

OECD Regional Development Studies

Regions in Industrial Transition 2023

NEW APPROACHES TO PERSISTENT PROBLEMS



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Foreword

Beginning in 2018, the OECD and the European Commission's Directorate General for Regional and Urban Policy (DG REGIO) embarked on a Pilot Action as an experiment to learn what happens when policy makers: 1) expand their thinking on pathways to enhance innovation as a driver of regional development; and 2) are given the opportunity to take actions that would usually not be possible under the constraints of existing governance arrangements, such as regulations or budget frameworks, or embedded policy practices that may stymie innovative programme design. This experiment targeted regions in industrial transition and challenged them to rethink their approach to innovation policy and smart specialisation strategy (S3) design and implementation.

The first phase (2018-2019) of this collaboration focused on a diverse set of policy dimensions that could enable regions or countries, through greater innovation, to better support industrial transition. These dimensions included: jobs and skills of the future; entrepreneurship and SME support; innovation and innovation diffusion; a just (and green) transition to carbon neutrality; greater well-being and inclusiveness. With the participation of ten pilot regions and two pilot countries selected by the European Commission, a series of workshops explored the potential that each of these drivers had to promote innovation as a means to advance the development of regions in industrial transition. Participating regions and countries then developed and implemented a High Impact Action, with the support of the European Commission, in order to pilot new and experimental approaches to the design, implementation and governance of innovation programming to advance their industrial transition objectives.

In the final phase of this institutional collaboration (2022-2023), the OECD, with the support of the European Commission, worked with eight of the ten original regions and the two original countries to identify whether or not the experimental processes demonstrated potential for advancing innovation initiatives and, in turn, for advancing industrial transition.

This report provides a synthesis of the findings from this final phase. It builds on work from the first phase of the Pilot Action, including questionnaire responses from each of the Pilot Action participants, stakeholder interviews with each region and country, in-depth desk research, and OECD work in other areas such as multi-level governance and factors generating territorial divides in trust in government.

The report highlights policy makers must address industrial transition challenges. It is complemented by case studies exploring the experimental nature of each of the ten High Impact Actions developed as part of the Pilot Action, and how experimental governance and programme pilots support industrial transition, innovation and smart specialisation.

This report was developed as part of the Programme of Work of the OECD's Regional Development Policy Committee (RDPC), a leading international forum in the fields of regional, urban, and rural development policy and multi-level governance, which is served by the Centre for Entrepreneurship, SMEs, Regions and Cities (CFE). The RDPC emphasises the importance of multi-level governance and place-based approaches that are tailored to regional and local needs. The report was approved by the Regional Development Policy Committee through written procedure on 15 September, 2023 (CFE/RDPC(2023)/15).

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This report was prepared by the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), led by Lamia Kamal-Chaoui, Director, and is part of the programme of work of the Regional Development Policy Committee.

The report is a synthesis of the findings from work with eight regions and two countries in industrial transition that developed High Impact Actions – initiatives applying experimental governance arrangements or programming – to advance along their growth trajectories. It originates in work undertaken in 2018-2019 under a European Commission sponsored project “Pilot Action on Regions in Industrial Transition: The Peer-learning Exercise”, that culminated in the OECD report *Regions in Industrial Transition: Policies for People and Places*. The financial contributions and support from the Directorate-General for Regional and Urban Policy (DG REGIO) are gratefully acknowledged.

The OECD Secretariat would particularly like to thank the local teams and their leaders in each participating region and country for their commitment to this project since its inception and for their willingness to share their experiences and High Impact Actions: Cantabria (SP), Centre-Val de Loire (FR), East and North Finland (FI), Grand-Est (FR), Greater Manchester (UK), Hauts-de-France (FR), North Middle Sweden (SE), Wallonia (BE), and Lithuania and Slovenia.

The project was co-ordinated by Sandra Jolk, under the supervision of Maria Varinia Michalun, Head of the Governance and Strategic Planning Unit in the Regional Development and Multi-level Governance Division in CFE, led by Dorothée Allain-Dupré. The report was developed by Maria Varinia Michalun, Luca Tacconi and Geoff Upton, with contributions from Sandra Jolk. The High Impact Action case studies were drafted by Hyunjoon Cho, Sandra Jolk, Nikos Patias, Matteo Schleicher, Luca Tacconi, and Geoff Upton. The report benefited from additional comments of Rüdiger Ahrend, Andrés Fuentes Hutfilter, Paolo Veneri, Stephan Visser and YingYin Wu. Our thanks also goes to Eric Reese for his support in the design and facilitation of the peer-to-peer workshop and international forum that contributed to the findings of this project and to Pedro Marques of INGENIO (joint research centre of the Spanish National Research Council and the Universitat Politècnica de València) for his insights into experimental governance.

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Executive Summary

Among OECD member countries, per capita income gaps have declined over the past 20 years, however, gaps between the wealthiest and poorest regions (TL3) within many countries have grown. In 2022, 70% of the OECD population lived in countries where regional income inequality was growing. This is of particular relevance for residents of regions in industrial transition, which tend to have lower GDP per capita than national averages, experience low GDP growth and have lower productivity levels.

Industrial transition has directly affected regional labour market opportunities and productivity for decades. For example, in North East England the number of manufacturing sector jobs fell by 51% between 1996 and 2022. In the United States, 75% of the workers in the Rust Belt were employed in the steel, automotive and rubber industries in 1950 but only 55% in 2000, and in Germany's Ruhr area, the substantial decline in the manufacturing industry from 1964 to 2014 was only partially offset by an increase in service sector jobs. Indeed, in 2020 the Ruhr area still suffered from significantly above-average unemployment levels – 10.1% versus 6.0% in the country – and a weak knowledge-intensive economy. While inequalities in regional GDP per capita in part reflect differences in industrial structures, as noted in the OECD *Regional Outlook 2023*, in 2019, around 25% of productivity differences across regions within OECD countries were due to differences in productivity within the same sectors, highlighting untapped potential to boost productivity, and in turn, income.

It is well-established that industrial transition processes can be supported through innovation. Labour-augmenting innovation can boost productivity levels in industrial regions, creating new job opportunities and wages, and preventing such opportunities from being concentrated in certain, often metropolitan, regions. This may explain why innovation-based activities have been the focal point of most industrial transition initiatives in recent years. Yet, such initiatives have tended to place a heavy emphasis on research and development (R&D) and technology-based innovation, which may provide an imperfect solution for regions in industrial transition, which typically have specific development characteristics. For instance, such regions frequently have an industrial heritage and a solid economic base that can be built upon, but must also contend with a business environment that is dominated by micro, small and medium enterprises. They also grapple with socio-economic and well-being outcomes that tend to be below national averages. Poor economic performance over time can also be a contributing factor to declining trust in government, which can affect democratic outcomes.

The persistence of challenges faced by regions in industrial transition suggests that policy makers may need to reconsider the pre-conditions required to support effective industrial transformations, and to what extent new governance arrangements could help ensure their successful execution. This report highlights the value of applying an experimental approach to governance arrangements and policy design when addressing industrial transition. It shows that experimentation in policy and programme design can help policy makers help generate new ideas, and test innovative approaches to the industrial transition, as well as learn from and build on successes and failures. Furthermore, it underscores the importance of foundational governance arrangements – including framework conditions, strategic programming, and stakeholder engagement – being in place in order to accomplish transition objectives.

Key messages

It is essential to recognise the broader societal impacts of regional industrial transitions

- **There is no single definition of a region in industrial transition.** However, they are often former industrial or manufacturing powerhouses, tend to perform below the national average across a variety of socio-economic and well-being indicators, including GDP growth and GDP per capita as well as unemployment, tertiary education attainment, and life expectancy.
- **Long-term economic decline, poor short term labour market outcomes, and unequal access to quality public services** – all characteristics of regions in industrial transition – **are contributing factors to territorial differences in trust in government.** The low level of institutional trust that these factors can generate, in turn, is often revealed in voting patterns that may affect democratic outcomes. This makes it imperative that regions in industrial transition not only carry out a successful industrial transformation, but do so in a way that imposes minimal costs to communities.

Industrial transition is not linear and requires a systemic or integrated approach to be successful.

- **Creating space for regions in industrial transition to apply a broad definition of innovation to their programming and funding opportunities is key to success.** Frequently, the industrial and administrative profile of these regions does not lend itself to a heavy emphasis on R&D or technology-driven innovation. They could gain more by advancing a combination of technological, business model, societal and/or social, and public sector innovation. Using an experimental approach to governance and programming can offer scope to test new funding models or support changes in business or production models that contribute to economic and sustainability goals in tandem. This was the case in East and North Finland, for example, where the region's experimentation with a new funding mechanism helped to expand the scope of innovation among enterprises in the regional forestry value chain. Ideally, such policy experiments should be given sufficient time to bear fruit, so that policy makers and other stakeholders can properly evaluate the potential merits of scaling the initiative up or out.
- **While innovation and innovation diffusion are key drivers of industrial transition, policy makers are more likely to succeed with interventions that not only advance innovation, but also support at least one or two other basic transition dimensions:** such as jobs and skills, SMEs and entrepreneurship, a just transition to carbon neutrality, inclusive growth or smart specialisation.
- **Successful transition requires bringing a variety of public and non-governmental stakeholders on board and then aligning the various objectives, priorities and initiatives among these groups,** and particularly among policy sectors, with overarching industrial transition aims. It also requires synchronising the objectives and priorities of different levels of government. Bringing a wide variety of stakeholders into the process of designing and implementing industrial transition initiatives can help to build ownership across sectors and among levels of government, while also generating goodwill and strengthening political support for experimentation. In the Greater Manchester region (U.K.), for example, the Good Employment Charter initiative included an extensive co-design and co-implementation process with local employers to help define a collective vision of good employment. The process encouraged a wide range of local businesses to adhere to the Charter's criteria and improve their own employment practices, thereby supporting economic inclusion across the region. However, in order for stakeholders to collaborate effectively on such initiatives, cross-sectoral and inter-governmental co-ordination mechanisms need to be in place.
- **Smart specialisation supports industrial transition by helping policy makers focus on the natural (economic) endowments of their regions,** building on these, and using them to focus their development and investment activities. Experimental approaches and smart specialisation

can dovetail clearly in policies targeting support for industrial SMEs, and advancing sustainability and inclusivity aims. For example, in the Grand Est (France), the experimentation and lessons learned from the region's Industrial Parks of the Future project not only fed and improved the region's S3 but also strengthened the tools and systems used for the sustainable and smart management of natural resources and energy systems.

- **Industrial transition initiatives can support higher level strategies and policies, for example national and regional development strategies, innovation policies and smart specialisation strategies, as well as supra-national frameworks** (e.g. the European Commission's Cohesion Policy programming). To do so, however, industrial transition policy makers must ensure that the links among these higher-level frameworks and the objectives of industrial transition are strong and that the actions are coherent and mutually reinforcing.

Governance matters in industrial transition, as does embracing governance and policy experiments.

- **Effective framework conditions, good strategic programming planning practices, well-designed monitoring and evaluation frameworks are foundational dimensions of the governance of industrial transition.** With regards to experimental approaches to industrial transformation, however, a critical pre-condition appears to be effective stakeholder engagement. As a multi-dimensional and collaborative process, industrial transition depends greatly on flourishing networks and the social capital of its various actors – from public and private sector representatives to academia and civil society organisations. Bringing stakeholders on board at the beginning of the programme design process, creating incentives for active participation throughout the process, and obtaining their feedback at the end not only contributes to success but builds ownership and mitigates the possibility of failure. In the North Middle Sweden region, for example, the Challenge Lab initiative, which aimed to explore the role of hydrogen in advancing the circular and low-carbon industrial transformation, succeeded in part thanks to its proactive outreach to relevant stakeholders at the project's outset. Strong financial and non-financial incentives for stakeholders to participate in each of the initiative's components also contributed to its success.
- **When policy makers have room to adjust governance arrangements (e.g. funding mechanisms) or project implementation ideas (e.g. shifting targeted beneficiaries) the results may be stronger, or more readily apparent.** Such is the value of experimentation – it can create a delineated policy space that is also timebound, and geographically contained, so that policy makers can test their activities and adjust them in a process of learning by doing, in order to more effectively meet their aims.

1 Governance and policy experimentation for industrial transition: Insights and considerations

For regions in industrial transition, traditional policy solutions – for example, pursuing technology-based innovation and research and development (R&D), channelling resources to large industrial firms, and designing and implementing actions in a sector-driven and/or top-down manner – have not always yielded the necessary results. This is evident in that industrial transition-related challenges, such as generating inclusive growth and improving regional well-being, have not disappeared despite past or present policy actions. This leads to the conclusion that the mechanisms being used to manage industrial transition – from governance arrangements to programming design and implementation – may need to be revisited and recalibrated or alternatively complemented or replaced with a new approach.

The OECD's work with the European Commission and the regions and countries in industrial transition that participated in the European Commission Pilot Action on Regions in Industrial Transition, beginning in 2018, shed light on how territories can improve their industrial transition processes. One of the lessons learned from the 2018-19 phase of the project was the possibilities offered by experimental governance as a means of managing policy complexity. Experimental governance, which embeds learning-by-doing and trial-and-error processes into the policy design and implementation cycle, can help policy makers identify new ways of approaching the complexity of industrial transition.

The High Impact Actions (HIAs) developed by the eight regions and two countries¹ that participated in the final phase of this project, from 2021-23, offer insight into how experimental processes can help territories advance in their industrial transition aims. This pilot action in and of itself was experimental precisely because it encouraged the participants to take a new look at how they tackle industrial transition, the mechanisms used, and the dimensions² (e.g. jobs and skills, inclusive growth) targeted. It also supported them in the process of conceiving and implementing an experimental initiative, with relevant stakeholders learning as they went along.

Policy insights on experimentation for industrial transition

The experimental approaches taken by project participants in developing and implementing their HIAs³ can provide initial insights into prospective pathways for managing industrial transition differently, both in terms of the six thematic dimensions that contribute to it and overall governance approaches. These insights, moreover, open the door for further study to identify how widely experimental approaches can be used to help meet industrial transition goals and advance regional development.

Frequently addressed industrial transition dimensions

With respect to the six thematic dimensions contributing to an industrial transition and explored in this project (i.e. innovation and innovation diffusion, jobs and skills, small and medium-sized enterprises [SMEs] and entrepreneurs, a just transition to carbon neutrality, inclusive growth and smart specialisation strategies [S3s]), the one that was most frequently addressed through the experimental activities was supporting a just transition to carbon neutrality. The focal point of the experiments undertaken in this dimension varied, however. A number concentrated on promoting or generating a circular economy, either in plastics, energy or forestry, for example, or in a specific industrial sector, such as automotive. What also varied was how the experiment was implemented: for example, in two out of the ten cases (i.e. North Middle Sweden and Wallonia, Belgium), a challenge-based (or mission-oriented) approach was adopted.

Advancing innovation and innovation diffusion was another priority area, be it in traditional or artisanal sectors populated by small and micro-enterprises or family firms in remote or rural communities or rather in more R&D-intensive sectors such as hydrogen. Some of these initiatives (e.g. in Cantabria, Spain) experimented with a broader definition of innovation – one encompassing production and process innovations, for example – including as a means to reduce costs and increase competitiveness. The concept of societal innovation was also explored and embedded into the innovation dimension. In such cases, the experiment tested whether it is possible to address broader social challenges (e.g. outward migration or general demographic decline, climate change, the rising costs of energy) that can accentuate industrial transition challenges. One approach was to introduce innovation into less innovative firm ecosystems (e.g. in remote or rural areas or where the firms were predominantly micro- and small enterprises). At times, however, innovation and innovation diffusion were also embedded in other dimensions, such as inclusive growth or a just transition to climate neutrality (e.g. in Cantabria in Spain, Grand Est in France and North Middle Sweden).

A third popular dimension for applying an experimental approach was jobs of the future and skills. Here again, the angle and approach varied. In one instance, in the Great Manchester region, United Kingdom, the focus was on ensuring better quality jobs through soft tools, such as a carrot-and-stick incentive structure to encourage employers to lift their standards in terms of job quality. In Hauts-de-France, France, the focus was on generating incentives to encourage digital upskilling in SMEs, thereby helping them to build their capacity and prepare to carry out jobs of the future. In Centre-Val de Loire, France, the emphasis was on building a stronger managerial talent pool. In all cases, however, the interventions focused on employers and building their capacity to ensure an appropriately skilled and motivated workforce to support the industry needs of a transitioning region.

The other three dimensions – SMEs and entrepreneurship, inclusive growth and smart specialisation – were part of several HIAs but they were less frequently the driving objective. Supporting SMEs and entrepreneurship was a thread that ran throughout almost all of the HIAs. This may reflect the firm ecosystems of the participants. It may also reflect the fact that SMEs (as well as micro-enterprises) and start-ups were the categories of firms that needed the greatest level of support in order to be able to contribute effectively to the industrial transition. In this regard, it is notable that in few to no cases were larger firms targeted to participate in the experiments and, in some cases, when they were, the larger regional firms were not interested.

With respect to S3s, in many cases, the HIAs were aligned with the regional (or national, if applicable) S3. Whether or not HIAs were designed to advance the relevant S3 is less clear, as is the impact that the experimental initiatives will have on the S3s. Thus, while an experimental approach to S3 may not have been integrated into the initiatives, the experiments clearly supported dimensions used to advance industrial transition processes. That they do so also can support the value of experimentation with respect to the European Commission's request that S3s follow a series of enabling conditions in the 2021-27 programming period for Cohesion Policy, among which are actions to manage industrial transition.⁴ This could be taken a step further with respect to ensuring effective entrepreneurial discovery processes,

Enabling Condition 4: Effective functioning of entrepreneurial discovery process. It is not unrealistic to expect that the lessons learned through stakeholder engagement processes linked to experimentation could also build capacity for entrepreneurial discovery processes. Finally, many of the HIAs helped reinforce or increase the variety of firms involved in innovation and/or innovation diffusion, which aligns with Enabling Condition 5: Actions necessary to improve national or regional research and innovation systems.

The diversity of dimensions and actions taken highlights the flexibility of experimentation. Specifically, it can help address more than one thematic dimension of industrial transition at once, whether intentionally or not. An average of four thematic dimensions were addressed in each HIA. There is hope, then, that experimentation is a naturally supportive methodology for taking a more holistic or integrated approach to programming for industrial transition and that experimental initiatives may advance more than one transition objective.

The role of governance mechanisms in experimental processes

The full pilot action brought to the fore the role that governance arrangements can play in advancing industrial transition. Now, in 2023, through the HIAs, the work reveals the importance of having appropriate governance arrangements for the experiment itself.

Planning the experiment

Planning and setting up the experiment was often challenging for a number of reasons. Many of the experiments were designed just before the start of the COVID-19 pandemic. In several if not all cases, this led to a delay in launching the experiments and, in other cases, it required a full shift in an experiment's design. These delays and design adaptations, however, did not appear to affect the experiment's objectives. Another noteworthy feature of the design phase was that while some HIAs initially targeted one category of firms, such as larger SMEs or SMEs more generally, these were not necessarily the firms that ultimately took part in the experimental process. Rather, on occasion, it was start-ups or micro-enterprises that showed greater interest in the experiment. Ensuring that HIAs are appropriately targeted to meet their beneficiaries' needs is fundamental and, encouragingly, the experimental approach allowed for the regional project teams to quickly adapt to this new set of beneficiaries. This highlights that while there should be a commitment to the objectives pursued and the transition dimension being worked on, there should also be flexibility – both practical and in terms of mindset – with respect to how such objectives should be pursued.

Framework conditions

The need to triangulate between a commitment to clear objectives and flexibility in project design and implementation was also a reality that was imposed by the framework conditions within which each HIA had to operate. In at least one case, regulatory frameworks would normally have made the experiment impossible. East and North Finland was able to work around this because of the experiment's funding mechanism (a grant from the European Commission).

Administrative burdens – which are frequently aggravated by legislation or regulations at a national level – are a common area that many of the HIAs helped smooth over. They did so by finding partners with whom to implement the experiment, as in the case above, or by simplifying procedures or processes over which they had control. Of particular relevance here is the fact that all of the institutions through which the HIAs originated were national, regional or county government bodies. Thus, while there were framework obstacles, the participants found ways to adapt and work within these. For example, in one national case, the administrative burden for accessing funds available or channelled through the government was deemed too high to make the experiment truly feasible, which resulted in a partner being identified who

could manage the funding aspect. Occasionally, this has already led to more lasting relevant change. For example, thanks to the East and North Finland experiment, a new way to fund SMEs with higher technology readiness level projects is in place.

Human and financial resources

Ensuring that experiments are appropriately resourced was frequently voiced by participants as a success factor. Dedicated staff – ranging from an individual to a full team – played a key role in supporting each HIA. Teams were typically guided by a decisive project leader and/or project manager as well as internal and/or external experts with specialised knowledge of the industrial transition dimension(s) targeted by the HIAs. In addition to the importance of policy makers having the necessary skills for project design and implementation, the experiments shed light on the fact that having a clear assignment of tasks and responsibilities, particularly when project teams are composed of individuals from different organisations, is another component of effective human resource support. In the case of the HIAs, clear responsibility assignment supported more co-ordinated action.

