transformation in their daily lives. Sustainable technological solutions, including in construction and energy systems, are developed with both environmental integrity and social fairness in mind. By integrating social innovation, participatory governance, and equitable economic policies, Europe's green transition is not only a necessity but a driver of social cohesion, innovation, and economic prosperity*

## 6. Cross-cutting and interacting dynamics

Given the range of pressures identified in each impact area, an important question arises: why do these challenges persist, shift, and reinforce each other over time? How are education and skills, work, social protection and essential services, and the fair transition towards climate neutrality connected? Building on the empirical findings and knowledge gaps identified in the final reports and scoping studies, this chapter sets out the cross-cutting dynamics that link these domains.

The aforementioned challenges are connected through recurring interaction patterns that create feedback loops across sectors, life stages, and levels of governance. Developments in one domain reshape conditions in others, producing circular rather than linear dynamics. Factors that appear as drivers in one context may emerge as outcomes in another, and their roles can change over time and across generations. As disadvantages and opportunities accumulate unevenly over the life course, timing and sequencing of interventions become critical. Early and coordinated responses can prevent reinforcing loops from becoming entrenched, whereas delayed or fragmented interventions allow pressures to intensify and persist.

Taken together, the findings across impact areas indicate that these developments cannot be explained by a single overarching driver or by simple cause-and-effect relationships. Instead, a limited number of cross-cutting transformation dynamics recur across the impact areas and capture distinct but interrelated mechanisms through which pressures co-evolve and reinforce one another over time. Four dynamics proved particularly central:

- Self-Reinforcing Inequalities Across the Life Course;
- Unequal Adaptation to Green and Digital Transitions;
- Institutional Interdependence Between Labour Markets, Skills, and Welfare;
- Institutional Constraints and Governance Capacity.

While the first two dynamics relate to a socio-structural level, the last two dynamics occur at an institutional and governance level. Together, they provide a streamlined yet comprehensive framework for understanding how pressures interact, accumulate, and either stabilise or destabilise systems over time.

Each of the following sections describes one of these dynamics, highlighting its core features and explaining how it links multiple domains. Together with the impact area analyses in Chapter 5, these dynamics provide the analytical bridge to the research and innovation priorities set out in Chapter 7.

## 6.1 Self-Reinforcing Inequalities Across the Life Course

Socio-economic inequalities develop and persist through cumulative processes that unfold over the life course and across generations. Educational opportunities, labour-market participation, income security, health outcomes, and access to social protection are closely linked. Disadvantages in one area often increase the risk of disadvantage in others. These factors do not operate in isolation. Instead, they interact over time and create self-reinforcing patterns of inequality. This dynamic is particularly strong where inequalities intersect with factors such as gender or lone parenthood.

Early-life conditions play a particularly important role in shaping these trajectories. Socio-economic background influences access to quality education, learning environments, and support structures, which in turn affects educational attainment and skill development. These outcomes shape subsequent labour-market opportunities, employment stability, and income levels. In adulthood, labour-market position and income security are closely linked to health outcomes, exposure to risks, and access to social protection and essential services. Health limitations and income insecurity can then reduce individuals' capacity to participate in learning, training, or stable employment, reinforcing earlier disadvantages.

These dynamics extend beyond individual life courses and contribute to intergenerational transmission of inequality. Economic insecurity, poor health, and limited access to services experienced by adults affect the resources and opportunities available to children, shaping educational outcomes and future labour-market participation. In this way, outcomes at one stage of life become drivers of disadvantage at later stages, and inequalities are reproduced across generations rather than dissolving over time – often intersecting with factors such as ethnic minority background.

Structural transformations intensify these cumulative processes. Labour-market fragmentation and the growth of non-standard employment increase income volatility and weaken access to contributory social protection, particularly for those with interrupted or precarious career paths. At the same time, rapid technological and environmental change raises skill demands and adjustment pressures, which disproportionately affect individuals and groups with limited access to education, training, and institutional support. As a result, existing inequalities shape who can adapt to change, while change itself amplifies inequality.

Social protection systems and essential services play a central role in mediating these dynamics, but they are often strained by the very inequalities they seek to address. Gaps in coverage, administrative complexity, and uneven access can reduce the capacity of welfare systems to compensate for labour-market and health-related risks, particularly for groups with fragmented employment histories or limited institutional trust. Where protection is insufficient or difficult to access, insecurity increases and feeds back into labour-market behaviour, health outcomes, and educational participation.

Taken together, these interactions form a self-reinforcing inequality dynamic in which disadvantages accumulate over time and across domains. The persistence of these patterns helps explain why progress in one policy area alone is often insufficient to reduce inequality in a durable way. Understanding how socio-economic inequalities are generated, transmitted, and reinforced across the life course is therefore central.

## 6.2 Unequal Adaptation to Green and Digital Transitions

The green and digital transitions are reshaping economic structures, labour markets, and everyday life, but their impacts are unevenly distributed across social groups, regions, and life stages. Exposure to transition-related risks and the capacity to adapt to new conditions are strongly shaped by existing socio-economic positions, institutional contexts, and territorial characteristics. As a result, the green and digital transitions operate not only as technological and environmental transformations, but also as distributional dynamics that interact with and reinforce broader patterns of inequality.

Differences in adaptive capacity are visible across multiple domains. Access to energy-efficient housing, clean mobility, digital infrastructure, and emerging technologies is uneven, often reflecting income levels, regional development, and administrative capacity. Individuals and households with greater financial resources, stable employment, and higher skills are generally better positioned to benefit from new technologies and climate-related investments. Conversely, those facing income insecurity, limited skills, or weak local infrastructure are more exposed to rising costs, regulatory pressures, and environmental risks, while having fewer means to adjust.

These inequalities feed back into education, work, and social protection systems. Rapid technological change and decarbonisation generate new skill demands and alter occupational structures, increasing the importance of continuous learning and adaptability. Where access to education and training is limited or gender differences play a role, individuals are more likely to experience labour-market displacement or downward mobility, which in turn constrains income security and access to social protection. At the same time, climate-related risks and environmental stressors can increase demand for social protection and essential services, particularly in regions and communities with limited adaptive capacity.