Properly funding the experiment seems self-evident. However, there are two aspects to this. The first is funding the institutional structure supporting the experiment, i.e. the individual or team mentioned above, along with elements that may be necessary to ensure implementation, e.g. putting surveys out in the field, hiring experts, travelling to more remote areas, etc. The second is providing funds as an incentive for firms to participate in the experiment. In many HIAs, implementation depended on putting out a project call to firms to participate in the experiment, for which financial incentives were part of the draw for participation. Non-financial incentives were also either explicitly or implicitly used to encourage participation (both explicitly, for instance by promising potential beneficiaries a more streamlined process for accessing funds, as well as implicitly, for instance by offering potential beneficiaries the chance to learn about ways in which they could improve their business performance).

Measuring performance

One governance area that was not as well developed in the HIAs was monitoring and evaluation frameworks. In some cases, the implementing region or country would establish clear monitoring and evaluation mechanisms for the projects that supported the experiment. However, it was rarer to see a monitoring and evaluation framework developed for the experiment itself. This may either reflect a gap in the experiment's design or an oversight. Measuring an experiment's performance is an important factor in determining its success and whether it should be scaled up. Indeed, it is generally important to take a moment in the design process and establish the criteria that will be used to undertake an *ex post* evaluation of the experiment when it has reached the end of its lifecycle in order to determine success and scalability. This was frequently missing.

Supported risks

An important element in the governance of an experiment, and one which, notably, is not frequently discussed, is the concept of supported risks. Experimentation is inherently risky. Just as experiments can succeed, they can also fall short of the mark or fail completely. This may be one reason behind their often-limited use. There are ways to manage the risk factor of experimentation and, while these were not explicitly discussed or explored with the project participants, they bubbled up through different elements that shaped this project. First, it is important to ensure that the experiment has political support as well as support from other governmental and non-governmental stakeholders. The more agreement there is around the experimental initiative, the greater its political legitimacy. Second, when designing the experiment, it is important to draw on the collective expertise, knowledge and resources of a diverse range of relevant stakeholders in order to guide the identification of more innovative and effective solutions. By doing so, the knowledge and network supporting the experiment is larger and there is more social capital

built around it. Third, highlighting how the experiment can support meeting the goals of higher-level strategies or other sector policies can resonate with other sectors and, at a minimum, gain their support for the proposed concept. Finally, sharing the results of a successful experiment as broadly as possible can help credibility for future experimental approaches and promote learning, which can encourage further experimentation.

Stakeholder engagement

While stakeholder engagement is frequently embedded into discussions of governance arrangements or practices, the extraordinarily large role it played in each of the HIAs makes it important to highlight it separately. No participant worked on their experiment alone. They relied heavily on deep and ongoing stakeholder engagement. Stakeholders could be broadly classified into two groups: i) other government stakeholders, usually at the same level of government but active in other sectors that can influence industrial transition; and ii) external stakeholders, including the private sector, civil society and non-governmental organisations, academia, thematic experts, business or trade associations, those implementing individual projects supported by the experiment, and citizens.

In most, if not all cases, stakeholder engagement began early in the experimental process. Internally, stakeholder engagement and communication generally relied on formal or informal conversations with peers or on other co-ordination mechanisms that were established to support the experiment, such as steering and working groups, which frequently mixed internal and external stakeholders. Externally, stakeholder engagement and communication often started with a mapping of relevant actors, followed by a direct consultation, be it through surveys, interviews or other means. This often gave the region an idea as to just how much knowledge and awareness there was regarding industrial transition, its challenges, the dimensions that could help advance it and why engaging in innovation was important. This information helped feed the articulation of experiments' objectives and ensure they were realistic but still ambitious. It also helped policy makers understand the actual capacity of stakeholders to: i) engage with such a project; and ii) to engage with industrial transition overall. The stakeholder engagement initiatives employed in the different experiments also helped set objectives and priorities, and better target the audience for the experiment. Stakeholders were generally involved in the experiment's design and implementation. This depth of engagement engendered other innovation opportunities, built new partnerships and helped give project teams an idea regarding scalability. In two cases (i.e. North Middle Sweden and Wallonia), the entire experimental approach was based on stakeholder engagement; in the other cases it was a critical component.

This heavy emphasis on engagement is another reason why it is important to have sufficient resources when undertaking an experiment. It requires a significant amount of co-ordination of different sets of actors as well as expertise in different engagement techniques. This latter point is fundamental as the success of an engagement process can depend on its design and a good understanding of how engagement works, which tools to use and when, and how to build the necessary capacity. It is also valuable for avoiding consultation fatigue and disillusionment.

Potential to scale up

The potential for scaling the experiments up (to other places) or out (to other sectors) was considered an indicator of whether the experiment successfully introduced a new policy or initiative to support industrial transition. In almost all cases, scalability was identified, mostly scaling up potential and in some cases scaling out. Scaling, however, will clearly require sufficient resources, time and political support. It is also important to recall that determining the outcomes, and ideally the impact, of an experiment on the challenges faced by a region in industrial transition takes time and so a final decision on scaling cannot be made from one day to the next. In addition, the experiments in question ran for a relatively short period (approximately 12 months) – which will have affected project outcomes and, by extension, scaling

decisions. Political change may also influence whether an action is continued or scaled and is not to be forgotten.

A synthesis of recommendations

Below are a series of simple recommendations with respect to experimentation for industrial transition arising from the work. Most are targeted to policy makers, regardless of whether they are regional or national, with a number specifically for higher levels of government and the European Commission.

Considerations for policy makers

- **Experimenting is a useful tool for managing industrial transition:** It will require supportive framework conditions, sufficient human and financial resources, well-developed planning, monitoring and evaluation mechanisms and a willingness and capacity to engage with stakeholders. If these are not in place, the experiment is unlikely to work or provide any relevant insights for policy makers.
- **Pay attention to scope and scale:** While a conclusion of this work is that experiments can be scaled up and/or out and can be a means to support industrial transitions elsewhere, the experiences shared in this report were limited to single experiments in one place. They show that experimentation can work but whether an experimental approach would be appropriate for all initiatives being used to advance transition is less certain.
- **Establish clear, realistic but ambitious goals:** This is fundamental to any experiment, as it is the basis against which success will be measured and the future of the experiment will be decided. Moreover, clear goals not only provide direction but can also help to bring together stakeholders around an initiative by creating a shared vision. They can also facilitate effective communication about the experiment, which can help to garner public support for and interest in the results of the initiative.
- **Understand human and financial resource needs:** When designing the experiment, it is important to take stock of the expertise that will be needed to ensure implementation and where it can be found. It is just as important to identify the financial resources necessary, the mechanisms that can ensure their availability and the merits of providing financial incentives to prospective participants.
- **Build monitoring and evaluation frameworks:** Monitoring the experiment is a continuous process and evaluating its effect can take time. Performance measurement frameworks, however, should be determined at a project's outset, with appropriate indicators that have been determined following effective stakeholder consultation and are backed by readily-accessible data.
- **Be willing to take risks and have a flexible mindset:** The risk of failure is inherent to any experiment. Experiments do not always work out as planned and it may be necessary to shift and adjust the experiment in response to rapidly changing circumstances. This need not lead to failure and it may also, in fact, lead to success. However, any readjustment to the experiment should be conducted in close consultation with relevant stakeholders while ensuring that a clear line of sight on the pre-agreed objectives is maintained throughout.
- **Be able to actively engage with stakeholders:** Engagement is a capacity in and of itself – be it on the part of the engager or the stakeholders. Engagement is also a commitment to act based on its outcomes and should be part of the full design, implementation and evaluation process of any experiment. This includes being transparent with stakeholders about what has or has not worked while communicating successes, however modest or incremental.

Considerations for higher levels of government

- **Experiments are an investment that can pay dividends:** A successful experiment for industrial transition can build government capacity, spread innovation, advance inclusive growth and contribute to achieving a range of strategic and sector objectives (e.g. in climate, digitalisation, energy, labour markets, skills), including the priority objectives linked to EU Cohesion Policy. Moreover, experiments are a cost-effective way of generating information on whether a policy intervention can achieve a specific objective, and/or whether it is desirable or even possible to scale up or out.
- **Use experiments to reconsider framework conditions:** Often, framework conditions and administrative processes hold back innovation and innovative governance. Since experiments are limited in time and scope, policy makers can use their results to assess the potential benefits of adjusting framework conditions (such as laws or regulations), as well as the risks of doing so. For instance, experimentation can provide pathways to test whether minor legislative or regulatory adjustments for the express benefit of specific groups, such as micro- and small enterprises or start-ups, may promote their participation in the economy. Such experimentation can be done, for example, by:
 - Working with a region wishing to implement an experiment where specific framework conditions or administrative burdens have been perceived by stakeholders as negatively affecting success.
 - Establishing a defined period of time or a specific funding opportunity to which framework or administrative requirements could be adjusted for a targeted group of potential project beneficiaries while measuring the results.

Considerations for the European Commission

- **Tackling territorial divides improves trust in government:** Further analysis of and support for regions in industrial transition can lay the foundations for tackling the geography of discontent, which in turn can help to improve trust in government.
- **Welcome experimentation as a viable lever for policy design and implementation:** Continue to promote and facilitate experimentation that reinforces the various dimensions supporting industrial transition, for example by:
 - Establishing regulations that support (or do not discourage) experimentation as criteria for responses to innovation project calls funded by EU Cohesion Policy or other funds.
 - Emphasising the need for and facilitate the development of robust monitoring and evaluation mechanisms to track the effects of policy experiments effects, including the core challenges facing regions in industrial transition (e.g. relatively high levels of unemployment, low gross domestic product, low labour productivity, low life expectancy).

Notes

¹ The regions are Cantabria (Spain), Centre-Val de Loire (France), East North Finland (Finland), Grand Est (France), Greater Manchester (United Kingdom), Hauts-de-France (France), North Middle Sweden (Sweden) and Wallonia (Belgium). The countries are Lithuania and Slovenia.

² The nine dimensions are divided into two sets. One set is for governance arrangements that are particularly important to industrial transition and experimentation: framework conditions; strategic

programming, implementation and evaluation; and stakeholder engagement. The second set is dedicated to thematic dimensions that support industrial transition, namely: innovation and innovation diffusion; jobs (of the future) and skills; SMEs and entrepreneurs; a just transition to carbon neutrality; inclusive growth; smart specialisation.

³ Chapter 5 of this report highlights the main findings and provides links to case studies of each HIA.

⁴ In the 2021-27 programming period for Cohesion Policy, the European Commission requested that S3s be updated and respond to the seven “enabling conditions”: i) Up-to-date analysis of bottlenecks for innovation diffusion, including digitalisation; ii) Existence of competent regional/national institution or body responsible for the management of the smart specialisation strategy; iii) Monitoring and evaluation tools to measure performance towards the objectives of the strategy; iv) Effective functioning of entrepreneurial discovery process; v) Actions necessary to improve national or regional research and innovation systems; vi) Actions to manage industrial transition; and vii) Measures for international collaboration.

2 Insights into the governance of regions in industrial transition

This chapter discusses industrial transition from the perspective of its governance and policy implications. It highlights a set of challenges associated with industrial transition today, such as concentrated declines in industrial activity and falling standards of economic and social well-being. In light of these, the chapter emphasises the need for robust governance mechanisms and a place-based policy approach in order to support places undergoing industrial transformation. It also explores the role of experimental governance and policy arrangements in helping to facilitate successful industrial transition initiatives.

Introduction

Industrial transition is not a new phenomenon. Societies have undergone seismic transformations as a result of innovation many times in the past. The invention of the printing press in the 15th century, the industrial revolution of the late 18th and early 19th centuries, the Ford-inspired technologies of mass production in the 20th century and the digital and artificial intelligence (AI) revolutions of the 21st century are all relevant examples. Each of these shifts has affected regions and affected them differently, creating economic winners in certain areas while others are left behind.

What makes industrial transition today different, and potentially more challenging to deal with than in the past, has been the rise of an increasingly uncertain global environment. In a global economy that is far more interconnected than it has ever been, all regions have been confronted by challenges that have been borne, at least in part, of rapid industrial change. Over the past three decades, the world witnessed striking demographic shifts, including large waves of migration, as well as dramatic changes in how and where people work. Regions have also had to contend with a rise in intense shocks or crises, many of which have been difficult for policy makers to predict with confidence. Such crises include the 2008 Global Financial Crisis, the COVID-19 pandemic, the 2021-23 global inflation surge, an increase in the severity and frequency of climate change-induced natural disasters and rising geopolitical tensions (e.g. between China and the United States) or even war (as in the case of Russia's ongoing war of aggression against Ukraine).

The result is a global context that is increasingly complex and unpredictable. It changes rapidly, generating uncertainty for government and citizens, who need to be flexible and agile in order to quickly adapt to new circumstances. Failure to adapt and to support particularly exposed communities risks increasing inter-regional and intra-regional inequalities.

While all regions are confronted with today's new-found global complexity, regions in industrial transition may experience its negative effects more acutely. In part, this may be due to greater difficulty in shifting or adjusting their industrial bases rapidly enough or effectively enough to take advantage of the new economic opportunities an industrial transition can bring. Reconsidering existing governance and policy mechanisms can help regions in industrial transition transform their industrial base to one that better generates inclusive, sustainable regional development and greater citizen well-being. It can also help them develop the resilience to respond more effectively to uncertain global economic headwinds.

This chapter builds on insights emanating from the OECD's 2018-19 work on regions in industrial transition. After a brief introduction to the concept of industrial transition, along with its links to innovation, the chapter takes a look at why policy makers should support regions in industrial transition. Building on the practical experience of the eight regions and two countries in industrial transition that are featured in this report, the chapter then considers the conceptual and practical preconditions of regional development and governance that are needed for industrial transition initiatives to succeed. Conceptual elements include the value of a place-based approach to industrial transition, as well as an integrated approach to innovation diffusion that aligns governmental stakeholders across objectives, priorities and initiatives. Practical elements include ensuring that appropriate multi-level governance arrangements are in place or can be introduced before industrial transformation initiatives are attempted. The chapter concludes by considering how taking an experimental approach to the transition can act as a spark that catalyses a successful industrial transformation.

Regions and industrial transition: A brief overview

Twenty-first-century experience with industrial transition – for example in Germany, the United Kingdom and the United States – highlights the impact of major industrial transformations directly on a region's labour market opportunities and productivity. It also reveals the potential for such processes to negatively affect the overall well-being and quality of life of a region's residents. For example, in North East England

(United Kingdom), manufacturing sector jobs decreased by 51% between 1996 to 2022 (ONS, 2022^[1]). The United States (US) Rust Belt region¹ employed 75% of workers in the steel, automotive and rubber industries in 1950 and only 55% in 2000 (Alder, Lagakos and Ohanian, 2014^[2]).

In the Ruhr area in Germany, the substantial decline in the manufacturing industry from 1964 to 2014 was only partially offset by an increase in service jobs (IAT/Wuppertal Institut für Klima, Umwelt, Energie, 2021^[3]). In 2020, the region still suffered from significantly above-average unemployment levels – 10.1% in the region versus 6.0% in the country – and a weak knowledge economy. Unemployment in the Ruhr city of Gelsenkirchen reached 15.6% in 2020 and, in 2019, the average disposable per capita income in the city was EUR 17 015 – less than half of the average reported in Heilbronn, Germany’s highest-earning city (EUR 42 275) (Seils and Pusch, 2022^[4]; Hassink and Kiese, 2021^[5]).

As noted in the *OECD Regional Outlook 2023* (forthcoming^[6]), raising productivity growth is an important vehicle for reducing income inequalities within and across regions and territories. There is also significant potential for low-productivity regions to boost productivity growth in all economic sectors, including the industrial sector. In 2019, close to 25% of productivity differences across regions within OECD countries were due to differences in productivity within the same macro-sectors (OECD, forthcoming^[6]). Labour-augmenting innovation can lift productivity levels in lagging, industrial regions, thereby creating new job opportunities and wages, and preventing such opportunities from being concentrated in certain, often metropolitan, regions (OECD, forthcoming^[6]). For such efforts to be successful, however, it is essential for policy makers to build on a region’s existing strengths and past industrial legacy, without losing sight of the future.

Making industrial transition work

Industrial transition needs to be understood in the context of certain development challenges that affect some territories but not others and are a product of historical economic legacies. Regions in industrial transition are defined by their tendency to demonstrate two or more common characteristics that generally place them among the lower tier of performance in their own countries (Box 2.1) (OECD, 2019^[7]). Furthermore, they are generally regions that have been, and may still be, heavily reliant on extractive, resource-intensive or heavy industrial manufacturing industries. They may have well-established capabilities and deep industrial knowledge in important sectors. However, they are also typically expected to modernise, adjust or transform their industrial composition. This can include adapting their existing sectors as well as building up resources and expertise in new or emerging sectors relevant to their industrial structure to drive economic growth (OECD, 2019^[7]). Importantly, they are not necessarily poor or disadvantaged regions but may risk tipping into this category if they fail to adjust to changing circumstances. They may also suffer from institutional weaknesses, either in terms of governance or capacity. Research has shown that the efficacy of innovation policies at the subnational level is often influenced by institutional quality, which can include policy-making capacity and levels of corruption (McCann, 2023^[8]).

Box 2.1. What is a region in industrial transition?

There is no single definition of a region in industrial transition. However, it typically shares two or more of the characteristics highlighted below:

- A lower-than-average per capita gross domestic product (GDP) as a percentage of the national average.
- An average annual GDP growth of 1% or less.
- A lower-than-national-(or EU)-average level of population with tertiary education.

- A rising unemployment rate.
- A lower-than-national-average life expectancy.
- Performance in the middle to bottom half of [OECD Regional Well-being](#) indicators (e.g. jobs, income, environment, community, life satisfaction, housing, health, education).

In regions in industrial transition, these characteristics may translate into lower-than-average incomes, a perceived and/or real lack of job opportunities, a degradation of public and civic space, a rise in petty crime and a greater reliance on government transfers.

Source: Based on OECD (2019^[7]), *Regions in Industrial Transition: Policies for People and Places*, <https://doi.org/10.1787/c76ec2a1-en>; OECD Well-being indicators: <https://www.oecdregionalwellbeing.org/>

Industrial transition is an inherently place-based concept

Given the divergence from other regions in their countries that regions in an industrial transition can demonstrate, a “one-size-fits-all” development policy – e.g. one that is applied broadly to many regions at once – is likely to fall short of the mark. Rather, policy makers need to adopt a place-based approach to managing an industrial transition to promote stronger inclusive growth and well-being for the residents in a specific geographic territory and in order to reduce inter- and intra-regional disparities. Place-based approaches assume that a territory’s social, economic, environmental and institutional characteristics matter. They also presuppose that the involvement of subnational actors is important, whether solely to identify local needs and priorities or to implement specific actions. Place-based approaches differ from traditional ones in a number of ways, including the following (OECD, 2020^[9]):

- The policy focus shifts from an emphasis on external interventions to an approach that builds on a territory’s local human, natural, financial and governance assets.
- Policies are not only targeted at administrative territories but also functional economic areas that reflect real linkages across territories, including urban-rural linkages.
- The policy-making process no longer centres around the central government but rather focuses on establishing working relationships between all relevant actors (including regional and local government stakeholders, as well as civil society and the private sector).
- The traditional “siloes” approach of developing and implementing policies in isolation is dispensed with; active efforts are made to identify and leverage synergies and complementarities across sectors.

To act in concert across these areas, policy makers must be able to rely on effective multi-level governance, as getting the policy mix right requires not only identifying common objectives but also ensuring cross-sector and multi-level policy coherence and complementarity. This means engaging and co-ordinating ideas and actions among different levels of government, different policy sectors and a variety of stakeholders in what can be a difficult conversation – one that revolves around generating structural change. Success can depend to a significant degree not only on the governance arrangements in place but also on their flexibility and the capacity of policy makers to adjust them where appropriate. Conceptual governance components, such as taking an integrated approach to developing and implementing transition initiatives, and more concrete governance components, such as making roles and responsibilities clear, ensuring sufficient resources and optimising stakeholder engagement practices, are all part of the elements that can make a transition more or less successful.

Industrial transition calls for an integrated policy approach

A policy approach that addresses only one of the challenges confronting a region in industrial transition has limited potential to succeed. Rather, industrial transition calls for considering and acting on a variety of areas simultaneously. Acting on jobs and skills should also support action for building innovation and innovation diffusion. Innovation policy should not neglect the importance of boosting innovation potential and capacity among small and medium-sized enterprises (SMEs) as well as entrepreneurs. Education and learning cannot be forgotten and an opportunity to tailor these to today's transition opportunities should not be missed, for example to advance a carbon-neutral transition and promote stronger inclusive growth and well-being for the region's residents to reduce inter- and intra-regional disparities.

Given that addressing industrial transition draws on a variety of policy areas, an integrated approach, or at least an approach where policy sectors act in concert to advance the transition, may be more successful than one where individual policy areas act alone as this can generate policy fragmentation, incoherence and overlap, as well as a potentially suboptimal use of resources. Taking an integrated approach, however, first requires bringing a variety of government sectors on board and then ensuring that the various objectives, priorities and initiatives within these sectors that could contribute to industrial transition are aligned. It is further enhanced when the objectives and priorities among different levels of government are also in sync.

When an integrated approach to industrial transition is in place, policies related to economic development, environmental protection, social equity, well-being and other areas are all working towards the same goals and objectives. Moreover, an integrated approach supports greater policy continuity and clearer guidelines for decision-making and action. It can also help to align priorities while serving as a roadmap for cross-sectoral industrial transition and innovation policy. An example of how such alignment can be generated is found in Piedmont's (Italy) Unified Strategy Document (*Documento Strategico Unitario*, DSU) (Box 2.2).

Box 2.2. Piedmont, Italy: The Unified Strategy Document or DSU

Piedmont's DSU lays out the region's development vision and objectives, including territorial, economic and social development and how different regional development tools can help achieve the region's development objectives. These tools include different regional strategies, such as the Regional Strategy for Sustainable Development, the Regional Smart Specialisation Strategy (RIS3) and the regional Smart Mobility Plan. It also offers an assessment of how to make the best use of the different European Union (EU) financing streams for Piedmont, such as the Cohesion Fund Operational Programmes (specifically the European Regional Development Fund [ERDF], the European Social Fund [ESF] and the European Agricultural Fund for Rural Development [EAFRD]) and the NextGenerationEU COVID-19 recovery package. Furthermore, the document also describes how regional objectives are aligned with and embedded in national, European and international policy and development visions, in particular the European Green Deal and the 2030 Sustainable Development Agenda.

Source: Based on OECD (2021^[10]), *Regional Innovation in Piedmont, Italy: From Innovation Environment to Innovation Ecosystem*, <https://doi.org/10.1787/7df50d82-en>.

The strength of Piedmont's strategic frameworks and policies to support innovation and industrial transition lies in the regional government's initiatives to ensure that the various EU, national and regional strategic industrial transition initiatives are linked to one another. This is further supported by the region's proactive approach to articulating these links in an effort to identify strategic and cross-sector synergies.

Industrial transition depends on active governance arrangements

Beyond taking an integrated approach, which provides a methodological foundation from which regions can approach the industrial transition, certain specific governance arrangements need to be activated in order to ensure that such transitions are as successful as possible. These include clearly assigning responsibilities for transition processes among levels of government to avoid policy overlap and duplication, allocating sufficient financial, human and infrastructural resources to the transition to ensure that implementation can proceed smoothly and engaging external stakeholders to improve the effectiveness, impact and value-for-money of transition initiatives.

Clearly assigning roles and responsibilities can avoid policy overlap and duplication

Clearly assigned responsibilities among different levels of government and non-government stakeholders (e.g. clusters, incubators, academia, private sector, civil society organisations) helps actors in the industrial transition process understand their role, responsibilities and what is expected of them. This minimises potential confusion when implementing policies and programming and ensures that each person is accountable for their specific tasks. Such clarity can also help to prevent duplication of efforts and ensure that resources are being efficiently used.

For example, the region of East and North Finland piloted a new funding mechanism to advance its industrial transition aims. The governance structure supporting the piloted policy worked well for all seven regional councils participating in the pilot because each of them agreed early on who would carry out the different tasks involved in the pilot action. In addition, each council made sure that their staff had the right competencies to carry out assigned tasks, such as proposal evaluations, funding management and meeting co-ordination.

Financial and human resources matter when implementing transition initiatives

Ensuring that transition initiatives benefit from dedicated financial support is critical to their success. For instance, providing policy makers with adequate funding as well as sufficient flexibility to design and amend tailored grants or financial support schemes can help policy makers create a supportive environment in which innovative ideas can be brought to fruition. Flexibility in the use of financial resources is particularly important for three reasons. First, it can help to support a pipeline of innovative projects that would not have been funded through regular calls. In the case of Wallonia, Belgium, start-ups, SMEs and micro firms indicated that they would not have experimented as extensively as they did without the High Impact Action (HIA) grant they received from the European Commission to support their industrial transition process. Second, flexibility is necessary to enable initiatives to be amended where necessary, thereby ensuring that beneficiaries receive more targeted support. Third and relatedly, flexibility is necessary in order to ensure that financial support can redirect towards the upscaling of successful initiatives.

At the same time, dedicated human resources and local expertise are critical for enabling transition initiatives to gain traction. In particular, the implementation of such initiatives depends on having at least one dedicated individual with deep knowledge of the targeted industries and the region. It is preferable that this individual be well ensconced in the region, in order to be able to effectively mobilise pre-existing local networks when implementing the initiative as well as building new ones.

These elements were in place during the Grand Est (France) initiative, which allocated funds for a dedicated agency, along with a project manager, to oversee the development of its Future Activity Zones (*Zones d'activités du futur*, ZAFs) and associated assessment tool. The policy action required staff with specialised expertise and knowledge, high levels of professional commitment, willing to take a risk in applying a new idea and also able to engage relevant local actors, bringing them on board with the ZAF concept. It also required staff with strong project management skills, given their responsibility for co-ordinating the action and ensuring effective consultations and exchanges with stakeholders. The pilot

project faced difficulties getting off the ground until a dedicated project manager arrived, who had the time, personal dedication and responsibility to implement the action. The pivotal role of a dedicated project manager in the success of an initiative was also experienced in Cantabria, Spain.

Stakeholder engagement can help to build social capital, which can advance industrial transition

Social capital can foster good public and corporate governance in regions in industrial transition (McCann, 2023^[8]). The concept posits that residents use public and private networks and mechanisms to invest in and maintain a local sense of place. For example, the work of local business mentoring organisations can help to improve company practices, providing them with tools that can help them reinvest more effectively in local communities while also helping to improve their profitability.

Social capital, however, relies on effective engagement with others – be they individuals, firms or other organisations – that can improve and energise possible collaborative links among the public, private and civil society spheres in a locality, thereby generating a virtuous circle of social capital development (McCann, 2023^[8]). Effective stakeholder engagement can help to build social capital by generating a strong and shared sense of ownership for community development. This can support more proactive engagement by key stakeholders and also help community initiatives (such as industrial transition initiatives) to gain critical mass.

In the Greater Manchester region for example, the Good Employment Charter's extensive co-design process, with stakeholders from the public, private and third sectors, was a cornerstone of its success in building social capital. Refining charter principles and criteria in close collaboration with business organisations helped to develop a document that fused high employment standards and high levels of purpose with realistic and attainable goals for employers. Moreover, the charter implementation unit's proactive outreach to employers, including organising regular business-to-business mentoring events, helped demonstrate to interested employers that employment standards could be successfully improved without bankrupting their organisation. These elements were useful tools that lent legitimacy to the initiative, thereby encouraging more employers to sign up for the charter. As such, they helped create ownership among regional businesses for Greater Manchester's industrial transition goal of improving employment standards.

Yet, while governance arrangements such as stakeholder engagement practices can build social capital in a region and provide a strong foundation from which to advance industrial transformation, they must be well-planned and part of a larger process. Being more experimental with these arrangements, applying them to policy design and implementation may also be necessary and featured prominently in many of the regions and countries featured in this report.

Industrial transition depends on an effective regional innovation ecosystem

Industrial transition and innovation are closely intertwined (Box 2.3). Successful industrial shifts occur when firms and economies respond to new market demands and innovate to create opportunities for workers. They also depend on effective interaction among industry, academia, government and civil society actors (quadruple helix), which is foundational to any innovation ecosystem. These partnerships facilitate research and development (R&D) initiatives, access to funding and other resources, and a culture of innovation and collaboration that is essential to moving industrial transition forward.

Box 2.3. Categories of innovation activity

Innovation is a cornerstone of industrial transition and regions undergoing industrial shifts will need to underpin these through innovation. However, not all regions have an innovation ecosystem structured to be at the technological forefront. A more appropriate approach to regional innovation in these regions is to ensure that the innovation policy advances different types of innovation, including those that depart from current technologies and practices. The primary forms of innovation include:

- **Technological innovation:** refers to the development of technologically new or substantially changed goods or services, or the use of a technologically new or substantially changed process.
- **Social innovation:** refers to the design and implementation of new solutions that imply conceptual, process, product or organisational change and which aim to improve the welfare and well-being of individuals and communities.
- **Business model innovation:** refers to change in an organisation's value proposition and its underlying operating model, by modifying the rationale of how an organisation creates, delivers and captures value in economic, social, cultural or other contexts.
- **Policy innovation:** refers to a change in the processes, tools and practices used for policy design and implementation with the aim of better solving complex issues.
- **Public sector innovation:** refers to the design and implementation by a public sector organisation of new or significantly improved processes, methods or services – from data analytics to prototyping and design thinking – aimed at improving its operations or outcomes.

Source: Based on OECD (2021_[10]), *Regional Innovation in Piedmont, Italy: From Innovation Environment to Innovation Ecosystem*, <https://doi.org/10.1787/7df50d82-en>.

Developing an effective innovation ecosystem is important for regions in industrial transition given that they frequently face obstacles in nurturing and diffusing new ideas and technologies. In industrial transition regions, larger firms with established industrial specialisations typically drive innovation activities. Yet, the business ecosystem is often composed of many SMEs, family firms and businesses that contract with larger firms. This can limit innovation capacity for several reasons. First, small firms may have low innovation activity due to a reliance on specifications from dominant large firms that are their clients. Second, SMEs may have difficulties accessing investment capital which they need to undertake innovation-oriented projects. Third, physical, cultural or organisational barriers, such as the geographic isolation of rural businesses, an insular business culture or a traditional business structure can also hinder collaboration-driven innovation (OECD, 2021_[10]). Finally, the narrow definition of innovation, i.e. focused on R&D and technology, which is often adopted by regions and businesses alike, is also frequently reflected in the types of projects eligible for innovation funding in a region. Often, smaller firms have innovation potential or are innovative without realising it, but either are not eligible for funds or do not consider themselves eligible. Widely communicating and supporting a mix of different types of innovation can strengthen innovation ecosystems and is particularly important in a region in industrial transition populated by a large number of SMEs and micro enterprises.

A robust innovation ecosystem can improve a region's innovation culture, thereby helping companies address industrial transition challenges more effectively. For instance, regional governments should be involved in supporting fora or initiatives through which SMEs, large companies, universities and other innovation stakeholders can engage in collaborative problem solving. In addition, funding schemes and

investment opportunities need to be developed to provide entrepreneurs and start-ups with the necessary funding and other resources to conduct innovation-related initiatives.

To strengthen their regional innovation ecosystems, the industrial transition regions in OECD member countries and EU member states involved in this project implemented various policies and learned valuable lessons along the way. For example, cross-regional collaboration, involvement of regional and local authorities in innovation funding schemes (e.g. in East and North Finland) and societal innovation policy initiatives (e.g. in Cantabria, Spain) have shown positive results in enhancing innovation potential (OECD, 2023^[11]; 2023^[12]). Challenge-oriented (also referred to as “mission-oriented”) approaches to innovation have been successful in promoting collaborative problem solving and innovation at the regional level (e.g. in North Middle Sweden), particularly in environmental sustainability (OECD, 2023^[13]).

Why help regions in industrial transition succeed

Regions in industrial transition are facing increasing economic and social pressures. While the per capita income gap among OECD member countries has declined over the past 20 years, the gap in per capita income between the wealthiest and poorest regions in an OECD country (TL3 level) has generally widened. As of 2022, 70% of the OECD population live in countries that are experiencing increases in regional income inequality (OECD, forthcoming^[6]). These data are instructive, given that regions in industrial transition tend to experience low GDP growth and productivity compared to their intra-country regional peers.

There are, however, also specific economic factors that are characteristic of regions in industrial transition. Geographically concentrated declines in local industrial activity, especially when not compensated for by new job creation in local communities, risk leading to a fall in living standards, economic dislocation, dwindling access to public services and a growing geography of political discontent, borne of feeling that one is living in a region or a community that is undervalued by society (OECD, 2023^[14]; 2019^[7]). If left unattended, this geography of discontent risks leading to lower levels of trust in government, social unrest and/or political instability, which makes addressing it an urgent priority for policy makers (OECD, 2023^[14]; Rodríguez-Pose, 2018^[15]; Muro, 2021^[16]).

Industrial decline can lead to growing inequalities, with high costs

Industrial decline can be a catalyst for rising regional inequalities. For example, industrial decline often leads to job losses in the affected region. When industries close or downsize, workers are laid off, resulting in unemployment and reduced income opportunities for the local population. This can create a significant economic disparity between regions with a thriving industrial base and those experiencing a decline. A recent study from Canada examined the impact of manufacturing decline in the country from the early 2000s to the mid-2010s (Morissette, 2020^[17]). The study found that regions with higher exposure to manufacturing job losses experienced persistent declines in employment and wages relative to regions less affected by industrial decline.

Additionally, economic dependence on old industries exacerbates regional inequalities. Industries often form the backbone of local economies, contributing to employment, tax revenue and economic growth. When dominant industries decline, the local economy can become overly dependent on shrinking sectors. This can exacerbate regional inequalities, as areas heavily reliant on declining industries face greater economic challenges than regions with more diversified economies. In fact, regions experiencing industrial decline tended to have lower levels of innovation and higher levels of inequality than regions with a more diverse economic base (Lee and Rodríguez-Pose, 2013^[18]).

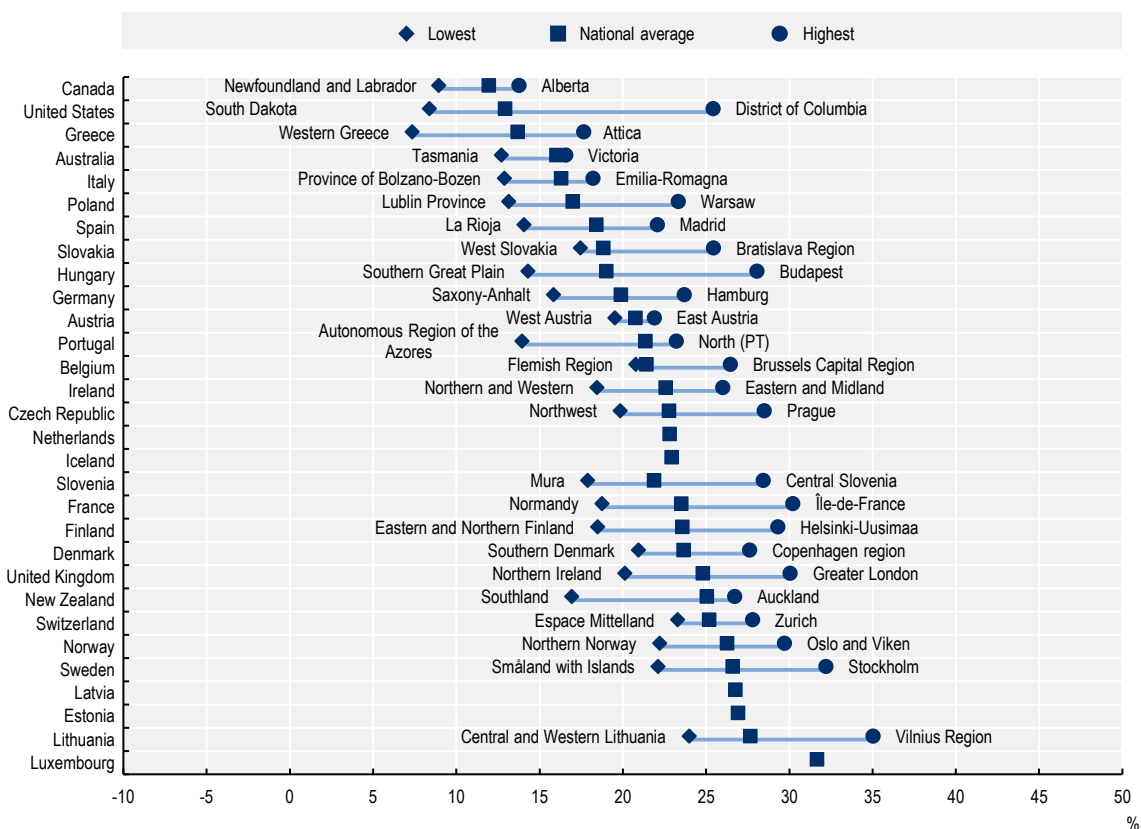
Industrial transition goes hand in hand with the green and digital transitions

Transitions towards a greener economy can affect regions in different ways and the consequences of such transitions on regions in industrial transition are not always net positive. For example, regions in industrial transition tend to have a concentration of employment and economic activity that generates high carbon emissions (OECD, 2023^[19]). Job losses in these sectors as a result of the green transition can pose risks to the economic prosperity of the regions in which they are located. Such regions often have fewer economic resources to absorb shocks and take advantage of economic opportunities. In the European Union for instance, regions that are most vulnerable to climate-related industrial transition tend to lag behind with respect to average GDP per capita and regional wages (OECD, 2023^[20]).

On the positive side of the ledger, increasing the share of green-related jobs², which carry a 20% average wage premium over non-green-related jobs, can represent an economic opportunity. However, OECD data point to a significant disparity in the employment share of green-related jobs across OECD regions (OECD, 2023^[19]). Leading regions currently have green employment shares of around 30%, while in lagging regions, green jobs account for less than 10% of employment (Figure 2.1). These differences partly reflect regional inequalities, as certain regions face other challenges such as a lack of a green skills base, which limits the ability of their labour force to participate in the green economy (OECD, 2023^[19]; forthcoming^[6]).

Figure 2.1. Regional disparities in green jobs within countries

Share of green jobs across and within countries, OECD regions, 2021 or last available year



Note: Last available year: 2019 for the UK; 2020 for Iceland; 2021 for Australia, Canada, EU countries, Norway, New Zealand, Switzerland and the United States. According to the OECD, green-task jobs are defined and analysed at the occupation level based on the greenness of their related task content.

Source: OECD (2023^[19]), *Job Creation and Local Economic Development*, <https://doi.org/10.1787/26174979>.

In order to ensure that all territories, including regions in industrial transition, can make the most of the opportunities provided by the green transition, policy makers could build education and training initiatives that will equip workers with the necessary skills for green jobs, for example in the energy efficiency, renewable energy or sustainable constructions sectors. At the same time, it is essential to ensure there are employers who are demanding these new skills. One way to do so is by raising awareness among employers of how employees with these skills can help improve business performance. In both supply and demand side instances, the initiatives can help promote more inclusive growth, while also creating broader support for green policies as the benefits of the transition are spread more evenly across the population (OECD, 2023^[19]).

As in the case of the green transition, the economic opportunities emerging from the digital transition are unevenly spread across regions, including within regions in industrial transition, and can vary according to connectivity and digital skills. Better digital connectivity, for example, allows businesses to adopt advanced technologies and reach a wider market while providing consumers with access to digital services (OECD, 2021^[21]; World Bank Group, 2019^[22]). However, sizeable connectivity differences among OECD regions (OECD, forthcoming^[6]) risks leading to significant differences in the ability of people and firms to position themselves for opportunities in the new digital environment. This, in turn, could fuel inter-regional and intra-regional inequalities.

In most of the EU regions and countries in industrial transition featured in this report, internet connectivity levels (measured as household broadband access) hovered at or somewhat below the EU's regional average (92.3%) in 2021 (Eurostat, 2021^[23]). This said, between 2015 and 2021, all of the EU regions and countries in this report saw their growth in digital connectivity³ exceed the 13.4% regional EU average (except for East and North Finland, which was consistently above the EU average) (Eurostat, 2021^[23]). The rapid increase in access to broadband Internet can help these regions as they seek to foster innovation, broaden market access and diversify their economies.

Industrial transition can address regional inequalities, helping build trust in the government

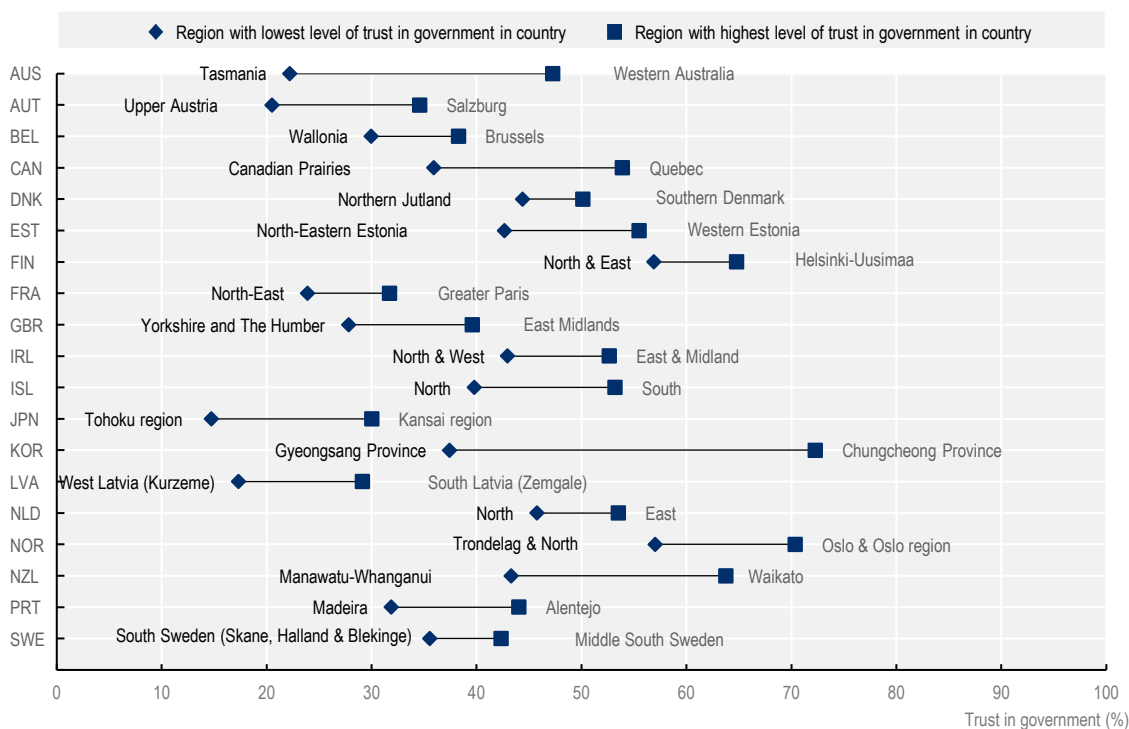
In OECD countries, regional inequalities contribute to significant variations in trust in government. The OECD Survey on Drivers of Trust in Public Institutions (also known as the OECD Trust Survey) (OECD, 2022^[24]), which covers 20 OECD member countries, reveals substantial intra-regional trust variations. These variations range from a less than 10 percentage point difference between the most and least trusting regions in Denmark and Sweden to a more than 30 percentage point difference between the most and least trusting regions in South Korea (Figure 2.2). The data suggest that trust deficits in government have a territorial cleavage in many OECD countries.