Institutional responses play a central role in shaping these dynamics. Policy design, sequencing, and implementation determine whether the costs and benefits of green and digital transitions are broadly shared or unevenly concentrated. Where compensation mechanisms, targeted investments, or supportive services are insufficient or difficult to access, perceived unfairness can increase and undermine trust and acceptance. Reduced public support can then constrain the political and fiscal space for further transition measures, reinforcing uneven outcomes over time.

Taken together, unequal exposure to and capacity to adapt to green and digital transitions form a self-reinforcing dynamic. Existing inequalities shape who can adjust to structural change, while the transitions themselves redistribute risks and opportunities in ways that can deepen those inequalities. Understanding how environmental and technological transformations interact with social, territorial, and institutional conditions is therefore critical for explaining why pressures identified in Chapter 5 persist across domains.

### 6.3 Institutional Interdependence Between Labour Markets, Skills, and Welfare

Labour markets, skills systems, and welfare institutions evolve in close interaction. Changes in employment structures, work organisation and industrial relations reshape skill demands and social protection needs, while the design and performance of education, training, and welfare systems feed back into labour-market participation, job quality, and inclusion. These interactions form a co-evolutionary dynamic in which institutions and labour-market outcomes adapt to each other over time, often in uneven and path-dependent ways.

Structural shifts in labour markets, including technological change, sectoral restructuring, and the expansion of non-standard forms of work, alter the stability and continuity of employment trajectories. Fragmented careers, intermittent employment, and platform-mediated work challenge education and training systems to provide flexible and timely learning opportunities, while simultaneously straining welfare systems that rely on stable contribution histories. Where skills provision and social protection fail to adapt, labour-market insecurity increases, reinforcing reliance on low-quality or precarious employment.

Skills systems play a pivotal mediating role in this dynamic. Education and training systems shape access to employment opportunities and the capacity to adjust to changing labour-market conditions. However, where systems are slow to adapt, unevenly resourced, or poorly aligned with labour-market change, skills mismatches can persist. These mismatches increase the risk of exclusion from stable employment and reduce incentives or capacity for continued learning, feeding back into labour-market segmentation and long-term insecurity.

Welfare institutions both respond to and shape these developments. Social protection systems mitigate income loss, health risks, and periods of labour-market transition, but they also influence work incentives, employment choices, and employer practices. Where coverage is limited or conditional on continuous employment, workers with fragmented careers face higher risks of insecurity. This can increase pressure to accept low-quality jobs and discourage investment

in training, reinforcing labour-market polarisation. Conversely, welfare systems that provide adequate and accessible protection during transitions can support mobility, skill acquisition, and more stable employment trajectories.

Over time, these interactions can lock systems into self-reinforcing patterns. Labour-market change generates new demands for skills and protection, while existing institutional arrangements constrain how effectively these demands are met. Where adaptation is partial or uneven, institutional responses may stabilise short-term outcomes while entrenching longer-term vulnerabilities.

## 6.4 Institutional Constraints and Governance Capacity

The extent to which cross-cutting dynamics lead to more inclusive or more unequal outcomes depends on governance arrangements, institutional capacity, timing, and path dependency. Institutions do not respond to structural change on a blank slate. Existing policy frameworks, administrative capacities, and historical legacies shape how pressures are absorbed, delayed, coordinated, or amplified. As a result, similar transformation pressures can produce divergent outcomes across contexts.

A recurring challenge across the impact areas is the fragmentation of responsibilities and policy instruments. Education and skills policies, labour-market regulation, social protection, climate action, and essential services are often governed through separate institutional logics, funding streams, and levels of authority. This fragmentation complicates coordinated responses to cross-domain challenges such as skills mismatches, eco-social vulnerabilities, or labour-market insecurity. Where coordination mechanisms are weak, interventions tend to address symptoms within individual sectors rather than underlying interaction patterns.

Institutional capacity varies across sectors, governance levels, and regions. Differences in administrative resources, expertise, data availability, and implementation capabilities influence whether policies reach intended groups and whether support can be delivered in a timely and accessible manner. In several impact areas, responsibilities for implementation are increasingly decentralised, while strategic steering and financial capacity remain uneven. Where capacity is limited or poorly aligned, well-designed measures may have uneven effects, reinforcing territorial disparities and social inequalities.

Timing and sequencing play a decisive role in shaping trajectories. Early and coordinated responses can prevent disadvantages from accumulating, while delayed or fragmented interventions allow pressures to intensify and spread across domains. Slow adaptation of education and training systems can entrench skills mismatches and labour-market exclusion, increasing long-term reliance on social protection. Delayed investment in climate adaptation or compensation can raise fiscal and social costs, narrowing the range of viable policy options over time.

Path dependency further constrains institutional responsiveness. Established contribution-based systems, regulatory categories, and funding models can stabilise existing arrangements but may limit flexibility in responding to new forms of work, changing skill demands, or emerging social risks. Incremental reforms may provide short-term stability while entrenching longer-term misalignments between institutions and evolving socio-economic realities.

Trust and legitimacy interact closely with governance capacity. Where institutional responses are perceived as inconsistent, inaccessible, or unfair, trust in public institutions can erode. Reduced trust may weaken policy take-up and political support, further constraining the ability to implement reforms. Conversely, timely, transparent, and credible interventions can strengthen legitimacy and expand the scope for coordinated action across domains.

## 7. Research and Innovation Priorities

This chapter translates the analytical insights from Chapters 5 and 6 into strategic research and innovation priorities for the STR-Partnership. While Chapter 5 identified key challenges and knowledge gaps within each impact area, and Chapter 6 clarified the cross-cutting dynamics that connect them, this chapter defines where research can most effectively strengthen the evidence base for informed policy development and implementation.

The Partnership's role is to fund and coordinate research that underpins effective policies, institutional adaptation, and evidence-informed interventions. Across all impact areas, challenges arise not only from socio-economic and environmental change, but also from gaps in how knowledge is translated into practice. A strategic priority is therefore to support research that strengthens the connection between evidence and action — including work that improves how policies and interventions are designed, tested, implemented, and evaluated under conditions of uncertainty and institutional complexity.