Long-term industrial decline is one factor that can contribute to regional differences in levels of trust in government. Poor short-term labour market outcomes and uneven access to quality public services, such as healthcare and education, can also contribute to territorial disparities in trust in government. Unfortunately, regions in industrial transition typically demonstrate some combination of these factors: they are experiencing long-term industrial decline, tend to have higher levels of unemployment and poorer outcomes in healthcare and education, which can be linked to service quality and/or service accessibility.

Empirical findings from OECD countries indicate that regions characterised by lower levels of trust in government can be classified into two main groups (Dijkstra, Poelman and Rodríguez-Pose, 2020^[25]): first, the comparatively wealthy areas that have experienced long-term economic decline; second, the middle-income regions that struggle to sustain economic growth due to a lack of innovation, primarily including rural areas and small or medium-sized cities. Many regions in industrial transition tend to be characterised by these structural factors. Citizens in each of these regional groups are at risk of succumbing to the geography of discontent (Box 2.4).

Figure 2.2. Regional disparities in national government trust, 2021

Share of respondents that trust the national government in OECD regions with highest and lowest level of trust by country, 2021



Source: Based on OECD (2022^[24]), *Building Trust to Reinforce Democracy: Main Findings from the 2021 OECD Survey on Drivers of Trust in Public Institutions*, <https://doi.org/10.1787/b407f99c-en>.

Box 2.4. Findings from the OECD scoping paper on “Understanding and tackling the territorial drivers of trust in government”

The OECD scoping paper “Understanding and tackling the territorial drivers of trust in government”, was completed in 2023, in support of a closed discussion among delegates of the OECD Regional Development Policy Committee (RDPC). It takes stock of the existing literature on territorial disparities in government trust. In particular, it looks at variations in trust levels among OECD countries and territories, the policy levers that may help to rebuild trust and areas for future OECD research.

The paper finds that trust deficits in government have a territorial cleavage in many OECD countries (see Figure 2.2). In part, these disparities reflect the differing levels of success that national and subnational governments have had in dealing with their citizens’ challenges and needs. Key factors that contribute to higher and lower levels of government trust in regions include a lack of economic dynamism and opportunities, poor regional labour market outcomes and disparities in access to and quality of local public services. Unless appropriate action is taken by policy makers to address regional disparities, they have the potential to contribute to a growing geography of discontent, which could fuel decreasing trust in national parliaments and increasing votes for anti-system parties.

Source: Based on OECD (2023^[14]), “Understanding and tackling the territorial drivers of trust in government”, Unpublished.

Advancing industrial transformation through experimental governance and policy making

Experimental governance involves a process of trial and error with new tools, methods and approaches when designing and implementing policy to improve development outcomes. With respect to regional development, it can be applied towards fostering innovation and economic growth in the public and private sectors, which in turn supports industrial transition (Wolfe, 2018^[26]).

Through experimental governance, regions in industrial transition can explore innovative approaches to address challenges that are specific to their context. This may involve piloting new policies, programmes or projects that encourage economic diversification, foster sustainable practices, promote entrepreneurship and innovation or support the reskilling and upskilling of the workforce.

Experimental governance offers policy makers a number of potential benefits, including the following (OECD, 2022^[27]):

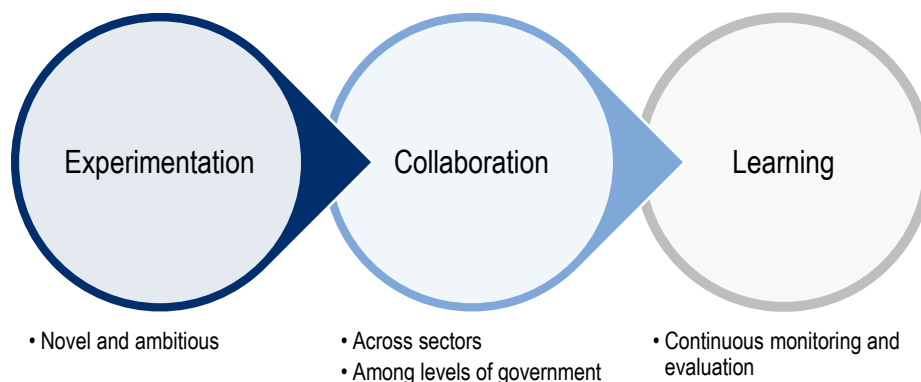
- **Evidence bases:** Evidence is gathered *ex ante*, in process and *ex post*, which can help policy makers better understand the problem at hand, design a more targeted intervention and understand what works and does not, in order to make better-informed decisions over time.
- **Innovation:** Space is created to explore innovative ideas in policy or project design and implementation.
- **Adaptability:** Initiatives are designed in an environment where adaptation or adjustment of the initial idea due to unforeseen circumstances or early signs of difficulty is possible – and encouraged in order to maximise the potential for success.
- **Risk management:** Small-scale testing of policies or initiatives allows policy makers to better identify and mitigate potential risks and unintended consequences, increasing the possibility of upscaling.
- **Cost-effectiveness:** Introducing a new concept at a smaller scale in order to better determine immediate and longer-term costs of policy options, in terms of capital (investment cost) as well as costs/benefits for firms and communities.
- **Learning and improvement:** Policy makers are given an opportunity to learn or reinforce their skills, and learn from successes and failures, promoting continuous professional development and improvement in policy design and implementation.

Experimental governance can be thought of in three related dimensions (Figure 2.3). First, experimental governance itself is a policy approach that emphasises novelty and ambition, for example by focusing on resolving large-scale societal challenges. Inherent to this dimension is an acceptance of risk by policy makers. Because experimental approaches involve testing new ideas and policies in real-world settings, there will always be some level of uncertainty and risk involved. Second, the concept of collaboration in experimental governance involves engaging a broad range of stakeholders, including citizens, businesses and government officials, in designing and implementing policies that are more responsive to local needs and conditions. Third, learning from experimental governance emphasises a continuous process of monitoring and evaluation, whereby policy makers continually evaluate the effectiveness of their policies and make adjustments based on data analysis and feedback from stakeholders. This approach can help to build trust and support among stakeholders and increase the likelihood of successful policy outcomes (Marques, n.d.^[28]).

Adopting an experimental governance approach is not without its challenges, however. Experimentation involves risk-taking and can lead to failure, both of which are unsettling concepts in a policy environment, although inherent in an entrepreneurial one (Huggins, Morgan and Williams, 2014^[29]). It also requires sufficient institutional capacity among subnational public bodies to partner with non-governmental actors (e.g. the private sector, academia, civil society and citizens) and to communicate effectively with them

regarding the rationale, risks, costs and benefits of an experimental initiative (OECD, 2020^[30]). Furthermore, it depends significantly on the political will and support given to national and subnational policy makers and civil servants to be creative and assist in scaling up their experiment if it is successful. Ultimately, experimental governance requires a shift in the public sector mindset and culture towards embracing uncertainties (Wolfe, 2018^[26]).

Figure 2.3. Three dimensions of experimental governance for regional innovation policy making



Source: Marques, P. (n.d.^[28]), “The role of experimental governance in regional innovation policymaking”, Unpublished.

How does experimental governance benefit regions in industrial transition?

When properly designed and executed, an experimental approach can enable public, private and third-sector stakeholders to work together and find joint solutions to common problems through trial and error. Notably, it can be a useful instrument for testing a new public policy, policy tool or delivery model before rolling it out more widely. Experimentation may also help test an initiative in one sector or industry before transferring it to another. Effective scaling of policy experiments can expand their reach and impact while allowing them to address industrial transition challenges on a broader scale (OECD, 2022^[31]).

An experimental approach is, however, closely intertwined with the notion of learning from policy successes and failures. To benefit industrial transition as much as possible, experimentation requires stakeholders to be flexible and all levels of government to be open to scaling up pilots if they have successfully met their objectives and are deemed appropriate elsewhere. It also requires an openness to learning from policy failures and making commensurate adjustments to implementation where they are needed to ensure greater success (OECD, 2019^[7]; Wolfe, 2018^[26]). Learning from successes and failures is best achieved when there is a system in place to monitor and evaluate the experiments through timely data collection and analysis of relevant information.

Applying experimental governance and policy arrangements to regions in industrial transition

Applying experimental governance and policy arrangements to regions in industrial transition can foster ambitious, collaborative and learning-oriented policy making and offer a valuable alternative to traditional policy models. Such an approach focuses on making the most of local knowledge to identify objectives, priorities and effective interventions and, as such, is inherently place-based. By its very nature, it can generate the space for policy makers to craft and implement new initiatives based on a local (bottom-up) concept.

At the same time, however, its success can also depend on higher levels of government establishing appropriate regulatory frameworks or guidelines, as well as on appropriate learning mechanisms. In the case of East and North Finland, for example, the European Commission grant offered the possibility of testing a new and more direct approach to funding for R&D projects, which was praised by beneficiaries, as it meant that they had to dedicate less time to administrative processes. At the same time, it was not possible to scale up the initiative due to national regulations. A re-evaluation of the regulatory framework is underway, which could lead to similar initiatives being allowed to be implemented, albeit with adjustments to the format. Thus, the pilot was successful in meeting its objectives and also provided a learning opportunity for policy makers at all levels of government.

When policy experiments meet their objectives, it is important to actively share the results with other policy makers, stakeholders and the broader public (OECD, 2022^[27]). This can be done through various means, such as case studies, reports, workshops, conferences, peer exchange opportunities or online platforms. By showcasing successful policy experiments, policy makers can inspire others to adopt similar approaches, learn from good practices and adapt them to their specific contexts. Promoting learning is particularly important among regions in industrial transition, as they may face similar challenges and can benefit from knowledge sharing on appropriate solutions and other experiences.

Experimental governance can also be promoted through investment in education and training (OECD, 2022^[27]). This means equipping policy makers with essential knowledge about policy experimentation and its usefulness, and how to apply it to policy initiatives targeting industrial transition. However, it depends on providing the necessary resources, such as funding and technical assistance, to encourage and facilitate the active participation of policy makers and enterprises.

Conclusion

Regions in industrial transition face significant challenges that can profoundly affect their labour markets, productivity and overall quality of life for residents. The decline of traditional industries and the need to adapt to new economic realities can result in job losses, lower incomes and a perceived or real lack of employment opportunities. Meanwhile, successful industrial transition depends on effective governance mechanisms, including cross-sectoral and cross-regional co-ordination, sufficient resources and engagement with external stakeholders. These elements can help to build social capital, by spurring reinvestment in local communities and helping to improve the quality of public and private governance (McCann, 2023^[8]).

Experimental governance – e.g. innovative approaches to governance arrangements and policies – is characterised by novelty, ambition, collaboration and learning. It can play a crucial role in advancing transformation and fostering innovation in industrial transition regions. However, implementing experimental governance requires overcoming or managing risk aversion, building institutional capacity and shifting the public sector mindset. Despite these challenges, applying experimental governance to policy initiatives for industrial transition can lead to more effective and place-based policy outcomes. The added value to such an approach is it permits testing, learning and adaptation before scaling up or transferring to other sectors. Overall, embracing experimental governance offers a promising pathway for regions seeking to navigate industrial transition and promote innovation-driven development.

Annex 2.A. The EC-OECD Pilot Action on Regions in Industrial Transition

In 2018, the European Commission Directorate-General for Regional and Urban Policy (DG REGIO) with support from the OECD launched the Pilot Action on Regions in Industrial Transition to support ten regions and two countries⁴ in industrial transition to prepare their S3s and innovation policies for the 2021-27 period. The action was designed in two phases. The OECD supported the first phase with a series of five thematic workshops held with two cohorts of participants, each including five regions and one country. The findings from these workshops were collated into the synthesis report [*Regions in Industrial Transition: Policies for People and Places*](#) (OECD, 2019^[7]).

As part of the project, 8 of the original regions and the 2 countries received a EUR 300 000 grant from DG REGIO as well as tailored advisory services to design an HIA that could support their industrial transition strategies.

The OECD is supporting the European Commission with an assessment of each HIA. The aim is to take stock of the potential benefits of different types of HIAs on industrial transition and of the policies that support them. Each assessment considers the actual or expected results of individual HIAs through an understanding of their objectives, activities, governance mechanisms and experimental nature. The in-depth analysis also explores how each pilot region/country expects that their individual HIA will contribute to their industrial transition and advance their S3s and governance.

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Notes

¹ The Rust Belt is a US industrial region traditionally encompassing the states of Illinois, Indiana, Michigan, Missouri, New York, Ohio, Pennsylvania, West Virginia and Wisconsin.

² The technical definition of green-related jobs could be found in OECD (2023_[19]), *Job Creation and Local Economic Development*, <https://doi.org/10.1787/26174979>.

³ 2015-21 percentage variations are as follows: Cantabria (20.6%); Centre-Val de Loire (15.4%); East North Finland (5.9%); Grand Est (14.2%); Hauts-de-France (20.9%); North Middle Sweden (15.1%); Wallonia (16.8%); Lithuania (27.7%); Slovenia (19.9%); European Union (13.4%). 2021 figures not available for Greater Manchester.

⁴ The regions are Cantabria (Spain), Centre-Val de Loire (France), East and North Finland (Finland), Grand Est (France), Greater Manchester (United Kingdom), Hauts-de-France (France), North Middle Sweden (Sweden), Piedmont (Italy), Saxony (Germany) and Wallonia (Belgium). The countries are Lithuania and Slovenia.

3 Towards a governance and action framework for industrial transition

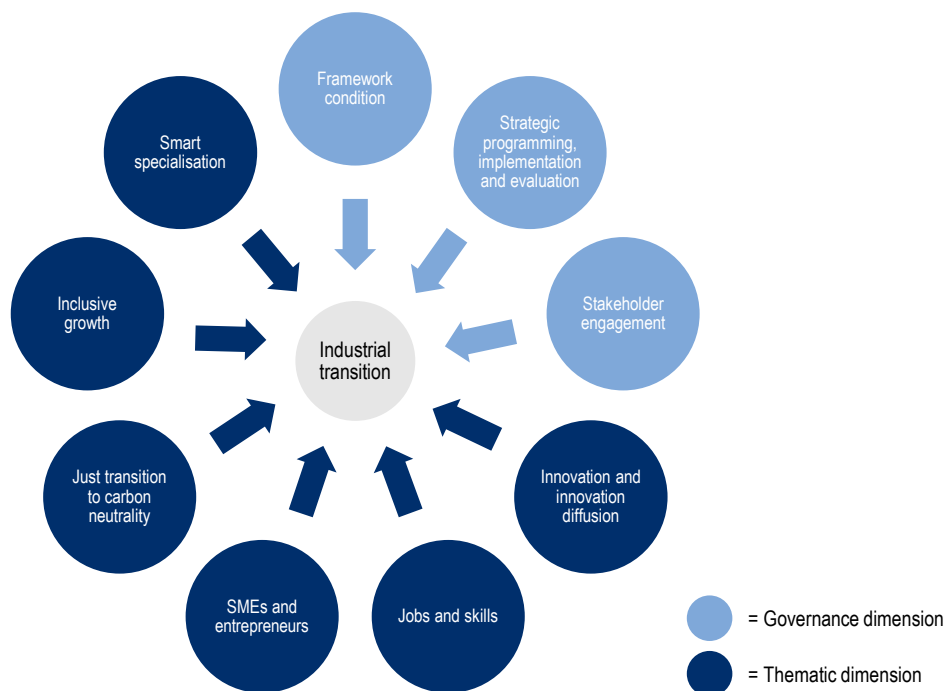
The chapter presents a framework of nine dimensions to consider when developing initiatives to support industrial transition – three of them associated with governance practices and six with thematic interventions. It also highlights lessons from experimental initiatives – High Impact Actions – undertaken by regions and countries in the European Union. These lessons can provide insights for policy makers interested in experimental governance and policy approaches for industrial transformation. Additionally, the chapter explores the scalability of these approaches and their intersection with smart specialisation strategies.

Introduction

At its outset in 2018, the OECD’s work with regions in industrial transition was dedicated to identifying pathways that would help decision and policy makers ground their region’s development in relevant industrial change. Innovation and innovation diffusion have been and remain a cornerstone of this effort. However, the aim was also to identify other policy dimensions that could generate change or soften potential negative consequences. To this effect, not only were policy levers identified to promote innovation and its diffusion but other thematic dimensions, such as jobs and skills, small and medium-sized enterprises (SMEs) and entrepreneurship, a just transition to carbon neutrality and greater inclusiveness, were also identified as playing a role in industrial transition. Policy levers to boost these aspects were also explored. In the past five years and with the experience of eight of the project’s original pilot regions and the two original countries,¹ practical experience has been applied to round out the initial thinking. This has led to the development of revised and new ideas about what works in the relevant thematic areas. It also resulted in the identification of three governance dimensions that cannot be ignored when tackling industrial transition: framework conditions, strategic programming and active stakeholder engagement.

In total, this synthesis report has identified nine dimensions supporting industrial transition at the regional and, potentially, national levels (Figure 3.1). Not all dimensions will require the same level of attention in a given region. Yet they each contribute to industrial transition and focusing on one alone is unlikely to be sufficient to generate the scale of change necessary to lift these regions, re-energise their industrial bases and reinvigorate the well-being of their communities.

Figure 3.1. Framework dimensions to industrial transition



Source: Based on current work and adapted from OECD (2022^[1]), *Regions in Industrial Transition: Policies for People and Places*, <https://doi.org/10.1787/c76ec2a1-en>.

Underlying these dimensions is the notion of experimentation – be it in governance arrangements or policy programming. It is not necessary to generate revolutionary shifts – often it is best to base action on already understood concepts. Rather, experimentation can be a function of the way in which governance

arrangements or policies are implemented. This project has seen policy makers experiment by adjusting governance arrangements (e.g. funding mechanisms or stakeholder engagement) or rethinking the approach and design of policy initiatives (e.g. promoting regional attractiveness or actively working with micro enterprises). Experimenting, or piloting, an initiative can give policy makers a better idea of what works in a more contained way. Through these experiments, regions can gather data, test hypotheses and learn from the outcomes in order to inform future policy decisions. Experimentation contributes to evidence-informed decision making, generates active collaboration between policy makers and stakeholders, and supports learning by doing. It also can help promote greater flexibility and adaptability – not only in the policies that are designed but in how policy makers approach a problem. Experimentation often occurs on a relatively small scale – in one territorial area, focusing on one general programme or project – which can make it less costly for policy makers to implement than launching a policy or programme throughout a territory or sector without knowing whether it will work.

This chapter introduces the framework in Figure 3.1 for policy makers to consider when tackling industrial transition and elaborates on each area, beginning with the governance dimensions, then turning to the five original dimensions covered in the OECD report *Regions in Industrial Transition: Policies for People and Places* (2019^[2]). The insights and lessons shared are based on past and current work with eight regions and two countries in the European Union undergoing a process of industrial transition. Each were initial participants in a pilot action launched by the European Commission in 2018, in collaboration with the OECD. As part of this pilot action, participants were given an opportunity to design and implement a High Impact Action (HIA) that could help them experiment with a new or different approach to advancing industrial transition in their regions. The HIAs, which were carried out in 2020 and 2021, ranged from supporting SMEs (Hauts-de-France, France) to improving traditional firm performance (Centre-Val de Loire, France), ensuring social inclusion in companies (Greater Manchester, United Kingdom) and setting up a transition lab on low-carbon economy and resource efficiency (North Middle Sweden). For the most part, the HIAs focused on innovation, often combined with the transition to a low-carbon economy or other environment-related initiatives (e.g. the circular economy), industry and firm performance, or inclusive growth/social inclusion. A brief description of each HIA and the insights gained, as well as a link to the full case study, can be found in Chapter 5 of this report. In addition, in each of this chapter's boxes featuring a participant, there is a link to the case study.

This chapter presents each dimension of the framework, focusing on some of the challenges experienced in the processes of industrial transition as identified in the overall project. Moreover, it uses the experience of the pilot action participants and their HIAs to highlight how some of these challenges were addressed. The concept of experimentation runs throughout this chapter as a methodology for a new approach to the persistent and complex problems associated with industrial transition, such as job displacement, economic restructuring, environmental sustainability and social equity.

Dimension 1: Framework conditions for industrial transition

The success of industrial transition initiatives depends first and foremost on the existence of supportive framework conditions. Framework conditions can take both intangible and tangible forms. Examples of the former include political support and cultural factors such as interpersonal trust. Examples of the latter include regulations and legislation, administrative processes or requirements and funding or financing conditions. Framework conditions are typically difficult if not impossible for regional policy makers to change on their own but policy makers can sometimes influence these conditions in order to advance policy actions that support industrial transition.