Each research priority is informed by the foresight-derived gaps identified in the impact-area analyses and by a review of existing research landscapes, including the scoping studies. This approach ensures that funding is directed towards unmet needs and systemic bottlenecks rather than duplicating ongoing initiatives. The priorities reflect intersections where transformation pressures and knowledge gaps converge, and where coordinated research efforts can add strategic value.

The structure of the priorities supports flexible call design. Section 7.1 presents cross-cutting R&I priorities that respond to the system-level dynamics identified in Chapter 6 and that require coordinated approaches across impact areas. Section 7.2 outlines impact area-specific priorities that address thematic gaps within individual domains. This dual structure enables funders to organise calls by impact area, by cross-cutting structural challenges, or by specific priority issues, while maintaining coherence within a shared strategic framework. This structure allows for flexible call design while maintaining coherence within a shared strategic framework.

### 7.1 Cross-cutting R&I Priorities

This section identifies research priorities that cut across all impact areas. For each cross-cutting intersection, it outlines the systemic context and specifies where research and innovation are required to strengthen the evidence base and support policy-relevant insight.

Across the impact areas, challenges are interconnected and often mutually reinforcing. Educational inequalities shape labour-market outcomes, income security, and health, while inequalities in income, health, and access to social protection in turn influence educational attainment and skill development. What appears as a driver in one domain may constitute an outcome in another. These feedback loops operate cumulatively over the life course and across generations.

The priorities below respond to these dynamics by identifying leverage points where research can clarify systemic interactions, inform more coherent policy design, and reduce the risk of unintended spillovers between sectors. This includes clarifying underlying normative assumptions, collective imaginaries of progress and prosperity, and cultural narratives, as well as competing interpretations of fairness and justice that shape policy design and public acceptance. Across all cross-cutting priorities, research is expected not only to deepen understanding but to translate insights into policy design, experimentation, and robust evaluation frameworks that increase the societal value of the Partnership's investments.

#### 7.1.1 Interrupting Self-Reinforcing Inequalities (*based on 6.1*)

Socio-economic inequalities accumulate across the life course through interconnected processes linking education, labour-market participation, income security, health, and access to social protection. Disadvantages in one domain reinforce disadvantages in others and contribute to intergenerational transmission of inequality, shaped not only by institutional arrangements but also by cultural norms, identity dynamics, and historically embedded patterns of exclusion. Fragmented employment trajectories, limited access to services, and occupational strain further entrench insecurity over

time. Research and innovation are therefore required not only to analyse these cumulative mechanisms, but to generate evidence that informs the design, testing, and evaluation of policy interventions aimed at interrupting self-reinforcing inequality trajectories.

The following research priorities have been identified:

- Intergenerational and multidimensional inequality transmission: Research should analyse how inequality is transmitted across generations and within households, including the interaction between migration, income flows, and welfare sustainability, as well as multidimensional and intersectional vulnerabilities. Building on this understanding, research should support the development and evaluation of policy instruments that address emerging and overlapping social and environmental risks, including new forms of vulnerability that are not yet adequately reflected in existing policy frameworks.
- Education-to-work trajectories and life-course transitions: Research should examine key life-course transitions, particularly from childhood to adulthood and from education to work, and analyse how foundational skills and educational pathways relate to long-term labour-market outcomes. It should model worker flows in a life-cycle perspective, identifying labour-market frictions and the social costs associated with these frictions across the EU. Longitudinal and comparative approaches should link educational trajectories, mobility patterns, and labour-market integration, while also examining the normative expectations and institutional role definitions that shape transitions to adulthood.
- Income security, social protection integration and social mobility: Research should investigate how fragmented benefit systems, income transfers, and service provision interact across life stages and how their integration can strengthen income security and social mobility. Particular attention should be given to how gaps in coverage, administrative complexity, and service fragmentation contribute to cumulative disadvantage. Research and innovation should inform integrated and accessible protection models that reduce long-term insecurity.
- Occupational health, work intensity and cumulative disadvantage: Research should analyse rising work intensity, occupational health risks, burnout, and work-life balance challenges in contemporary work environments, including the protection of non-work and learning time. Particular attention should be paid to how deteriorating working conditions in essential occupations reinforce cumulative socio-economic disadvantage and intergenerational inequality dynamics. These sectors are central to social cohesion and democratic functioning, as public service professions are closely linked to democratic models, political legitimacy, and citizens' trust in welfare institutions, and sustained strain within them may undermine public trust, service quality, and long-term societal resilience. Research should therefore examine the broader societal and democratic implications of deteriorating working conditions in essential occupations. Research should therefore examine not only structural drivers of occupational strain but also the broader societal, normative, and democratic implications of deteriorating working conditions in essential occupations.
- Green transition, wealth concentration and access to sustainable resources: Research should examine how green transitions affect wealth concentration and access to sustainable resources on the one hand, and socio-economic vulnerability, particularly among economically vulnerable and marginalised communities on the other hand. It should analyse how the distributional effects of environmental transformation may reinforce or mitigate cumulative inequality dynamics.

### **7.1.2 Supporting Equitable Adaptation to Green and Digital Change (based on 6.2)**

The green and digital transitions reshape economic structures, labour markets, and access to essential services, but their distributional implications remain insufficiently understood. Existing research gaps concern the identification of new vulnerabilities, the interaction between social protection and ecological transformation, barriers to reskilling, and the use of digital technologies in service provision. Addressing these analytical gaps is essential to inform transition pathways and reduce the risk that policies reinforce existing socio-economic inequalities in contexts where societal understandings of progress, prosperity, and justice may diverge.