To take the example of intangible framework conditions, strong and well-articulated political support cannot be controlled by policy makers; yet it also underpins their legitimacy to explore new approaches to managing industrial transition. It is necessary not only for the initiative in question but also for the teams

managing and implementing the experiment. Buy-in from the top makes association with an experiment less risky and can also help future scaling up (i.e. to more communities or other regions) or scaling out (i.e. to other sectors), should the experiment succeed. In North Middle Sweden for example, there was strong political backing for establishing a challenge lab (Box 3.3) to explore how hydrogen could advance circular and low-carbon industrial transformation, and ultimately contribute to improving well-being in the region. Political support can also encourage experimentation and risk-taking. In Greater Manchester, United Kingdom, the Good Employment Charter was borne out of political support for addressing labour market issues, such as low pay and insecure work, through innovative, voluntary bottom-up initiatives (Box 3.10). Political support was also evident in Cantabria, Spain: here, the Department of Technological Development and Industrial Entrepreneurship was entrusted with designing and implementing a programme encouraging rural agri-food micro enterprises and SMEs to increase competitiveness by adopting more energy-efficient or renewable production methods. This support was one element lending weight and legitimacy to the activities of the project team with regard to other government departments that were involved in the initiative, as well as external stakeholders.

Similar to intangible framework conditions, tangible framework conditions also affect the freedom of action of regional policy makers. For example, legislative or regulatory frameworks are often set at the national or supra-national levels. However, while regions are limited in their ability to control most framework conditions, there are times when it is possible to experiment within set parameters. For example, what if regions could provide financial support to enterprises for example, as was experimented in East and North Finland? What if it were possible to reduce the administrative burden for project beneficiaries, as was part of the Slovenian experiment?

For both East and North Finland, and Slovenia, the experimental process was a (temporary) adjustment or a “work around” to a framework condition. In East and North Finland, part of the project relied on financing a voucher system for firms directly by the regional councils. This faced the practical obstacle of Finnish legislation that does not permit regional councils to directly fund enterprise development. Yet, as the funding for the experiment came in the form of a direct grant from the European Commission, there was no national or established European Union (EU) funding mechanism being channelled through the Finnish government, effectively bypassing the obstacle. While the experiment was deemed a success, overall, the region itself is unable to institutionalise the activity due to the aforementioned legislative restrictions. However, another solution was found, given the initiative’s success. Adjustments were made to permit the country’s 15 Centres for Economic Development, Transport and the Environment (ELY Centres) to directly finance SMEs that deal with higher technology readiness projects, which they were not doing before, at least not with this explicit focus. This was considered a positive outcome of the region’s HIA. In addition, during the pilot, the regional councils requested additional responsibilities related to the financing of enterprises because they consider themselves better informed about the strengths and weaknesses of regional businesses and, thus, can promote innovative business activities more effectively (OECD, 2022^[3]). This, too, is an adaptation to framework conditions as roles and responsibilities of subnational governments are frequently set through legislation and can require higher-level approval for adjustments.

The challenge represented by the administrative burden is one that confronted most if not all participants. In a number of cases, including in Slovenia and Wallonia in Belgium, this was an issue that was targeted by the HIA as a way to encourage beneficiaries to take up industrial transition initiatives. In Slovenia, part of the experiment centred on reducing the administrative burden for project beneficiaries and building flexibility to adjust projects if necessary (OECD, 2023^[4]). Because the requirements associated with funds obtained through the government can be quite burdensome, the experiment was delivered through a third-party participant that was not obligated to follow the Ministry of Economic Development and Technology’s funding rules when designing a funding call, in this case the Slovenian toolmaker association TECOS. Having a non-governmental body, with few bureaucratic structures, responsible for implementing an innovation-oriented initiative was an experimental model never applied in Slovenia. In Wallonia, the

simplified grant allocation introduced, while not very attractive to SMEs (many of whom felt the grant value of EUR 15 000 was low for their project needs), appealed to start-ups, helping advance the experiment (OECD, 2023^[5]).

These experiences highlight that, while framework conditions may not always be auspicious for an experiment, there are ways to work within the set parameters, even if temporarily. This allows policy makers, decision makers and stakeholders to answer the “what if” questions mentioned above in a relatively safe manner.

Dimension 2: Strategic programming, implementation and evaluation for industrial transition

Strategic programming, implementation and monitoring and evaluation are at the crux of realising industrial transition and, unlike with framework conditions, policy makers can have a direct impact. This was highlighted by the regions and countries participating in this work. Being strategic about the programming to support transition is especially important with experimental approaches, which depend on clear guidelines in their design and implementation. Equally important are the implementation mechanisms used to advance industrial transition initiatives – which were found to depend greatly on clear governance structures, effective co-ordination and resource support. Finally, establishing monitoring and evaluation mechanisms is fundamental, certainly for understanding when various transition objectives have been met, but – in a more immediate manner – for knowing if an experimental (or other) policy or programme to advance industrial transition is successful.

Strategic programming for industrial transition

Industrial transition, and the programming that supports it, appears to be guided by a variety of regional, national and supra-national strategic frameworks and policies. At its core, industrial transition is about regional development and it can dovetail very neatly with national and regional development strategies, innovation policies and smart specialisation strategies (S3s). Frequently, however, other strategies guide specific aspects of industrial transition, for example policies for urban or rural development, SMEs, skills and training, and supra-national strategic frameworks, such as the European Commission’s Cohesion Policy programming, with its five policy objectives.

The ability for industrial transition initiatives to support broader strategies became apparent through the work with the various regions and countries participating in this project. The challenge for policy makers, however, is to ensure that the links are strong and that actions are coherent and mutually reinforcing. For example, Greater Manchester’s experiment with its Good Employment Charter funnelled into the Greater Manchester Local Industrial Strategy 2019, which identifies “[improving] productivity, wages, and job creation in all sectors” as a core priority for the region. In Slovenia, the Ministry of Economic Development and Technology developed the Slovenian Industrial Strategy (SIS) for the period 2021-30, in line with current European and domestic strategic documents and guidelines focusing on “green, creative and smart development”. The aim is to enhance the competitiveness, productivity and innovation of Slovenia’s economy by promoting greater inclusion and better positioning of Slovenian enterprises in international value chains. Slovenia’s experimental initiative assisted SMEs in modernising production processes to improve the efficiency, productivity and carbon intensity of production. It also generated a greater understanding of how the country’s industrial sector could contribute to ensuring that the green and digital transitions help drive the country’s industrial transition (OECD, 2023^[4]). In France, the Grand Est region developed plans to support the relocation and redevelopment of industry, including through its S3, in which its Business Parks for the Future pilot initiative is embedded. In this way, it is also complementing a series of national frameworks that can support industrial transition.² In each case, the experimental initiative

contributed to furthering local, national or supra-national strategic objectives that are linked to industrial transition.

There is another dimension to strategic programming with respect to industrial transition that is focused on the transition initiatives themselves. The HIAs highlight the need for a clear strategy to advance the transition programming – as seen in Centre-Val de Loire, France. The project team designed a comprehensive and highly strategic approach to providing industrial SMEs with assistance in recruiting and attracting the highly qualified profiles required, while also building regional attractiveness for professional and business relocations (OECD, 2023^[6]).

In addition to having a clear strategy, it was apparent that a flexible mindset with respect to the strategy was just as important, in other words not to be wedded to the strategy itself but rather to what the policy maker sought to accomplish. This was particularly evident in Cantabria, Spain. The initial experiment was to develop rural innovation hubs that would provide training opportunities, mentoring programmes, knowledge exchange and networking opportunities to support new businesses in rural areas. However, the COVID-19 pandemic halted this undertaking. The project team decided to shift the approach from developing the hubs to selecting a small set of SMEs and micro enterprises and providing tailored support to train, mentor, share knowledge and grow networks (OECD, 2023^[7]).

Finally, experimentation can provide an opportunity for policy makers to build their strategic skills through their own learning-by-doing process, which in turn can help improve the governance and institutional quality of a regional or national public administration. This was the case in Lithuania. When it developed its experimental action, there was limited internal experience with developing a comprehensive strategy to promote a circular economy, as in the past approaches had been concentrated on individual initiatives (e.g. eco-innovation, recycling strategies and analysis of the potential of the bioeconomy). Through the HIA, Lithuanian policy makers not only developed a broad-based strategy for an entirely new policy area but also provided the Lithuanian government with an action plan and roadmap for how to implement it (OECD, 2023^[8]).

Governance structures, teams and funding are pivotal to success

The work with the pilot action participants also highlighted the need to have a well-developed governance structure in place, one that includes horizontal and vertical co-ordination mechanisms, clearly assigned roles and tasks, a dedicated team for implementation and sufficient financial resources.

Governance structures

Wallonia's action had a very clear, three-level governance structure, with well-defined roles and responsibilities for all stakeholders. It also established a multi-stakeholder steering committee³ tasked with overseeing the HIA's projects, facilitating the sharing and exchange of experiences among the actors involved and validating the progress of the projects. The committee encouraged the integration of different stakeholder perspectives into the decision-making process, which gave greater credibility to its actions (OECD, 2022^[9]). For example, by involving clusters and the regional innovation agency, the steering committee ensured that input was gathered from a wide range of industrial sectors in the innovation ecosystem. This, in turn, was essential for promoting tailored solutions for plastics circularity within the region's key industries. In addition, Lithuania had a solid governance structure for its HIA and established a steering group as a lead body responsible for the overall co-ordination and stakeholder engagement processes.

East and North Finland's governance structure integrated the interests of seven different regional councils. While this is generally very challenging, it was managed by establishing from the outset a clear division of tasks among dedicated staff in each of the councils. These included tasks such as evaluating proposals, managing funds and co-ordinating meetings. Not only did the clear division of roles and tasks facilitate a

smooth implementation of the experiment but it also made it easier for the HIA's beneficiaries to contact the right people when they needed support (OECD, 2022^[3]).

Dedicated teams

Establishing a dedicated and skilled team to implement experimental initiatives was common through many if not all HIAs. According to at least one of the participating regions, this was a significant factor in the success of their experiment. In Cantabria, for example, the regional government's Department of Technological Development and Industrial Entrepreneurship managed the experimental initiative, overseeing its day-to-day implementation with the support of a dedicated project co-ordinator, who managed the projects and mobilised stakeholders, and an expert in the agri-foods sector, who provided advice and helped establish a repository of firms that could be potential collaborators in the project (OECD, 2023^[7]). Greater Manchester established the Charter Implementation Unit, which had dedicated staff to fulfil three clear functions related to the charter's membership, promotion and visibility, and diffusion to potential adherents.

Financial resources

In terms of funding and financing, policy makers wishing to undertake an experimental approach to industrial transition could find it difficult to "sell" the concept based on any associated risks of trying something new or innovative rather than turning to tried and tested policy design methodologies. In this pilot action, each region and country benefitted from a direct European Commission grant to fund the design and implementation of their HIA. However, in some instances, the region or country also contributed to the initiative. This was true in Greater Manchester, for example, where the Greater Manchester Combined Authority pledged approximately 70% of the funding for the full project over three years in order to give it time to take root. In Cantabria, while the action depended on the European Union grant, the success of the initiative led the regional government to consider funding the future scaling up and/or scaling out of the initiative's concept.⁴

A key and unsurprising lesson learned with respect to implementation is that initiatives supporting industrial transition, particularly experimental ones, require dedicated resource support, primarily in terms of staff and funding. This is because the initiatives are stand-alone. While they support meeting the objectives of larger strategies, policies or programmes (e.g. innovation or new industrial policies, S3 objectives), they cannot always depend on direct support from the funds allocated to these other initiatives.

Performance measurement and ex post evaluation criteria should play a prominent role in future initiatives

Performance measurement systems with clearly defined objectives and targets for the experiment should be developed *ex ante*. Furthermore, the experiment should include an *ex post*, independent evaluation, with the evaluation criteria being established at the outset of the experiment. Not only can monitoring and evaluation mechanisms help policy makers to identify if the experiment is meeting its aims or if something needs to be adjusted, they can also offer clear evidence as to whether the experiment can be scaled up, scaled out or if it should be suspended.

In many instances, the participating regions and countries developed monitoring and evaluation mechanisms to identify if the projects supported by their HIAs were meeting established objectives. This was the case, for example, in East and North Finland, Greater Manchester (United Kingdom), Lithuania and Slovenia, all of which established clear project objectives at the outset of the initiative, in order to facilitate the monitoring and evaluation process (OECD, 2023^[10]).

In fewer cases – Hauts-de-France and Centre-Val de Loire, France, are two examples – monitoring and evaluation systems were in place for the overall HIA. Hauts-de-France established a system that, on the

one hand, monitored and evaluated if progress was being made within the firms it was working with and, on the other, if progress was being made by the HIA itself. For the latter, it collected and centralised input indicator data and produced a final report offering a retrospective examination of the HIA's progress. While this did not offer a full evaluation of the experiment's success, it did provide a starting point for reflection (OECD, 2023^[11]). In Centre-Val de Loire, each component of its HIA had a set of attributed input and output data points and measures that could help the project team determine the success of each of the HIA's activities (OECD, 2023^[6]).

Measuring the outcomes or results directly associated with the experiment was less common. This could be linked to a lesson articulated by the North Middle Sweden team: monitoring and evaluation activities that take place sufficiently far downstream of the initiative's implementation (e.g. at least 18-24 months later) are more likely to be able to capture how the cross-pollination of ideas has led to tangible innovation-related outcomes. Yet, measurement mechanisms should be in place *ex ante* to facilitate the identification of such outcomes and ideally their impact, as well as to ensure accountability for project funding (OECD, 2023^[12]). Creating a formal monitoring and evaluation system to track the progress of the pilot actions and their success, including in terms of the environmental impact of companies once new processes were adopted, their competitiveness, the development of digital skills among employees, etc., was an ambition of the team in Cantabria. This would be developed in a second stage, as it could also help share good practices among companies and industry sectors (OECD, 2023^[7]).

To improve the monitoring and evaluation of industrial transition initiatives, several actions can be considered. The first is to develop comprehensive monitoring and evaluation frameworks. These frameworks should clearly define the objectives of industrial transition and illustrate how progress towards these objectives can be effectively monitored, while also setting clear, measurable and realistic targets and associated indicators (Box 3.1). Second, information from monitoring and evaluation processes needs to be used promptly to refine industrial transition policies. This can be facilitated by equipping policy makers with the necessary expertise and skills to effectively monitor and evaluate such policies. Third, monitoring and evaluation processes need to be designed in such a way that they can be updated in line with the evolution of industrial transition objectives.

Box 3.1. Objectives and indicators for multi-dimensional monitoring and evaluation

In order to develop comprehensive monitoring and evaluation frameworks for industrial transition, it is important for such frameworks to clearly define objectives and how progress towards them can be monitored effectively. In addition, these monitoring and evaluation mechanisms should take a multi-dimensional approach. They should not only assess economic dimensions but also take into account social, environmental and ethical concerns. This can be achieved by setting clear targets and associated indicators.

Well-chosen indicators for monitoring and evaluation should have the following objectives and characteristics:

- **Specific:** Indicators must be precise and clearly defined so that there is no ambiguity about what is being measured. Targets must be detailed and state exactly what needs to be achieved.
- **Measurable:** Targets and indicators must be quantifiable. They must be designed so that progress and results can be clearly measured.
- **Achievable:** Objectives must be realistic and achievable within the time frame and resources available. Setting impossible goals can lead to demotivation and failure.
- **Relevant:** Indicators and targets must be relevant to the objectives of industrial change. They must be directly linked to the key outcomes that the transition is trying to achieve.

- **Time-bound:** Targets must have a clear timeframe within which they are to be achieved. This helps to plan and assess progress.
- **Objectives and indicators for multi-dimensional monitoring and evaluation:** There should be a clear baseline against which progress can be measured. This could be based on historical data or the current situation at the start of the transition.
- **Periodic review:** There should be a system for regularly reviewing and updating targets and indicators according to changing conditions and lessons learned.
- **Broad communication:** Targets and indicators should be communicated to all stakeholders. This includes those involved in implementing the policy, those affected by it and those responsible for monitoring progress.
- **Balanced:** The indicators selected must provide a balanced view of performance, reflecting both positive and negative outcomes, as well as short- and long-term impacts.

Source: Based on Kanyamuna, V. and M. Phiri (2019^[13]), “Who said monitoring and evaluation is not rooted in firm theoretical foundations? A review of relevant literature”, *International Journal of Humanities, Art and Social Studies*, pp. 1-23.

Dimension 3: Using stakeholder engagement to advance industrial transition

Industrial transition, particularly when driven by innovation, is a multi-dimensional and collaborative process, which can depend greatly on the effective functioning of networks. Such networks are the channels through which knowledge, resources and learning can be shared among stakeholders, each of whom has a different role to play in developing and implementing solutions to societal challenges. At the basis of this is stakeholder engagement, which was a very strong component of almost all HIAs implemented.

There are several actions that policy makers can take to ensure a high quality of stakeholder engagement when working on industrial transition initiatives. One action includes establishing a clear and effective process for identifying and engaging with different types of stakeholders. Developing tailored communication pathways that deliver clear, concise, relevant and timely information to all stakeholder groups about industrial transition initiatives can help to build their understanding and encourage participation. In particular, such communication should aim to provide stakeholders with a full line of sight on how the initiative has been designed and will be implemented. It should also delineate the initiative’s expected impact, not only at a societal level but also on different types of stakeholders (AEBR, 2019^[14]).

In Wallonia, for instance, the clear and effective communication campaign to collect ideas from public, private and civil society stakeholders on plastics-related challenges and solutions was a factor in the HIA’s success. For instance, to provide stakeholders with full transparency and clarity regarding how the initiative would be conducted and managed, the Walloon Directorate of Economic Policy prepared a detailed scoping document. Stakeholders found that the scoping document gave them a clear idea of what to expect from the initiative. Moreover, during implementation, a stakeholder community was established to co-ordinate the HIA’s extensive communication campaign. Its activities spanned social and traditional media, as well as websites and mailing lists, and was instrumental in communicating with all HIA participants, who were quickly able to access all relevant information regarding the initiative (OECD, 2023^[5]).

Another key element to effective stakeholder engagement is fostering a culture of openness, for example by welcoming feedback from stakeholders on the design and implementation of transition initiatives (OECD, 2021^[15]). Their perspectives can often be useful in bridging knowledge gaps, ensuring inclusiveness in policy design and improving the transition initiative’s effectiveness and impact. For instance, a key element that underpinned the success of Greater Manchester’s Good Employment Charter has been its extensive co-design and co-implementation process, which called upon businesses of

different sizes and from a wide range of sectors to help define a collective vision of good employment. Their inputs helped to develop a charter document that set out an ambitious vision for industrial transformation but was also economically realistic for different types of businesses to adhere to. The inclusive vision of good employment that was defined through stakeholder engagement has helped encourage a wide range of businesses to sign up for the charter (OECD, 2023_[16]).

A culture of openness in stakeholder engagement also contributed to the success of the four workshops that were conducted as part of North Middle Sweden's challenge lab initiative. The challenge lab concept engaged participants from different professional backgrounds around a shared, societal challenge and encouraged them to explore the various components of the challenge (and possible solutions) from different perspectives. As such, it was highly dependent on effective workshop design and, in particular, guided discussions that could foster as much knowledge-sharing as possible. To improve workshop design, the workshop organisers conducted interviews with participants after each workshop, in order to shed light on what participants felt had been most and least successful for encouraging knowledge-sharing. The lessons learned from these discussions were then used to improve the design of future workshops, taking an iterative approach to enhancing the implementation quality of the initiative.

Dimension 4: Advancing innovation and innovation diffusion with a challenge-oriented approach

Innovation and innovation diffusion are drivers of industrial renewal and productivity growth, ultimately helping regions in industrial transition “catch up” to more productive regions. Boosting a region's innovation capacity and ensuring that innovation diffuses outwards – or even inwards – can boost economic growth and citizen well-being over time. Yet, regions in industrial transition tend to find themselves on the mid to lower end of the innovation scale, with lower levers of digitalisation and underutilised innovation potential. For example, in East and North Finland, only 2-3% of SMEs employ digital solutions, which are one means by which businesses can grow and become internationalised at a quicker pace than others (OECD, 2023_[10]). This can be partially explained by the weak innovation ecosystems that are often found in regions undergoing industrial transformation, including a lack of a collaborative culture, which can lead to fragmentation within the innovation ecosystem. A related issue is low innovation capacity, as can be found in Hauts-de-France in France, which was ranked as a “moderate innovator” in the 2023 Regional Innovation Scoreboard. The region's overall innovation performance was below the EU average on several indicators, including collaboration among innovative SMEs and lifelong learning (EC, 2023_[17]).

A second challenge is large innovation divides. Regions in industrial transition often lag behind in innovation compared to leading regions in their country and the gap seems to grow for at least some of them. For example, while EU data suggest that Sweden is the European Union's most innovative member state, they also indicate that there is a growing gap between its most and least innovative regions (EC, 2023_[17]). The 2021 Reglab Innovation Index identified two of North Middle Sweden's three counties (Dalarna and Gävleborg) as being the least innovative in the country and the third (Värmland) as being less innovative than the national average (Region Värmland/Region Dalarna/Region Gävleborg, 2022_[18]). Low innovation capacity has been found to be particularly prominent among its SMEs (Region Värmland/Region Dalarna/Region Gävleborg, 2022_[18]).

Generally, regions, including those in industrial transition, use a similar set of instruments to advance innovation and innovation diffusion, such as research and development (R&D) funding, technology transfer, business incubators, education and training support, and cluster development. Yet, their implementation can face governance and policy challenges when applied to transitioning regions for a number of reasons.

First, these regions may have more limited financial and human resources, which reduces their capacity to invest in R&D, technology transfer and other similar costly instruments. Second, some regional

governments may lack the necessary institutional capacity to effectively design, implement and monitor large-scale innovation and innovation diffusion policies and programmes. Third, there may be a lack of trust and co-operation among different stakeholders, including government, academia and the private sector in regions in industrial transition, affecting the exchange and development of new ideas, methods or products (OECD, 2020^[19]). While these traditional instruments are highly valuable in all regions, maximising their potential for success may require creative adaptation and new ways of applying them in regions undergoing industrial transition.

Taking a challenge-oriented approach to generating innovation and innovation diffusion

The work with pilot regions and countries highlighted the positive results of a challenge-oriented approach to policy making and its potential to provide a strong foundation for innovation and innovation diffusion in regions in industrial transition. A challenge-oriented approach, often also labelled mission-oriented, focuses on tackling a large-scale cross-sectoral, societal challenge (e.g. how to deliver a just and inclusive green transition) in a holistic manner, rather than by merely seeking to tackle one of its constituent parts (e.g. how to boost renewable energy deployment).

A challenge-oriented approach typically involves harnessing the collective expertise of a wide range of relevant stakeholders to identify challenges, collaborate and co-develop innovative policy solutions, and test their effectiveness through experimentation. It also means that policy makers should ensure that sufficient human and financial resources are allocated to support these collaborative efforts (Mazzucato, Kattel and Ryan-Collins, 2020^[20]). This approach differs starkly from traditional product and service-based innovation, which is need-based and focused on the improvement of a specific product or process, rather than large-scale industrial transformation.

In addition, a challenge-oriented approach can help overcome a series of governance challenges associated with most complex and multi-level policies, including development in transitioning regions:

- **Co-ordination challenges:** Addressing complex societal challenges requires collaboration across multiple sectors and among different levels of government. A challenge-oriented approach can help facilitate this collaboration by bringing together stakeholders from different sectors and disciplines to identify and work towards a shared goal.
- **Innovation challenges:** Solving complex societal challenges often requires new technologies and business models. A challenge-oriented approach can help stimulate innovation by providing funding and support for new ideas and encouraging collaboration among researchers, entrepreneurs and other stakeholders.
- **Implementation challenges:** Even when solutions to complex societal challenges are identified, implementing them can be difficult. A challenge-oriented approach can help address implementation challenges by providing funding and support for pilot projects and testing new ideas before they are scaled up.
- **Participation challenges:** Traditional policy approaches can sometimes exclude certain groups or stakeholders from the decision-making process. A challenge-oriented approach can help address participation challenges by engaging a diverse range of stakeholders in the problem-solving process and ensuring that their perspectives are heard and valued.

While not all regions in industrial transition are low innovators, many are experiencing growing gaps with their more innovative peers. In addition, low innovation capacity is particularly prominent in SMEs located in regions in industrial transition (OECD, 2019^[2]). Furthermore, many of these regions may face additional threats to their region's innovation ecosystems, including a lack of long-term commitment by large firms to operate in the region and resistance to change among key stakeholders in the regional innovation ecosystem (OECD, 2022^[21]).

Effective collaboration among a wide range of innovation actors in the public, private and third sectors can help manage the innovation gaps by improving the innovation capacity of regional stakeholders. The broad, cross-sectoral nature of collaboration embedded in a challenge-oriented approach has the potential to do just this, including by building knowledge and networks across different industries and stakeholder groups. This, in turn, can lay a strong foundation to diffuse innovative solutions to societal challenges. The region of Wallonia provides an example of how a challenge-oriented approach helped its SMEs strengthen their innovation capacities (Box 3.2).

Box 3.2. Using a challenge-oriented approach to enhance regional innovation capacities in Wallonia, Belgium

Wallonia, Belgium, tested a challenge-oriented innovation call to promote innovative ideas that could support SMEs and address market needs and societal challenges within the plastics value chain. The approach involved collaborating with regional stakeholders, including firms, local authorities, civil society and environmental non-governmental organisations (NGOs), to identify and define specific societal problems related to the plastics industry, such as plastic recycling. Working across sectors and stakeholders, a comprehensive and effective policy response was developed to address these problems.

This approach is particularly useful in regions undergoing industrial transition, where quick and effective action is needed to build innovation capacities. Wallonia's success in fostering a collaborative environment among innovation actors around the circularity of plastics was a testament to the effectiveness of this approach. The initiative helped strengthen the regional innovation ecosystem by facilitating partnerships within the plastics industry and leveraging Wallonia's many regional innovation actors.

Source: Based on OECD (2023^[5]), "Wallonia's High Impact Action: "Plastics Go Green and Circular" Challenge - In-depth assessment", https://www.oecd.org/regional/governance/RIT_HIA_Wallonia.pdf.

The example of Wallonia shows that a challenge lab approach can provide significant added value to the policy mix used in regions in industrial transition, if well designed:

- Designing calls for proposals with active participation from innovation stakeholders to identify challenges and solutions can generate project ideas that are well aligned with local territorial, economic and social specificities. Moreover, the challenge-oriented approach ensured that the proposed innovative solutions could meet market needs, increasing their potential for success and long-term sustainability.
- A challenge-oriented approach helps regions tap into the collective expertise and resources of a range of stakeholders and potentially lead to more innovative and effective solutions to the challenge(s) at hand may be particularly important for regions in industrial transition that are struggling with job losses, declining economic growth and a lack of investment in new industries.
- By focusing on specific challenges and identifying the most promising solutions, a challenge-oriented approach can also guide stakeholders in prioritising their efforts and investments, ensuring that resources are directed towards the areas of greatest need. This can help maximise the impact of limited resources and accelerate industrial transition.
- Learning is part of a challenge-oriented approach as the problem-solving process generates new knowledge and insights that can be applied to future challenges.

North Middle Sweden offers another example of a region that used a challenge-oriented approach to advance its sustainable industrial transition while also aiming to support the well-being of its residents (Box 3.3). The approach was slightly different from the one taken by Wallonia. Instead of using challenge-based public calls to stimulate innovation, the region tested a challenge lab approach, which is a challenge-driven innovation and co-creation platform developed to help transition to a more sustainable society. The cross-sectoral innovation knowledge and networks that were generated through four challenge lab workshops provided a strong foundation for innovation diffusion related to the green transition in North Middle Sweden. In particular, they supported the *ex post* development of a number of cross-sectoral regional projects in the hydrogen space, which stakeholders felt would not have taken place had it not been for the workshops.

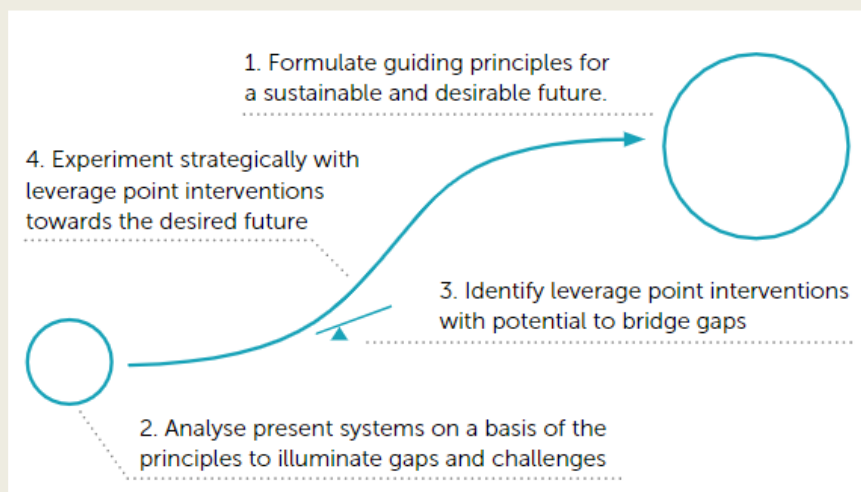
Box 3.3. The Challenge Lab North Middle Sweden

In 2019, the region of North Middle Sweden established a space for collaborative transformation and trust-building in the region: the Challenge Lab North Middle Sweden.

As a first step, the region formed a working group to identify and frame the challenge with which the lab should contend. The region decided to focus on how to develop hydrogen production, because of its regional focus on sustainable production and advanced manufacturing.

As a second step, the challenge lab designed a series of workshops to: i) establish guiding principles; ii) analyse the current situation and gaps; iii) focus on the potential in the region to bridge the gap; and iv) identify priority actions and next steps (Figure 3.2).

Figure 3.2. Primary steps in a back casting process in the challenge lab



Source: (Challenge Lab NMS, n.d.^[22])

An important focus of the challenge lab was stakeholder engagement from the region's quadruple helix (e.g. industry, academia, civil society and the public sector). The lab was instrumental in building closer relationships among actors that did not previously co-operate. Not only did it strengthen co-operation activities among the different partners, it led to joint applications for EU projects, generating opportunities for collaboration.

The experimental design and effective implementation of the challenge lab workshops created a platform for the cross-pollination of new knowledge and networks that could further support the integration of hydrogen into North Middle Sweden's energy system. Subsequently, the lab has played an important role in supporting the fruition of regional projects in the hydrogen space, both through the Challenge Lab Seed Fund and through the external collaboration of challenge lab participants on new hydrogen projects.

Source: Based on OECD (2023^[12]), North Middle Sweden's High Impact Action: The North Middle Sweden Challenge Lab - In-depth assessment, https://www.oecd.org/regional/governance/RIT_HIA_North_Middle_Sweden.pdf

The challenge lab approach in North Middle Sweden shows how bottom-up and collaborative industrial transition initiatives can help build trust among local stakeholders and in government. This matters particularly for regions in industrial transition as they may experience economic uncertainty, social upheaval and a loss of trust in traditional institutions. A challenge-based approach can help build trust in regions in industrial transition in several ways:

- **Increased transparency:** Challenge-based policy making involves engaging citizens and stakeholders in the policy-making process. This can help increase transparency and build trust by providing opportunities for citizens to participate and have their voices heard.
- **Results-oriented action:** A challenge-based approach is focused on achieving specific outcomes or goals. This can help build trust by demonstrating that the government is committed to delivering measurable results and is accountable for its actions.
- **Collaboration:** A challenge-based approach involves working collaboratively with stakeholders, including businesses, civil society and academia. This can help build trust by demonstrating that the government is listening to diverse perspectives and is committed to working together to address complex challenges.

Summary of main insights from using a challenge-oriented approach to support regional innovation diffusion

Applying a challenge-oriented approach to an industrial transition challenge, such as alternative energy sources or plastics recycling, requires careful planning and execution to ensure that it remains effective and relevant as it is implemented. The following considerations should be taken into account by policy makers in regions in industrial transition wishing to adopt the approach:

- **Stakeholders with sufficient knowledge and authority to make innovation-related decisions must be engaged.** Involving high-level government and non-governmental stakeholders that have technical knowledge of the innovation-related challenges and opportunities at hand is important in a challenge-oriented action for ensuring that collaboration is both substantive and focused on concrete results. In the case of the challenge lab workshops, the lack of high-level political participation and the lack of stakeholders with technical knowledge of energy production were described as two factors that may have limited knowledge sharing.
- **Dedicated and skilled staff are essential to supporting a challenge lab approach.** Since challenge lab approaches depend on guiding stakeholder collaboration in a way that effectively contributes to knowledge sharing and network building, trained staff are necessary to ensure effective design, implementation and facilitation of workshops, in addition to monitoring and evaluation. They should be fully trained prior to the launch of the initiative in order to ensure good-quality outcomes.
- **Measuring the impact of a challenge-oriented initiative requires sufficient time to elapse before being able to capture results.** When monitoring and evaluation activities take place

sufficiently far downstream of the initiative's implementation (e.g. at least 18-24 months later), they are more likely to be able to capture how the cross-pollination of ideas has led to tangible innovation-related outcomes. In the case of North Middle Sweden's initiative, because no time was allowed to elapse between the end of the challenge lab workshops and final interviews being conducted, it is difficult to know the full extent to which the workshops contributed to the development of concrete regional innovation solutions.

Challenge-oriented approaches are a recent technique to implement innovation policy making. They aim to tackle a large-scale cross-sectoral, societal challenge and build networks that can: i) identify the constituent parts of the challenge; ii) collaborate and co-develop innovative policy solutions; and iii) test out their effectiveness through experimentation. It should be noted that there are very few evaluations of challenge-oriented approaches to date and almost all of them rely on traditional (non-systematic) evaluation tools and methods.

Dimension 5: A broad approach to building skills for the future of work

Many regions in industrial transition face a talent deficit, affecting the ability of employers to fill vacant jobs. Two factors can contribute to this. First, the resident labour force may lack relevant skills to contribute to emerging industries. This could, for example, reflect a skills mismatch at the regional level, with workers and managers having been trained in traditional industries such as manufacturing and therefore finding themselves ill-equipped to adapt to new technologies and industries. Second, the region itself may be considered an unattractive place to live or work by potential employees. There could be any number of reasons for this, ranging from a lack of job opportunities and limited physical connectivity to a lack of amenities or poor public services (e.g. education, healthcare). However, when such perceptions become widespread, they risk creating difficulties in attracting talent (and investment) from outside the region to fill vacant jobs. For example, in the Centre-Val de Loire region in France, more than 70% of the positions linked to industrial projects were considered difficult to fill in 2019 due to a lack of suitable candidates (Dev'up Centre-Val de Loire, 2019^[23]). The lack of talent hinders industrial transition by limiting the development of new sectors, limiting innovation in existing sectors and dampening the prospects of firms to modernise and expand, resulting in a further loss of economic activity and jobs.

As regions and countries evolve and advance their industrial transitions, so do the skills requirements for their workforce. For policy makers, this not only means providing support to help industrial transition regions diversify their economic activities into new and emerging industries but also identifying ways to revitalise employment and boost productivity in traditional industrial sectors, where such regions have historic economic strengths. For example, in traditional industrial sectors, for example, policy instruments such as company audits and coaching can be deployed to nurture an innovation culture and facilitate new and digital skills development, as is evidenced by a pilot policy programme from Hauts-de-France that focused on industrial SMEs (OECD, 2023^[11]).

The challenge for regions in industrial transition lies not necessarily in implementing policies supporting jobs and skills but rather in designing policy mixes that package different types of support and seek an integrated approach to upskilling. Additional challenges include getting the governance of different policy levers right and working out the modalities of how support should be provided and to which stakeholders in the region.

Skills and knowledge requirements in regions in industrial transition are changing and becoming increasingly complex. Catalysts for this change include globalisation, demographic changes, migration patterns and industrial decline in certain sectors (e.g. manufacturing and extractives) and rapid technological advances in others (e.g. digitalisation and connectivity) (OECD, 2019^[2]; Kim et al., 2022^[24]). Given the changing skills demands of employers, regions in industrial transition – particularly those facing skills shortages, including due to outward migration, attractiveness issues, lower than average levels of tertiary education and/or poor opinions of vocational education training (VET) – may need to take a more holistic and strategic approach to equipping their communities for the future of work. This means recognising the interdependence between employer demands, skills supply, firm competitiveness and regional attractiveness, and seeking to develop policies and programming that form a comprehensive framework to address the transition process. This also means recognising the centrality of skills development for improving innovation potential and productivity in traditional industries – not just new and emerging ones – as is discussed in the subsequent section.

Sustaining a skilled workforce by improving recruitment practices and regional attractiveness

Ensuring an appropriate skills base is a significant challenge for many regions in industrial transition. Such an approach entails a co-ordinated effort to experimentation, not only with policy levers for skills development but also related challenges, such as fostering regional attractiveness. In order to be effective, a co-ordinated approach first needs to identify the obstacles that are inhibiting skills development in a specific region and then support the development of targeted actions in response.

An example of a HIA that adopted a co-ordinated approach to strengthening skills and attractiveness in order to better manage industrial transition comes from France's Centre-Val de Loire region. The industrial fabric of the region is highly specialised in sectors such as pharmaceuticals and plastics; however, it also has significant intra-regional disparities in industrial employment. In order to fill vacant higher-level management and administrative posts in industrial SMEs, the region developed a policy experiment that strengthened recruitment practices while simultaneously taking steps to improve prospective employee perceptions of rural and remote areas within the territory as attractive places to live (Box 3.4).

Box 3.4. Experimenting to build a skilled management workforce in the Centre-Val de Loire region, France

In order to advance its industrial transition, the region of Centre-Val de Loire in France experimented with a well-thought-out package of innovative policy levers to ensure a skilled workforce in the region, particularly in high-level managerial and administrative positions.

The action responded to the industrial transition challenge of ensuring an appropriate skills base in the region. For Centre-Val de Loire, the lack of skills in higher-level management and administrative posts, along with the limited ability of firms in the region to recruit such talent, appeared to be at the core of the problem.

The experimental pilot policy action addressed two main obstacles. First, it provided support for human resource management on topics such as recruitment, employer branding and employee loyalty in industrial sector companies with fewer than 500 employees. Second, it developed regional attractiveness measures that could entice highly qualified and high-potential profiles to work in the region.

The actions designed and implemented under the HIA were unprecedented in the region, leading to a distinctive learning opportunity. The activities consisted of regional attractiveness mapping, workshops for SME chief executive officers (CEOs), enterprise audits and targeting industrial SMEs at a recruitment fair. These activities led to a series of insights for future support on ensuring an appropriately skilled workforce, including better targeting the region's rural areas, reviewing the audit process, providing talent attraction workshops and better understanding candidate expectations.

Source: Based on OECD (2023^[6]), Centre-Val de Loire's High Impact Action: SME Executive Recruitments and Skills Competence Audits and Regional Attractiveness Strategy - In-depth assessment, https://www.oecd.org/regional/governance/RIT_HIA_Centre-Val_de_Loire.pdf.

The example from Centre-Val de Loire highlights a series of policy lessons for how a co-ordinated approach to skills and attractiveness policy making can work in industrial transition regions:

- **Identifying specific gaps and obstacles to talent retention:** By understanding employer needs (e.g. through formal study) and then developing a comprehensive skills strategy, policy makers can identify skills gaps and propose policy measures to ensure a skilled management workforce.
- **Reinforcing regional attractiveness measures to attract a skilled workforce:** Policy makers in regions in industrial transition can help their SMEs to do so through regional branding and working together to develop messages that highlight the unique selling points of the region. This, in turn, helps the region's firms to focus not only on the company and the professional opportunities but also on the benefits of living and working in the region.
- **Promoting the attractiveness of rural areas in industrial transition:** Geographical location plays an important role in the attractiveness of positions to be filled. In the Centre-Val de Loire example, a study revealed that nearly 69% of qualified employees from the Ile-de-France region would be willing to live and work in the Centre-Val de Loire region but not necessarily in its rural areas (Association Pour l'Emploi des Cadres, Dev'up, 2019^[25]). This suggests that regions in industrial transition with important industries in rural and remote areas need to highlight the advantages of living and working specifically in these areas to attract qualified managerial employees from elsewhere. It may also mean adopting specific measures that help make these territories more attractive, such as investments in transport, housing, connectivity or other services.

Supporting traditional industries with a potential for innovation to adapt to the future of work

Technological – including digital – transformation is often associated with technology-based businesses or start-ups. However, traditional industries also need support in this area. This, in turn, can lead to increased profits, job creation and economic growth (Appio et al., 2021^[26]). Taking advantage of technological innovation may require new and experimental action to spur interest among traditional companies to engage with it. Helping SMEs or other companies adapt to the future of work through dedicated coaching and mentoring to develop the leadership skills required to implement a successful transformation strategy is one way to go about this.

One example of an experimental action to support the future of work comes from Hauts-de-France, in northern France. The region faces a series of challenges in traditional industrial sectors, including a low innovation capacity, a shortage of skilled workers and limited competitiveness. To address these challenges, the region developed, tested and improved an experimental methodology and a set of tools to support the digital transition of traditional companies as a means to advance its industrial transition (Box 3.5).

Box 3.5. Accelerating the digital transition of traditional industrial companies in Hauts-de-France

Hauts-de-France's SMEs are confronted with a need to adapt to complex, digital and personalised production systems in order to stay competitive. The HIA supported industrial SMEs in acquiring the skills needed to integrate digital technologies into their production processes, product design, product distribution and service provision by offering coaching and advisory services. The primary goal of this action was to enhance the competitiveness of regional companies, which would lead to future job creation in the region.

The Hauts-de-France region experimented in order to tackle three large industrial transition challenges: i) supporting SMEs with innovation potential for innovation; ii) supporting SMEs in their digital transition; and iii) strengthening the breadth and depth of public support for regional innovation.

The pilot action offered an in-depth diagnosis of digital maturity and coaching to help SMEs integrate digital technologies into their production processes, product design, distribution and service provision. It also created a collaborative ecosystem that brought together companies, digitalisation experts and the public sector to co-develop innovative solutions to the challenges of digital transformation in industrial SMEs.

The example of Hauts-de-France highlights the critical role of coaching and mentoring programmes in supporting traditional companies through industrial transitions. In Hauts-de-France, policy makers have recognised that every company's transition process is unique. Therefore, a targeted coaching approach based on a company audit is more effective than a standardised digitalisation support programme that is broadly applied across companies and industries. Additionally, experimenting with coaching and mentoring programmes can foster a culture of learning and development within the company and inform policy makers in regions undergoing industrial transitions.

Source: Based on OECD (2023^[11]), Hauts-de-France's High Impact Action: Accelerating the digital transition of traditional industrial companies - In-depth assessment, https://www.oecd.org/regional/governance/RIT_HIA_Hauts-de-France.pdf.