- Distributional effects, eco-social vulnerabilities and social protection in the green transition: Research should analyse how green transitions affect wealth concentration, access to sustainable resources, and economically vulnerable and marginalised communities. It should identify new eco-social needs and vulnerabilities, including essential needs such as housing, mobility, water, and energy, and develop mapping tools that incorporate socio-technical transition risks across different geographical scales. Comparative and cross-national research should examine how welfare regimes adapt to ecological transformation and how social protection systems interact with environmental policy, including how competing cultural notions e.g. of progress, prosperity, social justice, solidarity, and sustainability interact with policy choices and public legitimacy. Further research is required on the limits of technology-led transition strategies, including unresolved tensions between climate objectives and growth-oriented economic models, and insufficient understanding of how consumption, production, and inequality are framed and addressed in current approaches.
- Reskilling, lifelong learning and responsibility for both in structural transformation: Research should examine structural barriers to reskilling and lifelong learning across gender, age groups, regions, and socio-economic backgrounds. It should analyse why existing education and training systems adapt slowly to labour-market change and how vocational education responds to green and digital transformation, including questions of social justice and power dynamics. Further research is needed on how responsibility for reskilling and lifelong learning is distributed between employers, public authorities, and social partners, and on the implications of treating reskilling and lifelong learning primarily as an individual responsibility.
- Digitalisation, AI and service provision in social protection and care: Research should analyse how digital technologies, including AI and data-driven systems, reshape the delivery of public services and institutional support mechanisms across sectors. Building on evidence from social protection and care systems, it should examine how digitalisation affects accessibility, quality, accountability, and user experience more broadly. Particular attention should be paid to risks of exclusion, administrative burden, and loss of trust, as well as to the governance frameworks required to ensure transparency and fairness under increasing digitalisation.
- Climate change and education systems under environmental stress: Research should address the underexplored impact of climate change on education systems across levels, from general education to vocational training and higher education. This includes analysing the effects of extreme weather events, infrastructure disruption, and environmental stress on student well-being and learning conditions. Further research is required on the organisation of education in the era of climate change, improved monitoring of climate education progress, and stronger research-policy collaboration in this field.
- Psychological and behavioural barriers to transformation: Research should investigate psychological barriers to climate adaptation and digital transformation and examine how perceptions, emotions, and behavioural responses shape societal engagement with transition processes.

### **7.1.3 Strengthening Institutional Alignment Across Labour Markets, Skills, and Welfare (based on 6.3)**

Labour markets, skills systems, and welfare institutions adapt to each other in path-dependent and mutually reinforcing ways. Changes in one domain reshape incentives, capacities, and constraints in the others, creating co-evolutionary dynamics over time. Education and skills systems are central to enabling adaptation to digitalisation, the green transition, and demographic change. However, persistent misalignment between evolving skill demands and existing education and training structures, uneven access to lifelong learning, and fragmented governance arrangements constrain system responsiveness. Research gaps remain regarding barriers to reskilling across socio-economic groups and life stages, the capacity of vocational and lifelong learning systems to respond to structural labour-market change, and the interaction between skills systems, welfare institutions, and employment trajectories over time. At the same time, pressures on educators, learners, and essential service occupations raise questions about institutional sustainability and well-being under intensified transformation. Addressing these gaps is essential for understanding how labour markets, skills systems, and welfare institutions can evolve in a coordinated and inclusive manner, and how underlying assumptions about work (including work-family relations), merit, and social contribution structure perceptions of fairness and shape

institutional reform trajectories. These interactions should be analysed not as sectoral reform issues but as co-evolutionary institutional dynamics shaping long-term system resilience.

- Skills systems, lifelong learning, governance and institutional responsiveness: Research should examine structural barriers to reskilling and lifelong learning across socio-economic groups, regions, and life stages, and analyse why education and training systems often adapt slowly to labour-market change. This includes comparative longitudinal research linking foundational skills and educational pathways to employment stability and labour-market outcomes, as well as evaluating strengths and weaknesses of existing lifelong learning systems. Further research is required on how vocational education responds to digital and green transformation, including questions of social justice and power dynamics, and the social valuation of different forms of skills and qualifications, and on how responsibility for reskilling is distributed between employers, public authorities, and social partners.
- Non-standard employment, platform work and social security in transformation contexts: Research should investigate how non-standard and platform-mediated forms of work reshape employment status, income stability, and access to social security. This includes evaluating platform-work regulation and its implications for employment status and protection coverage and the classification of work relationships. Further research is needed on the compensatory role of social security systems and their function in supporting labour markets during structural and green transitions.
- Social protection, welfare regimes and structural labour-market change: Research should analyse how social protection systems interact with ecological and labour-market transformation and how welfare regimes adapt to social-environmental risks. Comparative research is required to refine understanding of the functions of social protection in supporting adjustment to structural change and to overcome fragmentation in existing mapping efforts.
- Work organisation, institutional sustainability and political economy constraints in essential sectors: Research should examine how technological change and evolving forms of work organisation reshape institutional sustainability in essential sectors, including health, education, care, and justice. The focus should be on how organisational models, staffing structures, skill requirements, and regulatory frameworks adapt to intensified transformation pressures. Particular attention is required to the political economy constraints that shape reform capacity and influence public legitimacy of reform efforts, including fiscal limits, labour market structures, and governance arrangements. Comparative research should analyse enabling and constraining conditions affecting labour, skills, and welfare institutions, with a view to identifying institutional configurations that may support long-term resilience and workforce stability.

#### **7.1.4 Institutional Constraints and Governance Capacity (based on 6.4)**

Governance capacity, institutional timing, and path dependency function as meta-dynamics that shape whether cumulative inequalities, uneven transition pressures, and co-evolutionary labour–skills–welfare interactions are amplified or disrupted over time. Europe’s transition towards climate neutrality is shaped not only by technological feasibility but by the institutional capacity to manage its distributional, territorial, and political consequences. Climate policies increasingly affect housing, mobility, energy use, employment, and local infrastructure, making questions of accountability, responsibility allocation, compensation, and administrative capacity central to perceived fairness and legitimacy. Research gaps persist regarding multi-level coordination, the embedding of fairness in governance practice, participatory mechanisms, trust dynamics, and the political economy constraints that shape reform sequencing. Addressing these gaps is essential to understanding how climate ambition, social cohesion, and institutional capacity can be aligned over time.

- Multi-level coordination, responsibility allocation and governance capacity: Research should analyse how responsibilities for fairness and climate transformation are distributed across local, national, and European levels, and how accountability mechanisms link implementation to broader policy frameworks. This includes examining how coordination across governance levels affects territorial disparities, policy coherence, and the scalability of local experimentation. Comparative research is required to assess how different governance configurations shape administrative capacity and fairness outcomes.