The example of Hauts-de-France holds a series of policy lessons for regions in industrial transition wishing to support the future of work by boosting digital and leadership skills in traditional industries:

- **Fostering flexibility in digital-support strategies:** Digitalisation can vary across firms and industries, requiring a flexible approach. Support should be provided to SMEs for upgrading processes and adopting digital business models rather than demanding complete digital transformations. Support should emphasise the importance of building a culture of digital transformation and empowering employees to embrace new technologies and ways of working.
- **Using non-financial incentives for capacity building:** Non-financial incentives, such as coaching and mentoring programmes, can support industrial transition and enhance the skills of the labour force. These programmes help SME managers gain a broader perspective, focus on strategic planning and work on the company's future instead of day-to-day operations. By offering non-financial support, policy makers can assist SMEs in adapting to new market conditions and improving their overall performance.

Summary of main insights from experimenting with new approaches to preparing the future of work

Industrial transitions pose challenges for regions that are heavily reliant on traditional industries or lack specific skills as skill requirements evolve in a transition process. To address these challenges, experimentation with policy levers and integrated approaches is necessary. By testing different strategies to better match skill supply and demand, regional skills bases can be strengthened, capacity can be built and regional attractiveness could be enhanced. These elements can support traditional industries as well as emerging ones, as is seen in the case of the experimental action in Hauts-de-France.

Experimental mechanisms that can help regions strengthen firm capacity to meet human resource needs in new and emerging areas may need to be combined with policy levers that foster regional attractiveness and make certain areas of a region more attractive places to live and work, as is evidenced by the experimental action in Centre-Val de Loire (Box 3.4).

Dimension 6: Helping SMEs and entrepreneurs build innovation capacity to advance industrial transition

Policies that can support the innovation capacity of less innovative firms – be they SMEs, micro enterprises or start-ups – can lift productivity, as can policies that aim to build a better-quality business environment for innovation. Yet these firms tend to be less innovative and less open to innovation than larger firms. Furthermore, SMEs dominate the business ecosystem in many regions, including those in industrial transition. However, such regions are often home to many micro or family enterprises that are even less adept – or interested – than SMEs in capitalising on what innovation can offer. The reasons for this are numerous but can include a feeling that innovation is “not for them” or that they lack the necessary expertise, awareness, human or financial resource capacity to tap into funding opportunities. Often, accessing funds that could support innovative processes, which in turn could contribute to industrial transition, comes with high levels of administrative burden or requires awareness of new processes or embracing concepts that smaller business owners or workers may not have or are not comfortable doing. For example, one of the lessons learned from Hauts-de-France is that SME managers must be prepared to communicate a clear vision of the benefits of industrial transition and digitalisation to their employees (OECD, 2023^[11]). Another challenge SMEs, unlike larger companies, face is ensuring their competitiveness and that their ideas or new products find a market. These same issues confront start-ups and can hinder the efforts of a potential entrepreneur.

Addressing SME and entrepreneurship-related challenges – especially those associated with low innovation capacity, resources and mindset – in the context of industrial transition may require a recombination and/or adaptation of existing policy levers. For example, traditional industrial transition policy tools such as innovation vouchers may need to be modified to encourage the development and adoption of new technologies that promote sustainability and environmental protection. One example of this approach can be seen in East and North Finland’s initiative to experiment with innovation support for SMEs (Box 3.6). In addition, policies that explicitly promote collaboration between the public and private sectors may be necessary to facilitate innovation take-up. This may either involve changing the governance structure of existing policy levers or experimenting with the modalities of the policy lever, as was done in Slovenia for example (Box 3.7). Consideration can also be given to providing a combination of financial and non-financial incentives to help launch innovative products on the market, as was Wallonia’s approach and also seen in Cantabria. The next section focuses in on these levers and how they have been used in experimental pilot programmes.

Supporting SMEs through collaborative funding models and innovative governance arrangements

Traditional forms of financing, such as bank loans, are often difficult to access for SMEs or entrepreneurs in any region and possibly more so in regions in industrial transition, especially in those facing economic challenges (OECD, 2019^[2]). Experimenting with new funding models can reduce investment barriers, thereby stimulating innovation in transition regions by providing resources, expertise and support for entrepreneurs, start-ups and established companies to develop and commercialise new products and services. In addition, adjustments to the innovation policy governance framework that encourage and facilitate the creation of new businesses and technologies could be valuable as well.

Policy lessons regarding the use of a new funding mechanism to promote experimentation with innovative tools and products can be drawn from East and North Finland's experience, where a new funding model was implemented to expand the scope of innovation among enterprises in the region's tree, wood and timber value chain (Box 3.6).

Box 3.6. Experimenting with a new funding model for innovation in East and North Finland

The region of East and North Finland experimented with a new funding mechanism which enabled its seven regional councils to broaden the innovation base and strengthen the value chain in the forestry sector. The councils provided financial vouchers of EUR 40 000-45 000 to 7 collaborative cross-regional projects consisting of 1 or more companies and R&D organisations operating in East and North Finland.

The initiative encouraged cross-regional collaboration in a large and sparsely populated area and managed to reduce the long physical distances between the seven sub-regions by strengthening the linkages among governments and enterprises and helping stakeholders expand their networks. It allowed enterprises and R&D organisations to look beyond their immediate area for project partners, building synergies and institutional social capital. It shows that fostering a cross-regional dimension by joining forces between regions of sub-critical size can support industrial transition and could have a wider impact on the future of regional development in the larger region.

The initiative also underlined the importance of multi-level governance for a successful industrial transition. Regional councils were given additional responsibilities related to the financing of enterprises because they considered themselves well informed about the strengths and weaknesses of regional businesses and, thus, better positioned to promote innovative business activities. Meanwhile, the national government's role was to provide a clear strategic direction for innovation and develop national frameworks to promote the innovation base.

Source: Based on OECD (2023^[10]), East and North Finland's High Impact Action: Cross-regional Voucher System to Stimulate Digitalisation and Circular Economy in the Tree, Wood, and Timber Value Chain - In-depth assessment, https://www.oecd.org/regional/governance/RIT_HIA_East_North_Finland.pdf

East and North Finland's approach to experimenting with new funding models offers a number of policy lessons for policy makers in regions in industrial transition:

- **Short-term funding may be more appropriate than long-term funding for diffusing innovation.** The beneficiaries of the HIA agreed that flexible and short-term funding is effective when testing new products and that it is often preferable to long-term funding, which tends to be more rigid from a procedural point of view (OECD, 2022^[3]). This is particularly true for small SMEs that often encounter challenges when investing in new products and adapting to the current needs of digitisation and the circular economy due to a lack of financial support. Short-term funding is

often more prevalent in start-up environments where the priority is to develop and test innovative products in a short period.

- **Regional government bodies can be strong enablers of innovation.** Thanks to the HIA, East and North Finland's regional councils were able to play a more proactive role in promoting innovative business development. This represented a shift from the traditional focus of regional councils which centred on facilitating knowledge exchange and providing educational opportunities. Through the HIA, regional councils supported enterprise product development and helped drive innovation in their respective regions. This capacity was vital not only to unlock the potential of local businesses but also to fostering the growth of new industries in East and North Finland.

Strengthening funding for SME innovation capacity by testing governance arrangements

An additional example of experimentation with a new approach to funding, from Slovenia, shows how adjusting governance arrangements can create the necessary conditions to help businesses engage with the process of industrial transition (Box 3.7). Slovenia's experience indicates that just because an innovation finance instrument has been implemented under a long-standing governance arrangement, that does not necessarily mean that it is the most effective approach for supporting SMEs and their innovative ideas. In the Slovenian case, Slovenian toolmaker association TECOS was better placed to implement the voucher programme for at least two reasons. First, it had more detailed knowledge of the business needs of SMEs than the central government, which helped it better select projects to support the initiative's aims. Second, project funds for beneficiaries were channelled through TECOS and not the national government, resulting in less administrative burden for the applicant firms.

Box 3.7. Using a new governance approach to broaden the innovation base in Slovenia

Slovenia implemented an innovation voucher system to encourage collaboration between universities and industries, with the aim of promoting industrial transformation in SMEs. This governance and policy experiment was also designed to gauge the demand for larger-scale demonstration centres that could facilitate research and knowledge transfer related to Industry 4.0. Once established, these demonstration centres would accelerate digital transformation by promoting the development and use of smart factory concepts.

Unlike a typical top-down approach where the government sets the agenda and calls for funding without considering the actual needs of businesses, the Slovenian HIA took a different approach. It involved TECOS, the Slovenian toolmaker association, in the call development process, given its deep knowledge of the current business needs of SMEs. TECOS acted as a bridge between the central government and beneficiaries, responding as best it could to the needs of both parties.

In addition, TECOS acted as the funding agent for the projects associated with this HIA. By dissociating the funding channel from the government with its heavy administrative processes when applying for funds, SMEs or other firms responding to the call for projects could take advantage of lighter administrative processes. This made the call more attractive, particularly for SMEs, which often face capacity gaps in responding to calls. It also highlighted the potential deterrence that a high administrative burden can have on responding to more traditional project calls.

This new model highlights that associations such as TECOS, which are close to industry, are well suited to administering public innovation vouchers for Industry 4.0. They possess the necessary proximity and knowledge of Industry 4.0 to support industrial SMEs and serve as an intermediary between policy

makers and businesses. Moreover, such an intermediate body can reduce the administrative burden on businesses, making it easier for them to apply for calls without expending significant resources.

Source: Based on OECD (2023^[4]), "Slovenia's High Impact Action: Establishing an Industry 4.0 Transformative Mechanism - In-depth assessment, https://www.oecd.org/regional/governance/RIT_HIA_Slovenia.pdf.

The Slovenian case provides a compelling example of how experimental financing initiatives can benefit regions undergoing industrial transitions. These initiatives offer an opportunity for local and regional stakeholders, which may not traditionally be responsible for financing innovation-related initiatives, to test their capability in this area and explore how they can leverage their proximity to local businesses for greater impact.

Testing financial and non-financial incentives to encourage innovation among smaller enterprises

Financial incentives to help micro enterprises, SMEs and start-ups flourish will always be welcomed by business owners and entrepreneurs. For example, North Middle Sweden's challenge labs included the possibility of seed funding for a set of selected hydrogen projects, which was an incentive for firms to engage in the initiative (OECD, 2023^[12]). However, not all initiatives have financial incentives built in, nor is their provision always possible for regional or national governments.

Wallonia, Belgium, worked around regional funding constraints by combining financial and non-financial incentives to induce firm participation in its HIA: the Plastics Go Green and Circular challenge. The aim was not only to help firms commercialise new, innovative services and products but also to ensure these offerings were developed by start-ups and SMEs and targeted innovative, sustainable solutions for plastics disposal. The firms behind each selected project received a lump sum grant of EUR 15 000. Many SMEs felt that this was insufficient to meet their project needs but smaller firms and start-ups found it to be sufficient. In addition, the participating firms also received coaching and mentoring to help them implement their projects. Another draw for smaller firms was a more streamlined approach to receiving grant funds, reducing an administrative burden that otherwise may have strained resources and prevented them from participating in the initiative. Participants indicated that the HIA promoted an environment to test and experiment with innovative projects that may not have been funded through regular project calls. Start-ups, SMEs and micro firms stated that they would not have experimented as extensively as they did without grants and coaching (OECD, 2022^[11]).

In Cantabria, Spain, SMEs in the agri-food sector are not digitised and cannot always afford the upfront investment costs of a green or digital transition. In addition, there is scepticism regarding the usefulness of such an investment (OECD, 2023^[7]). Many of the region's firms in a more remote or rural area are often family-owned and/or micro enterprises producing artisanal products. They have used the same production methods for decades. Cantabria focused on digitisation on the one hand but also on helping businesses become more energy efficient, which could lead to savings and in turn be used to advance digitisation ambitions. Thus, one of the incentives for Cantabria's smaller firms to experiment – not only with the initiative but with their own business or production models – was the possibility of significant cost savings. Another incentive was to become a more sustainable business, which could also be used in marketing campaigns (OECD, 2023^[7]).

Summary of main insights of how innovation funding levers can be used in new ways to support SMEs and entrepreneurship during industrial transition

Innovation funding levers can play an important role in supporting SMEs and entrepreneurship in regions in industrial transition. In particular, short-term and flexible funding models, such as voucher systems, can

be more effective for supporting innovation than long-term funding arrangements, which tend to be more rigid from a procedural point of view. Whatever the funding lever ultimately adopted however, it is important for policy makers to seek to streamline the administrative burden it places on firms, which may have limited human resource capacity to deal with red tape. It should also be noted that, while funding levers are important, non-financial levers can also play an important role in supporting SMEs and entrepreneurship. For instance, capacity-building support for micro-entrepreneurs through coaching can also help to support innovation.

Dimension 7: Expanding on a sustainable and just industrial transition

As governments recognise the need to address environmental and energy transitions, they are increasingly focusing on managing industrial transition in a way that aligns with regional, national and international climate action and sustainability goals, such as the United Nations Sustainable Development Goals (SDGs). Regions in industrial transition face particular challenges in transitioning towards a climate-neutral economy. Many such regions have traditionally relied on industries that emit high levels of greenhouse gases, such as coal mining and heavy manufacturing. Transitioning away from these industries can have large economic and social impacts, as jobs are lost and communities are disrupted.

Any industrial transition should be carried out in a just manner, meaning that it should not disproportionately affect certain industries, communities or individuals (OECD, 2019^[2]). By involving stakeholders in policy making, policies are more likely to be effective and acceptable to those who will be affected by them. One example of this approach can be seen in Lithuania's experiment with a co-creation process to build a sustainable industrial economy (Box 3.8).

When supporting an industrial transition, it is also important to ensure that progress made in one area does not unjustly lead to setbacks in another. Experimental policy action can help address this issue by enabling policy makers to test policies and identify potential problems and trade-offs before significant resources are invested in their implementation. This approach was adopted by France's Grand Est region during the implementation of its sustainable industrial parks concept.

Past work with regions in industrial transition highlighted policy levers that focused on creating "green" business and job opportunities, with an eye on ensuring minimal disruption in communities. However, many such policy responses, such as stimulating green behaviour in firms to boost green innovations or encouraging innovation in environment-friendly technologies, take time to come to fruition. There are many instances where local actors (e.g. local authorities or private sector beneficiaries for EU or other support funds) still do not have experience in designing or presenting projects to support the shift to a green, climate-neutral or more energy-efficient business model. The regions and countries participating in the pilot project took the opportunity of developing an HIA to work on this "green" dimension of industrial transition. Frequently the initiatives they developed had a sustainability, environmental or climate-neutral component. They also had a co-creation component, which could help build ownership for climate-neutral shifts among stakeholders – important as these can frequently be met with resistance.

Using co-creation processes to support a sustainable and just industrial transition

Experimenting with co-creation processes is one method that can help with generating a sustainable industrial transition. Co-creation is a collaborative governance approach whereby multiple stakeholders, including policy makers, industry representatives, academics and civil society, actively participate in the design, implementation, and evaluation of public policies (OECD, 2020^[19]). Co-creation's potential to support inclusive knowledge-sharing and consensus-building among a wide range of relevant stakeholders, each of whom is united in pursuit of a common societal objective, provides an important precondition for a successful just transition.

Collaborative and co-creation processes can be used to explore a variety of policy topics and approaches related to industrial transition. For example, in regions transitioning from fossil fuel-based industries to renewable energy, co-creation processes can be used to develop policies that support the growth of renewable energy industries, while also addressing the place-based social and economic impacts of the transition (OECD, 2020^[27]). Similarly, in regions transitioning from traditional manufacturing to advanced manufacturing, co-creation processes can be used to develop policies that support the adoption of new technologies, the development of skills and training programmes, and the establishment of cross-sectoral partnerships that bring together industry, academia and government.

Co-creation processes can also be used to explore new policy topics for industrial transition and help create policy roadmaps to advance industrial transition in new policy areas. In Lithuania, for example, the extensive co-creation of a policy roadmap for developing the circular economy helped to ensure that the different professional backgrounds and interests of public, private and third-sector stakeholders were taken into account during drafting while building a common contextual understanding among participants (Box 3.8). It also helped to align top-down policy decisions with bottom-up proposals, created new links between key players in the circular economy value chain and promoted a step change in the attitudes of key industries.

Box 3.8. Using co-creation to advance industrial transition in Lithuania

Lithuania designed an experimental policy action to begin a shift towards a circular economy in industry. Central to the design of policy action was an experimental co-creation process for a Circular Economy Roadmap, which implied a shift away from a traditional top-down approach to policy making and instead emphasised collaboration, participation and the co-creation of policies with stakeholders.

The process consisted of two steps:

1. **Mapping Lithuanian circular economy stakeholders**, identifying approximately 700 individuals from public authorities, higher education and research institutions, various industrial sectors and their value chains, business associations, waste management bodies, consumer and NGOs.
2. **Establishing a Roadmap Co-ordination Group of 50 representatives and experts** from governmental, industrial, business, non-governmental, municipal, waste management, consumer, science and education institutions, to develop a systematic dialogue approach and involve stakeholders from different levels of the professional hierarchy (ranging from technical experts to managers), diverse areas of interest and with different competencies and experiences.

The co-creation process proved to be very effective for encouraging stakeholder participation, ownership and raising awareness. It allowed for the integration of diverse interests, roles and relationships into the roadmap drafting while building a common contextual understanding among stakeholders. Further, it aligned top-down policy decisions with bottom-up proposals, helped build new links between key players in the circular economy value chain and promoted a change in the attitudes of key industries.

Source: Based on OECD (2023^[8]), Lithuania's High Impact Action: Roadmap for Lithuania's Industrial Transition to a Circular Economy - In-depth assessment, https://www.oecd.org/regional/governance/RIT_HIA_Lithuania.pdf.

In order to be effective, co-creation processes for regions in industrial transition should be designed to engage stakeholders in a collaborative and inclusive manner. Lithuania's example provides several factors that need to be taken into account:

- **Ensuring an action-oriented approach:** The co-creation process should lead to concrete results. This not only depends on a clear understanding of the industrial transition challenges facing the region or country but also on a commitment to taking the necessary steps to address them respectively. For example, in Lithuania, while the co-creation process to develop a Circular Economy Roadmap was successful, leadership and governance challenges resulted in the roadmap not being formally adopted by the government. This risked undermining the trust of industry stakeholders who had participated in the roadmap development process in good faith. Had the roadmap document not been adopted, the trust of industry stakeholders – who had spent significant time and resources developing it – might have been undermined, with potential implications for their willingness to participate in future initiatives.
- **Facilitating learning and knowledge-sharing:** The co-creation process should be designed to facilitate learning and knowledge sharing among the stakeholders involved. This includes sharing good practices, identifying emerging trends and building capacity to address the industrial transition challenges facing regions. The co-creation process used in Lithuania proved to be a very effective tool for encouraging learning and knowledge sharing among participants who had not previously been familiar with the circular economy or its role in supporting industrial transition.
- **Keeping a flexible and adaptive approach:** Co-creation processes to advance industrial transition should be flexible and adaptive to changing circumstances, such as those brought about by the COVID-19 pandemic. This requires ongoing monitoring and evaluation of the process as well as a willingness to adjust the approach as needed based on feedback from stakeholders and results achieved. In Lithuania, this was done by holding a large number of virtual stakeholder meetings during the policy roadmap development process. The Lithuanian expert team also set up a dedicated website for communication between stakeholders taking part in the co-creation exercise (OECD, 2022^[21]).

Tackling industrial transition challenges related to industrial relocation, competitiveness and sustainability

In addition to ensuring that competitiveness is maintained during the green transition, regions in industrial transition also have to navigate de-industrialisation and relocation issues and the need to attract firms and workers (OECD, 2019^[2]; 2020^[27]). Even in cases where regions make concerted efforts to address these forces, for instance through effective strategic planning, they may still find that policy actions that contribute to solving one industrial challenge can exacerbate the difficulties faced in resolving another. Experimental approaches may be of value in these cases as they enable policy makers to test policies and identify potential problems and trade-offs before significant resources are invested in their implementation. One such example of experimental action to deal with interlocking industrial transition challenges of relocation, attractiveness, competitiveness and sustainability can be found in the Grand Est region in the east of France (Box 3.9). Experimentation and policy readjustment in light of new evidence played a key role in shaping the development of the region's Industrial Parks of the Future concept.

Box 3.9. Using a new concept to promote sustainable industrial parks in the Grand Est region, France

The Grand Est region successfully experimented with setting up a concept for a new and ambitious initiative to support demonstrator projects for sustainable industrial zones in the region, called Industrial Parks of the Future (*Zone d'activités du futur*). The wider aim of the initiative is to support development in the region's more remote areas while also making these more sustainable, more competitive and better able to attract direct regional, national and foreign investment.

In order to classify as an industrial zone of the future, such a zone needs to follow a pre-defined set of criteria, including having a neutral impact on the soil and excellent sustainability credentials, supporting the construction of a dynamic local ecosystem as well as placing people at its core and creating a liveable environment.

The regional development agency Grand E-Nov+ developed an assessment tool to evaluate the current status of existing industrial parks. The tool allows the identification of the most relevant development levers for an area.

The initiative responds to a series of industrial transition challenges that the region Grand Est is facing, including reversing the trend of de-industrialisation, strengthening industrial know-how and creating new activities with high added value, and responding to ecological and climatic challenges.