- Trust, legitimacy and embedding fairness in climate governance: Research should examine how perceptions of fairness, transparency, and responsibility influence trust in climate policies and institutions. This includes analysing how disinformation, polarisation, and geopolitical tensions affect public commitment to climate neutrality, and how visible compensation and fairness mechanisms shape social cohesion. This also requires examining how concepts of fairness, responsibility, and solidarity are interpreted across different cultural and historical contexts. Further research is required to develop robust indicators and consolidated frameworks for embedding and measuring fairness in sustainability governance across sectors and policy instruments.
- Participation, actor coalitions and intergenerational coordination: Research should investigate barriers to participation in sustainability governance and assess how civil society organisations and actor alliances influence institutional decision-making. This includes analysing mechanisms that address intergenerational balance of interests and power asymmetries in transformative policymaking. Comparative approaches should examine the conditions under which participatory governance arrangements enhance legitimacy and policy durability.
- Knowledge exchange, evidence integration and policy learning: Research should analyse how evidence, expertise, and knowledge communities interact with climate policy processes, and how different approaches to knowledge exchange facilitate participatory and evidence-based governance. This includes examining how trust is built and retained across knowledge communities and how institutional arrangements shape learning and adaptation under conditions of uncertainty.
- Institutional adaptation, reform sequencing and political economy constraints: Research should examine how institutional lock-in, political economy constraints, fiscal pressures, and reform sequencing affect the capacity to implement climate policies while maintaining fairness and efficiency. This includes analysing tensions between democratic governance and economic efficiency in sustainability policymaking and conducting comparative research on enabling and constraining conditions affecting long-term institutional adaptation.

## 7.2 Impact area-specific R&I Priorities

This section presents a list of briefly described research priorities that are **impact-area-specific**. While organised by impact area, the priorities below should be understood in interaction with the cross-cutting dynamics identified in Chapter 6 and the systemic priorities set out in Section 7.1.

### 7.2.1 Modernising Social Protection Systems and Essential Services *(based on 5.1)*

Social protection systems and essential services face mounting pressure as demographic change, labour-market transformation, climate risks, and digitalisation interact and intensify existing vulnerabilities. Systems designed around stable employment patterns and predictable risk profiles must now respond to heterogeneous life courses, overlapping insecurities, and increasing institutional complexity. While these challenges are widely recognised, integrated evidence on how social protection systems can adapt to compounded risk, coordinate across domains and at the same time, maintain legitimacy remains limited. Research and innovation are therefore required to generate evidence that can inform efforts to strengthen adequacy, accessibility, resilience, and long-term sustainability.

- Labour-market fragmentation and misalignment with contributory protection systems: Research should examine how the expansion of non-standard, platform-mediated, and fragmented employment affects access to contributory schemes, continuity of entitlements, and income adequacy across life stages. Particular attention should be paid to young workers, those with interrupted careers, and individuals in precarious employment. Research and innovation should inform the development and evaluation of protection models that reconcile labour-market flexibility with stable income security and inclusive coverage.
- Eco-social and overlapping vulnerabilities under compounded risk: Research should analyse at new geographical scales how climate change, housing insecurity, health risks, and service disruptions interact and accumulate, particularly for disadvantaged groups. This includes developing integrated analytical frameworks that move beyond siloed treatment of social and environmental risks and that critically assess whether welfare concepts and comparative

models shaped by industrial-capitalist assumptions remain adequate under ecological transformation. Research and innovation should generate evidence to support the design and evaluation of social protection arrangements that explicitly address eco-social risks across essential needs (for example housing, mobility, water, energy) and ensure resilience under prolonged uncertainty.

- Digitalisation, access, and algorithmic governance in welfare systems: Research should investigate how automated decision-making, data-driven tools, and digital interfaces reshape access to social protection and essential services. Particular attention should be given to digital exclusion, transparency, algorithmic bias, and user experiences. Research and innovation should contribute to testing and evaluating tailor-made digital governance models that enhance efficiency while safeguarding inclusive accessibility, accountability, and trust-building.
- Institutional coordination, fiscal sustainability, and adaptive capacity: Research should examine how multi-level governance arrangements, fiscal constraints, and institutional configurations affect the responsiveness and sustainability of social protection systems. Comparative research should assess how different configurations manage crisis exposure, demographic pressures, and long-term adaptation including social coordination mechanisms in intergenerational balance of interests. Research and innovation should inform reform pathways that balance adequacy, fiscal sustainability, and institutional coherence.
- Trust, legitimacy, inclusion, and accessibility under complexity: Research should analyse how administrative burden, service fragmentation, and perceived fairness influence take-up, compliance, and public confidence in social protection systems. Particular attention should be paid to how institutional design and delivery models affect legitimacy under sustained transformation pressures including how narratives and moral expectations around solidarity, deservingness, and mutual obligation shape trust and user behaviour. Research and innovation should support the development and evaluation of governance and service models that strengthen transparency, accessibility, and democratic anchoring.

### 7.2.2 Shaping the Future of Work (based on 5.2)

Labour markets in Europe are undergoing interrelated transformations driven by digitalisation, automation and emerging technologies, demographic change, and organisational restructuring. These shifts are reshaping employment forms, skill requirements, and managerial practices while challenging institutional frameworks designed around stable employment relationships. Non-standard and hybrid work arrangements are expanding, algorithmic systems increasingly mediate labour processes, and work intensity and volatility are rising. Despite extensive research, important knowledge gaps remain regarding how digitalisation, organisational change, and institutional adaptation interact over time and across sectors. Research and innovation are therefore required to generate knowledge that underpins inclusive, resilient, and sustainable labour-market transformation.

- Governance of algorithmic and technology-mediated work: Research should examine how automation, AI systems, and algorithmic management used by work organisations reshape task composition, managerial control, worker autonomy, and surveillance across sectors. Particular attention should be paid to ethical use of technology, protection of human agency, accountability mechanisms, and enforcement challenges in platform and digitally mediated work. Research and innovation should inform regulatory and institutional frameworks capable of governing technology-driven transformations while safeguarding workers' rights, wellbeing and health.
- Institutional adaptation to heterogeneous employment forms: Research should analyse how labour law, collective bargaining, and institutional arrangements can evolve to reflect increasingly diverse employment forms, including hybrid and non-standard work. This includes examining intersecting vulnerabilities, integration into productive labour markets, and the political economy constraints shaping institutional reform, as well as how evolving norms of work (including the work-family relation), merit, and social recognition influence institutional definitions of entitlement, contribution, and protection. Research and innovation should support comparative evaluation of policy approaches that foster inclusive labour markets under conditions of structural volatility.

- Organisation of work, sustainability, and occupational health: Research should investigate how organisational practices, ecosystem interactions, and sectoral restructuring affect job quality, work intensity, occupational health, and work–life balance. Particular attention should be paid to the sustainability of vocational public service occupations in (health) care, education, justice and police and to the protection of non-work time including care work and learning time under accelerated work rhythms. Research and innovation should inform organisational and sectoral strategies that promote sustainable, healthy, and socially desirable forms of work.
- Corporate governance, ownership models, and alternative productive systems: Research should explore transformations in corporate governance, sustainable management systems, and alternative ownership models, including cooperative, hybrid, and non-profit arrangements. This includes examining worker participation, employee rights, and the broader economic and social impacts of alternative value production systems. Research and innovation should assess the durability, scalability, and institutional implications of such models within evolving labour-market contexts.
- Reconceptualising the value and boundaries of work: Research should critically examine changing categories, measurements, and societal perceptions of work, including unpaid, reproductive, domestic, and digital forms of labour. This requires historical and philosophical reflection on how work has been defined, valued, and distinguished from non-work, and how these categories shape institutions, rights, and social recognition. It should reassess how work is valued economically and socially and how shifted boundaries between work and non-work reshape labour-market institutions as well as family life. Research and innovation should contribute to developing renewed conceptual and analytical tools capable of capturing evolving forms of work and their social significance.
- Greening labour markets and the triple transition: Research should examine how the green transition interacts with digitalisation and demographic change in reshaping labour markets across sectors. This includes assessing institutional capacities for embedding lifelong learning, supporting skill transitions, and fostering co-creation between economic, societal, and environmental stakeholders. Research and innovation should contribute to understanding how labour markets can adapt to environmental transformation while promoting sustainability and inclusiveness.

### 7.2.3 Education and Skills Development *(based on 5.3)*

Education and skills systems are positioned at the intersection of digital, green, demographic, and social transformations. Rapid technological change and the green transition are reshaping skill demand, while persistent inequalities and uneven institutional capacity constrain system responsiveness. Formal education and vocational training often adapt slowly to evolving labour-market conditions, increasing the risk of skills mismatches and exclusion. At the same time, well-being challenges, climate-related disruptions, and governance fragmentation raise questions about the long-term sustainability of prevailing education models. Research and innovation are therefore required to generate evidence and tools that underpin adaptive, inclusive, and resilient education and skills systems.

- Aligning education systems with digital and green skill transformation: Research should analyse how digitalisation, artificial intelligence, and the green transition reshape occupational profiles, transversal skills, and vocational training requirements. This includes comparative and longitudinal approaches linking foundational skills and educational pathways to labour-market outcomes. Particular attention should be paid to how the human–machine interface is designed within education and training systems, including how interactions between learners, educators, and AI systems can remain acceptable, ethically grounded, and complementary to human capabilities. Further research is needed on radical transformation needs in vocational education and on the redesign of curricula to address both technical and interdisciplinary sustainability competences. Research and innovation should support curriculum reform, digital literacy development, and adaptive training models capable of responding to structural labour-market change.
- Lifelong learning systems and adult transitions across the life course: Research should examine barriers to lifelong learning across socio-economic groups, age cohorts, and regions, including accreditation systems and incentive structures at European level. Particular attention should be paid to transitions from childhood to adulthood, gender and family issues, mid-career reskilling, and the implications of demographic decline for participation in learning

systems. Research and innovation should contribute to designing inclusive and flexible lifelong learning architectures that enhance mobility and resilience across life stages.

- Inequality, migration, and inclusive educational pathways: Research should investigate how socio-economic background, migration processes, and regional disparities shape educational trajectories and system transformation. This includes analysing how migration experiences can inform the redesign of educational goals and integration processes, and how education systems can foster inclusive social well-being beyond school boundaries. Research and innovation should support models that mitigate inequality while strengthening social cohesion.
- Climate change and the transformation of education systems: Research should examine how climate change affects education infrastructure, governance, and learning environments across all levels of education. This includes analysing disruptions caused by extreme weather events, environmental health risks, and the need for improved monitoring and reporting of climate education progress. Research and innovation should contribute to systemic adaptation strategies that integrate sustainability across curricula, governance, and infrastructure.
- Governance, leadership, and institutional adaptation in education systems: Research should analyse how leadership models, governance arrangements, and institutional incentives shape the capacity of education systems to respond to systemic change. This includes examining teachers' democratic roles in transitions, leadership mindsets under transformation pressures, and the unintended consequences of standardisation and performance measurement. Research and innovation should inform governance and leadership models that enhance institutional adaptability and public trust.
- Well-being, resilience, and pedagogical transformation: Research should investigate the long-term implications of rising mental health challenges, pedagogical pressures, and performance-driven models for learners and educators. This includes exploring reflective, feminist, and relational pedagogical approaches; new ways of integrating of humanities, arts and ethics; researching psychological barriers to transformation; and interrogating lasting pedagogical changes following the pandemic. Research and innovation should contribute to developing sustainable education models that strengthen well-being, resilience, and social cohesion.

#### 7.2.4 Fair Transition to Climate Neutrality (based on 5.4)

The transition towards climate neutrality is increasingly shaped by its social, territorial, and distributional consequences. Climate policies affect housing, energy use, mobility, employment, and infrastructure, raising politically salient questions about fairness, responsibility, and legitimacy. Unequal exposure to climate impacts and uneven adaptive capacity risk reinforcing socio-economic inequalities and weakening public support for climate action. At the same time, governance fragmentation, fiscal tensions, and cultural contestation complicate implementation. Research and innovation are therefore required to generate evidence and analytical frameworks that inform efforts to operationalise fairness, strengthen institutional capacity, and sustain democratic legitimacy under long-term transformation pressures.

- Distributional effects and socio-economic impacts of climate policies: Research should analyse how climate mitigation and adaptation policies affect wealth concentration, access to sustainable resources, taxation systems, and economically vulnerable communities. Particular attention should be paid to global supply dynamics of key components for green and digital infrastructure and their distributional implications. Research and innovation should inform fiscal and redistributive instruments capable of aligning climate ambition with social fairness.
- Unequal exposure, adaptive capacity, and territorial disparities: Research should investigate how climate policies and impacts operate across diverse territorial, socio-economic, and administrative respectively institutional contexts and how interventions can be aligned across these contexts. This includes examining how institutional capacity influences implementation outcomes and how successful place-based models can be replicated or scaled. Research and innovation should strengthen understanding of adaptive capacity and solidarity mechanisms across regions.
- Governance responsibility, coordination, and fairness implementation: Research should analyse how responsibility for fairness is allocated across governance levels with a particular focus on the relationship between local implementation and national decision-making and the accountability mechanisms linking local action to national

frameworks. It is still an open question how coordination across these levels can prevent fragmented or uneven outcomes. This includes examining tensions between democratic governance and economic efficiency, as well as the institutional mechanisms required to embed fairness into everyday governance practice. Research and innovation should generate analytical frameworks and empirical evidence that can inform the translation of formal fairness commitments into operational decision-making. Limited understanding of whether local implementation shifts responsibility away from national decision-making. Lack of evidence on accountability mechanisms linking local action to national frameworks.

- Participation, inclusion, and democratic innovation in transition governance: Research should examine how participatory mechanisms can move beyond symbolic inclusion and meaningfully involve marginalised and vulnerable groups and civil society actors. This includes analysing barriers to participation, power dynamics, and democratic innovations that mitigate polarisation. Research and innovation should develop participatory frameworks as democratic innovations that may enhance legitimacy in policy making and shared ownership of transition pathways.
- Trust, legitimacy, culture, and disinformation: A focus should be on how trust and legitimacy (including cultural, emotional and intergenerational dimensions of policy legitimacy) are built and sustained during long-term transitions. An important aspect of this is how divergent values, worldviews, and lived experiences condition the way fairness is perceived and enacted across European societies. Research should also investigate how these perceptions of fairness and responsibility, but also social norms and cultural identities then shape public support for climate policies. This includes analysing how symbolic politics and structural lock-ins mediate the uptake and impact of transformation policies and how disinformation, polarisation, and geopolitical tensions affect commitment to climate neutrality. Moreover, evidence is needed to assess the role of trust in sustainability governance, and on how media storytelling and public narratives frame conflicts, trade-offs, and responsibility for transition costs. Research and innovation should develop indicators and strategies to strengthen democratic anchoring and long-term social cohesion.
- Paradigm shifts, justice frameworks, and long-term transformation: Research should explore how dominant economic and governance paradigms shape transition trajectories and how alternative justice frameworks, long-term perspectives, and socio-cultural pathways can be conceptualised and operationalised. This includes examining tensions between growth-oriented models and climate neutrality and integrating intergenerational and non-human interests into policy frameworks. This also involves critical examination of dominant economic paradigms and the conceptual foundations of growth, prosperity, and human–nature relations. From a more socio-cultural perspective, research is needed on how to create cultures of “good ancestors” and how to think interests and values of human and non-human species together.

### 7.3 Types of Research Needs and Evidence Architecture Across Impact Areas

Across all impact areas, the identified priorities point to different stages of knowledge maturity. The type of research required therefore depends on whether a challenge is insufficiently described, poorly understood in terms of underlying mechanisms, or already sufficiently analysed to allow for solution development and testing. Clarifying this distinction is essential to ensure that funded research meaningfully contributes to policy-relevant evidence and avoids both duplication and premature solutionism, including by making explicit what counts as relevant evidence for decision-making in different institutional and societal contexts.

In several domains, foundational descriptive and mapping work remains necessary. Where the scale, distribution, or evolution of emerging risks and inequalities is not yet sufficiently documented, research must first establish robust empirical baselines. This includes systematically identifying new vulnerable groups, tracing diverse life-course trajectories, mapping eco-social risks across territorial levels, and updating monitoring systems as transformation processes unfold. Strengthening comparative datasets, improving data harmonisation, and conducting comprehensive state-of-the-art reviews are preconditions for targeted and proportionate policy responses. Without reliable descriptive evidence, policy design risks misdiagnosing the nature or magnitude of the problem.

In other areas, the core challenge lies not in measurement but in understanding mechanisms and interaction effects. Even where problems are visible, the causal pathways linking digitalisation, decarbonisation, demographic change, institutional reform, and social inequality remain complex and often non-linear. Explanatory and mechanism-oriented research is therefore required to analyse feedback loops, political economy constraints, institutional lock-ins, intersecting vulnerabilities, and the role of norms and identity dynamics in shaping outcomes. Developing integrative analytical frameworks capable of capturing circular causation across domains is essential to avoid siloed interpretations and unintended spillovers. Comparative and context-sensitive research designs are particularly important for understanding why similar pressures generate divergent outcomes across governance systems.

Where challenges and causal mechanisms are comparatively well understood, the research agenda increasingly shifts towards solution-oriented and evaluative work. In these cases, research should focus on developing, testing, and rigorously evaluating policy instruments, governance models, and social interventions under different institutional and territorial conditions. This includes modelling long-term scenarios, stress-testing systems under demographic or crisis pressures, and assessing trade-offs and distributional impacts across reform pathways. Robust indicator systems are required to measure trust, legitimacy, fairness, and resilience in governance. Evaluation-oriented research strengthens the feedback loop between knowledge production and institutional learning, enabling policymakers to refine interventions based on systematic evidence rather than assumption.

Finally, across all stages of knowledge production, the quality, relevance, and impact of research depend on how knowledge is generated and shared. Methodological diversity and interdisciplinarity are therefore framed as means to improve explanatory robustness, societal legitimacy, and policy uptake, rather than as ends in themselves. Complex transformation challenges require participatory, transdisciplinary, and reflexive research designs that bring together researchers, public authorities, civil society actors, and affected communities. Qualitative, interpretive, critical, and feminist approaches contribute to analysing meaning structures, ethical tensions, historical trajectories, and power relations that shape transformation pathways. At the same time, effective knowledge exchange and mutual trust between different knowledge communities are necessary to ensure that research findings are credible, usable, and responsive to societal needs.

## 7.4 From Knowledge to Transformation: Partnership and Uptake Architecture

The impact of the partnership will depend not only on the quality of research funded but on its capacity to inform, shape, and be embedded in policy and practice. Across impact areas, workshop contributions highlight the importance of moving beyond symbolic participation and ensuring that research processes are closely connected to institutional realities and societal needs. Co-creation between researchers, policy actors, civil society organisations, and other stakeholders can enhance both the relevance and the legitimacy of research outcomes, provided that participation goes beyond tokenistic inclusion and addresses power asymmetries and barriers to engagement and accommodates varying levels of expertise and cultural norms. Structured stakeholder involvement, meaningful inclusion of marginalised groups, and improved communication channels between public authorities, NGOs, and knowledge communities increase the likelihood that research findings translate into actionable change.

Ensuring policy uptake further requires attention to institutional capacity and governance learning. Research results must be translated into formats and narratives that resonate with decision-makers' priorities, including concerns related to fiscal stability, security, and social cohesion. Strengthening knowledge exchange mechanisms, developing specific tools to adapt technological and policy innovations to social realities, and fostering durable alliances across institutions can support more systematic integration of evidence into policy processes. This includes reflecting on how evidence is defined, valued, and mobilised within political contexts, and how institutional settings can be redesigned to engage explicitly with conflicting interests and value contestation rather than assuming consensus around "the evidence". By improving the pathways through which evidence informs decision-making, the partnership can enhance the durability and effectiveness of transformation strategies.

Finally, translating research into transformation requires structured experimentation, piloting, and scaling. Comparative testing of policy instruments, democratic innovations, and governance models across territorial and socio-political

contexts can generate practical knowledge about what works under which conditions. Creating enabling environments for community-led initiatives and assessing the replicability and scalability of successful models are essential for moving from isolated experiments to systemic change. Embedding evaluation from the outset, including the systematic assessment of trade-offs and long-term impacts, strengthens institutional learning and supports adaptive governance under conditions of uncertainty. Through coordinated piloting, evaluation, and replication, the partnership can contribute to generating knowledge on resilient and transferable transformation pathways across Europe.

## 8. Strategic Use, Implementation and Further Development of the SRIA

The SRIA is conceived as a living strategic instrument that guides programming, supports coordination across partners, and ensures that R&I activities remain aligned with evolving societal needs and policy priorities. It provides a shared reference framework for planning, implementation, monitoring, and continuous adaptation. The strategic ambition of the Partnership is to fund and coordinate research that strengthens the capacity of European societies to transform knowledge into tested, evaluated, and scalable policies and interventions. In this sense, the SRIA does not prescribe transformation itself; rather, it guides research investment in ways that enhance the quality, relevance, and practical uptake of evidence for policy and institutional decision-making.

The Partnership understands itself as an evolving and learning collaboration. Given the long-term and transformative nature of the challenges addressed, the SRIA is not designed as a fixed blueprint with fully predetermined activities and milestones far into the future. Instead, it establishes strategic direction, analytical foundations, and priority areas, while allowing programming instruments and implementation modalities to adapt over time in response to new evidence, emerging risks, and policy developments. This adaptive orientation strengthens relevance, resilience, and impact under conditions of uncertainty.

### 8.1 Logic and Use of the SRIA

The SRIA informs strategic programming while leaving room for contextual adaptation and iterative refinement. It:

- Guides strategic programming, including the design of calls, topics, joint actions, pilots, and cross-cutting initiatives.
- Provides a common reference point for all participating funders, ministries, and implementing bodies when shaping national and European R&I agendas.
- Supports alignment of national strategies by offering a shared analytical and priority-setting framework (based on proposal's emphasis on coordination and alignment).
- Ensures that R&I investments address the transformation needs identified through foresight and scoping studies.
- Helps stakeholders to coordinate efforts, avoid duplication, and identify opportunities for collaboration.
- Offers a transparent rationale for why certain themes, approaches, or target groups receive priority in programming.
- Provides orientation for capacity-building, experimentation, and social innovation, ensuring coherence between research, policy pilots, living labs, and community-based initiatives.
- Serves as the basis for joint work programmes and multi-annual planning cycles within the Partnership.

While the SRIA provides strategic stability, operational priorities may evolve across programming cycles. This balance between long-term direction and adaptive implementation reflects the Partnership's commitment to learning and responsiveness rather than rigid pre-specification.

## 8.2 Monitoring and Impact Orientation

The Partnership's monitoring approach reflects its adaptive and learning-oriented character. Rather than focusing exclusively on predefined outputs, monitoring is designed to support reflection, adjustment, and cumulative impact over time.

The Partnership could consider:

- establishing a monitoring approach that combines qualitative and quantitative indicators, tracking for instance:
  - generation of new comparative evidence
  - stakeholder engagement and co-creation
  - contributions to policymaking and practice
  - progress on social innovation and experimentation
  - capacity-building effects
  - improvements in cross-country comparability and research alignment
- identifying KPIs, where appropriate, following SMART principles;
- introducing learning loops so monitoring results inform future programming;
- applying reflexive monitoring to track how research practices, participation, and governance evolve;
- agreeing on regular reporting formats to ensure transparency and accountability.

Monitoring is thus conceived not only as a compliance mechanism but as a tool for collective learning, enabling the Partnership to refine priorities, instruments, and approaches over time.

## 8.3 Governance and Updating Process

The Partnership could consider:

- treating the SRIA as a living document that is periodically reviewed and updated;
- aligning SRIA updates with governance cycles or multiannual work programmes;
- basing updates on foresight insights, monitoring results, stakeholder feedback, and policy developments;
- using participatory and transparent processes for revisions;
- keeping the long-term direction stable while allowing programming priorities to evolve dynamically;
- establishing mechanisms for integrating emerging issues (e.g., new shocks, technologies, geopolitical changes).