The initiative also helped support a just transition by involving a large set of regional stakeholders in its elaboration, which co-developed the initiative. More than 40 actors, including local authorities, industrialists (large groups and SMEs of the Grand Est), research institutes, property developers, etc., were involved.

Source: Based on OECD (2023^[28]), L'Action à Fort Impact du Grand Est : Cluster Transition - Évaluation approfondie, https://www.oecd.org/regional/governance/RIT_HIA_Grand_Est.pdf.

The HIA implemented by Grand Est presents a couple of important policy lessons for managing industrial transition:

- **Openness to readjustment helps advance industrial transition.** The pilot initiative initially focused on creating an innovation hub. However, the role that the hub would play in supporting a just transition was not clear in the context of an already-complex landscape of actors involved in the region's economic development. Following a feasibility study, a readjustment of the initiative ensued, spurring its orientation away from the innovation hub concept towards a new focus on supporting sustainable industrial zone projects in remote areas of the region. The success of the initiative in its adjusted form underlines how openness to experimentation and reorientation can help to identify potential issues early on in transition initiatives and enable refinements to achieve more desirable outcomes.
- **Collaboration and involving multiple stakeholders, including private actors, is crucial for the success of developing sustainable industrial parks or other novel initiatives in a region.** The selection of stakeholders should be based on their expertise and should aim to obtain consensus among them. Additionally, being a pioneer in a field can attract new actors and create enthusiasm for industrial conversion.

Summary of main insights from using experimental governance to advance a sustainable and just industrial transition

Governments are recognising the importance of managing industrial transition in an equitable way that also aligns with environmental and energy transitions. In such endeavours, however, they face various governance and policy challenges. Successful industrial transition requires effective collaboration between a wide range of relevant stakeholders in order to facilitate dialogue, build consensus and manage competing interests and priorities. Engaging stakeholders at all stages of the policy-making process can help to ensure policies are more inclusive, thereby increasing their palatability to citizens and ensuring that important interest groups are not left out of (what is expected to be) a just transition. Such engagement can also help to improve the effectiveness and impact of policies more broadly.

The challenge of managing many inter-related industrial transition dimensions in tandem and the need to ensure that progress in one area does not lead to setbacks in another requires not only effective strategic planning but also an openness to reorient initiatives where such efforts are needed.

Dimension 8: Fostering inclusive growth in industrial transition by reducing barriers to economic inclusion

Inclusive growth contributes to an individual's quality of life and their capacity to actively contribute to societal progress. However, generating inclusive growth is often challenging for policy makers, given that prosperity is not shared equally across regions or cities, and large economic divides can either develop or accentuate between lagging territories and those that are drivers of growth. For regions in industrial transition, one of the most important challenges is ensuring that places that were once engines of regional prosperity, but subsequently experienced a period of industrial decline, can benefit from new and emerging economic activity. A failure to address this issue risks weakening social cohesion and increasing economic vulnerability while limiting social mobility and the equality of opportunities (OECD, 2019^[2]).

Policies that aim to foster greater inclusion in the economy of unemployed, underemployed or people with a skills mismatch – both in terms of building their labour force participation and also in terms of increasing their economic value to businesses – can make growth more inclusive by increasing the employment rate, lowering relative in-work poverty and increasing the productivity and wage growth of underutilised economic groups (OECD, 2019^[2]).

Experimenting with policy levers that break down barriers to economic inclusion can be useful for supporting inclusive growth in regions undergoing industrial transition. Examples of new governance and policy action in Greater Manchester, United Kingdom (Box 3.10) and Cantabria, Spain (Box 3.11) demonstrate the potential of such initiatives for helping to manage industrial transitions.

The OECD 2019 report on regions in industrial transition highlighted that regional well-being is divided into two different strands: i) material well-being, which includes elements such as jobs, income and housing; and ii) quality of life, which includes elements such as education, health, access to services, sense of community and life satisfaction (OECD, 2019^[2]). Unemployed, underemployed and skills-mismatched workers are at risk of negative impacts on both strands of their well-being. For example, their level or quality of employment may not only have a bearing on their income levels but also on their ability to learn, derive life satisfaction and play a meaningful role in their communities.

Declining well-being is a particularly prominent risk for workers in regions in industrial transition, who are more exposed to potential long-term unemployment due to structural shifts in local skills demand (OECD, 2019^[2]). Moreover, across OECD countries, workforce groups at greater risk of labour market disadvantage tend to receive even less training, both formal and informal, compounding their disadvantage (OECD, 2019^[2]). As such, in order to foster growth that is more inclusive, policy makers in regions in

industrial transition need to ensure that unemployed, underemployed and skills-mismatched groups are supported through well-targeted training measures and comprehensive support provision (OECD, 2019^[2]). Policy makers also need to ensure that employers are sufficiently knowledgeable about how high-skilled workers can strengthen their businesses, which can catalyse them to support the upskilling of local communities to meet their business needs.

Promoting better employment standards and fostering economic inclusion through bottom-up policy action

Fostering economic inclusion in regions in industrial transition, which, as discussed above, is one pathway to delivering inclusive growth, can be challenging. For instance, ill health, either mental or physical, can play a role in limiting labour force participation, as can childcare responsibilities. Moreover, employers in certain sectors may have a preference for offering insecure work contracts, which can limit the hours that people are able to work (Coyle et al., 2019^[29]). At the same time, the tools available to regional policy makers to address these issues can be limited. For instance, the relevant employment legislation is often set at the national level and regional authorities can lack the legal authority to alter it (OECD, 2023^[16]).

Low productivity is another barrier to economic inclusion in regions in industrial transition. A lack of relevant skills can hinder a person's ability to work in higher-wage roles or industries (Coyle et al., 2019^[29]). However, while regional policy makers may be able to help address these issues through reskilling initiatives, they may also lack detailed knowledge of the skills needed by different sectors, which has the potential to limit the initiatives' effectiveness.

Initiatives to support economic inclusion do not have to be implemented in a top-down manner. Rather, they can also work effectively by building societal consensus from the bottom up. For example, regions in industrial transition can set up voluntary initiatives that encourage organisations to raise employment standards and improve the economic inclusion of disadvantaged or under-represented groups. One such example is the Greater Manchester Good Employment Charter (Box 3.10). A voluntary initiative, its criteria proactively encourage employers to support economic inclusion, including enticing them to implement health-related support policies, make adjustments for people with long-term health conditions and disabilities, and support a specialised training plan for each staff member that allows them to develop their skills (OECD, 2023^[16]).

Box 3.10. The Greater Manchester Good Employment Charter

The Greater Manchester Good Employment Charter is an experimental initiative dedicated to improving employment standards across the region. Run by the Greater Manchester Combined Authority (GMCA), it is a voluntary membership and assessment scheme to proactively encourage local employers from all sectors to promote fair pay, good working conditions and inclusive career opportunities. At the core of charter-related activities is the charter document itself, which outlines seven principles of good employment to which employers in Greater Manchester should aspire, along with related criteria. Several elements of the charter encourage employers to support economic inclusion, including requiring them to implement health-related support policies, make adjustments for people with long-term health conditions and disabilities, and support a specialised training plan for each staff member that allows them to develop their skills.

The Good Employment Charter was experimental in several ways:

1. An extensive process of co-design and co-implementation involving stakeholders from a wide range of backgrounds has helped charter stakeholders to define a collective vision of good employment that is both ambitious and realistic for employers. This has encouraged small,

medium and large organisations, including NGOs, from a wide range of sectors across Greater Manchester, to involve themselves in its activities.

2. A rigorous monitoring and evaluation system for supporters has helped promote high employment standards in the Greater Manchester region.
3. “Carrot and stick” governance mechanisms associated with the charter have helped ensure employer engagement and adherence. There are over 120 000 employees across the Greater Manchester City Region that currently work for a supporter or member organisation of the charter. The charter’s success in encouraging companies across Greater Manchester to raise their employment standards is also helping to address industrial transition challenges in the region, such as a lack of skilled workers, the exclusion from the workforce of various groups and, by extension, low productivity.

Source: Based on OECD (2023^[16]), Greater Manchester’s High Impact Action: The Greater Manchester Good Employment Charter - In-depth assessment, https://www.oecd.org/regional/governance/RIT_HIA_Greater_Manchester.pdf.

The example of the Greater Manchester Good Employment Charter holds a number of policy lessons for policy makers in regions in industrial transition that seek to pursue inclusive growth, through bottom-up, voluntary, economic inclusion initiatives tied to the labour market:

- **Employer engagement with economic inclusion initiatives depends on strong incentives.** A particularly effective way for voluntary initiatives to generate engagement can be to clearly communicate the benefits they can bring to individual employers. In the case of the Good Employment Charter, two incentives that encouraged large-scale involvement were the significant positive marketing for businesses involved in the charter and the more favourable treatment of charter members and supporters in regional public procurement processes.
- **Business-to-business mentoring can help demonstrate to employers how profitability and economic inclusion can be complementary.** In addition to workers, economic inclusion can also benefit businesses, for instance through its ability to improve their productivity by building the skills of employees. However, this value can sometimes be difficult to quantify, while certain additional costs may create unease about its economic feasibility. One effective way for providing reassurance in this regard involved pairing businesses that were new to the charter process with other businesses that were already members. The mentorship of the latter category helped the former gain confidence that the initiative could be implemented without significantly impacting profitability.

Supporting economic inclusion by building employer demand for higher skills

Obstacles to economic inclusion not only include a lack of skills supply, as discussed above. Rather, they can also be the result of a lack of employer demand for higher-productivity skills (Coyle et al., 2019^[29]). For instance, employers might not be aware of how new technologies could positively affect their business. By extension, they might also not be aware of the skills that are required to operationalise these technologies effectively. This presents a missed opportunity for local employees, who have the potential to improve their material well-being and quality of life through upskilling to fit these regional labour market gaps. There is, therefore, a need for experimental initiatives that can foster economic inclusion by building employers’ demand for skills.

One such experimental policy action, from Cantabria, Spain, sought to improve economic inclusion and inclusive growth by promoting societal innovation among companies in rural areas, many of which were struggling to retain workers and had staff that required upskilling (Box 3.11). The initiative focused specifically on building demand and providing support for green and digital technologies. It helped generate

awareness of the economic benefits associated with such technologies and the commensurate level of skills required to operate them. As such, the initiative demonstrated the potential to catalyse (re-investment and training in local communities, in order to equip them with skills that can improve local business productivity and stimulate local wage growth.

Box 3.11. Advancing industrial transition through a societal innovation approach to industrial transition in Cantabria, Spain

The economy of Cantabria, on the northern coast of Spain, has historically relied on agriculture, fishing and small-scale industry. However, it faces several challenges as it works towards its objective of developing a more modern and sustainable economy while ensuring traditional industries are not left behind. These include a lack of collaboration among innovation and a limited culture of innovation, isolated rural areas and their limited attractiveness for younger generations, a lack of green and digital skills for industrial transition in traditional industries, and a lack of knowledge and resources for smaller companies to obtain funds to innovate.

The agri-food sector is particularly affected by these challenges, which is why the Cantabrian Regional Government's Directorate-General for Innovation, Technological Development and Industrial Entrepreneurship developed a societal innovation initiative for this sector. The first step involved creating a repository of agri-food companies with the potential to develop innovative sustainability, digitalisation or social projects to test solutions for the region's industrial transition challenges. This repository also provided a comprehensive picture of the Cantabrian agri-food sector.

Next, the innovation directorate organised a training course for other directorates of the regional government, local governments, interested companies, university centres, researchers and groups of employees at risk of exclusion from the labour market. The course focused on the transition to a low-carbon economy, the importance of digitalisation and the corresponding upskilling and reskilling needs.

Last, the directorate funded 3 projects that supported approximately 20 local companies to find new solutions related to energy use, digitalisation, collaboration and social inclusion. The supported companies were workforce intensive, requiring upskilling and were struggling to retain workers in rural areas.

The HIA gained the support of different actors through its engagement mechanisms. At the start, it was conducted through face-to-face interviews with agri-food companies, something it had never done in the past. The interviews allowed the regional government to display its interest in the companies' work and their challenges, generating interest and company support. The expert responsible for conducting the interviews facilitated identifying synergies between companies or activities that were not previously considered and putting the different parties in contact. This approach helped the HIA gain the support of businesses that were difficult to reach physically, particularly those in isolated mountainous areas that did not initially see how the initiative could benefit them.

Source: Based on OECD (2023^[7]), Cantabria's High Impact Action: Social Inclusion in the Primary Industries- In-depth assessment, https://www.oecd.org/regional/governance/RIT_HIA_Cantabria.pdf.

Better identifying the skills employers demand on the one hand and, on the other, building their demand for specific skills such as digitalisation skills holds a number of lessons for policy makers:

- **Advancing green and digital technologies by building an awareness of their importance and upskilling workers in their use can contribute to industrial transition**, especially in

less-connected rural and remote areas. By enhancing awareness and skills, not only can rural businesses better adapt to industrial transitions and leverage opportunities presented by emerging technologies but local employees can develop their own economic value, which can help enhance their material well-being and quality of life. Policies or programmes that increase firm knowledge of the benefits associated with these areas and provide corresponding training programmes for local employees are one way to go about this.

- **Facilitating access to contacts and providing modest financial support can empower rural companies and projects to join in the industrial transition.** Introducing policies that connect companies with relevant contacts and offer limited financial assistance to support initiatives focused on energy efficiency, renewable energy adoption and digitalisation, for example, can help mitigate the challenges associated with remoteness in rural areas and create momentum for business development (including in terms of skills).

Summary of main insights into how new policy levers can help regions in industrial transition overcome inclusive growth challenges

One way to foster inclusive growth and generate greater well-being in industrial transition regions is by removing barriers to economic inclusion, including in terms of boosting: i) labour force participation; and ii) the economic value of underutilised workers. Experimental policy action can help policy makers address both of these dimensions. In particular, bottom-up voluntary initiatives aimed at employers can build momentum for them to lift employment standards, which in turn can help to build momentum for improved labour force participation and worker productivity. In addition, initiatives aimed at improving building employer demand for new green and digital technologies can also create impetus for the upskilling of local communities.

Dimension 9: Smart specialisation strategies and their intersection with industrial transition and experimentation

An objective of the overall pilot action undertaken with the regions and countries was to help reinforce the next generation of S3s and identify if an experimental approach could support this ambition. What became clear is that the lessons that policy makers learned from adopting a more experimental approach to governance arrangements and policy design for industrial transition could help them better use their S3 to overcome industrial transition challenges in a number of the dimensions explored above.

Intersections between experimental approaches and S3s

More effectively helping industrial SMEs manage the industrial and societal transitions was one clear area where experimentation and S3 aims dovetail. For example, the Hauts-de-France region found that supporting the digital transformation of traditional industrial SMEs was better served by providing long-term coaching and mentoring for existing SME employees, rather than by providing financial support for SMEs to hire digitalisation managers (OECD, 2023^[11]). This insight helped the region shape its 2021-27 smart specialisation projects. A strong focus of smart specialisation in East and North Finland was on business innovation and the commercialisation of innovative products in new and emerging sectors (OECD, 2023^[10]). This was the result of its HIA that tested a new funding model, which explicitly targeted close-to-market innovations and confirmed a greater need for additional assistance in this area.

Furthermore, regions and countries saw how sustainability and inclusivity aims associated with industrial transition could also be advanced through smart specialisation. The experimental policy actions that promoted a sustainable industrial transition also supported S3 aims by integrating environmental considerations, promoting resource efficiency and supporting the transition to a low-carbon economy. For

example, the experimentation and lessons learned from the Industrial Parks of the Future project in Grand Est, France fed and improved the region's S3, which is strongly focused on technologies and equipment to help manage the industrial transition. They also improved the tools and systems used for the sustainable and smart management of natural resources and energy systems (OECD, 2023^[28]). In addition, the focus on inclusiveness in some of the HIAs helped marginalised groups and/or remote communities take advantage of smart specialisation. This was seen in Cantabria, which successfully built its capacity to engage traditional SMEs in rural and remote areas in transition projects, and helped these SMEs become more energy-efficient and sustainable (OECD, 2023^[7]). Embedding these learnings into its revised smart specialisation strategy 2021-27 was among Cantabria's plans.

Finally, S3 provides an avenue for scaling up successful innovation policy pilots. While the S3 is targeted to already established industries or innovation activities in a region or country, the pilot or experiment can help expand S3-related activities. Wallonia used its revised S3 for the 2021-27 period to scale a new approach to industrial transition and innovation (OECD, 2023^[5]). It placed a significant emphasis on tackling societal and industrial transition challenges in the region. Lessons learned from the experimental policy action – including the value of a challenge-based approach and the value of stakeholder engagement throughout the project cycle were then applied to Wallonia's S3 renewal process.

Testing new smart specialisation governance models

Regions in industrial transition face a series of governance challenges when it comes to implementing S3s. Noteworthy among these is a lack of clarity in the roles different actors play in S3 implementation, as well as limited collaboration in the Entrepreneurial Discovery Process. Often, certain groups, particularly SMEs, have been under-represented in consultations on smart specialisation priorities. Furthermore, mechanisms to promote co-ordination among S3 actors are often lacking in industrial transition regions (Kristensen, Pugh and Grillitsch, 2022^[30]). The presence of a variety of actors and the importance of ensuring proper co-ordination lies in the cross-sectoral nature of industrial transition and that successful transition requires action in more than one policy area, or one dimension, at once. Yet, many regions may lack the necessary institutional capacity to address the multifaceted challenges presented (OECD, 2019^[2]).

Just as an experimental approach to initiatives for advancing industrial transition can be valuable, using it to advance smart specialisation can also be valuable in its capacity to promote interagency co-ordination and collaboration, engage stakeholders, advance knowledge exchange and learning, and leverage regional networks. Small-scale policy experiments are one way to test the practical application of new governance structures for enhancing smart specialisation. Box 3.12 provides examples of how pilot actions have reinforced flexible and efficient governance for smart specialisation.

Box 3.12. Examples of smart S3 models inspired by experimental policy action in regions in industrial transition

- **East and North Finland's** seven sub-regions each have their own S3. They also have a long history of co-operation. In 2018, the seven regions developed a close model of co-operation, called ELMO. The ELMO model produced a joint East and North Finland in Industrial Transition Smart Specialisation Strategy 2019-2023, which co-exists with each sub-region's S3. This model supported the close co-ordination of S3 project implementation among the seven sub-regions and achieved better results advancing industrial transition. Long-term collaboration among East and North Finland's seven sub-regions will continue in the Smart Specialisation in East and North Finland 2022–2027 (ELMO II) project.
- **Slovenia's** Smart S3 contains ten smart specialisation priorities. All of them are governed by newly established Strategic Research and Innovation Partnerships (SRIPs) that bring together

quadruple helix representatives. Slovenia's pilot action to implement a collaborative innovation voucher system tested one of the SRIPs with the aim of supporting the development of Smart Industries (Industry 4.0) and Smart Factories. The pilot action served as an initial step in determining the viability of these partnerships and SRIPs can be seen as a large-scale follow-up of the pilot action. The pilot action demonstrated that smart specialisation priorities should be defined based on partnerships involving the private sector, knowledge institutions, the state and other stakeholders.

- **Wallonia** introduced five Strategic Innovation Areas (SIAs) as part of its updated smart specialisation strategy. Once the SIAs were established, the region opened a call to express interest in Strategic Innovation Initiatives (SIIs) – concrete projects that could meet the objectives of the SIAs. Contrary to previous initiatives, SIIs were not project-based calls with a pre-defined budget. Instead, they represented an expression of interest from innovation stakeholders in the region, seeking collaboration on identified issues within the area, such as enhancing healthcare innovation, renewing energy systems and promoting sustainable housing. This approach was initially tested through Wallonia's HIA (Box 3.2).

Source: Based on OECD (2023^[4]), "Slovenia's High Impact Action: Establishing an Industry 4.0 Transformative Mechanism - In-depth assessment", https://www.oecd.org/regional/governance/RIT_HIA_Slovenia.pdf; OECD (2023^[5]), "Wallonia's High Impact Action: "Plastics Go Green and Circular" Challenge - In-depth assessment", https://www.oecd.org/regional/governance/RIT_HIA_Wallonia.pdf; OECD (2023^[10]), East and North Finland's High Impact Action: Cross-regional Voucher System to Stimulate Digitalisation and Circular Economy in the Tree, Wood, and Timber Value Chain - In-depth assessment, https://www.oecd.org/regional/governance/RIT_HIA_East_North_Finland.pdf.

Recommendations for meeting the S3 enabling condition on actions for managing industrial transition

In the 2021-27 EU Cohesion Policy period, EU regions were requested to update their S3 and respond to the following seven "enabling conditions":

1. Up-to-date analysis of bottlenecks for innovation diffusion, including digitalisation.
2. Existence of a competent regional/national institution or body, responsible for the management of the S3.
3. Monitoring and evaluation tools to measure performance towards the objectives of the strategy.
4. Effective functioning of the entrepreneurial discovery process.
5. Actions necessary to improve national or regional research and innovation systems.
6. Actions to manage industrial transition.
7. Measures for international collaboration.

Experimental approaches to governance and policy in industrial transition regions could be helpful to meet S3 Enabling Condition 6 "Actions to manage industrial transition" in their ability to promote new and targeted funding possibilities, collaboration, skills development and learning mechanisms. Such action can help to build capacity to support innovation in the updated S3s. Box 3.13 offers some ideas as to how experimentation can be applied to building capacity for smart specialisation based on findings in this project. In addition, the experimental approaches show that it is possible to use experimentation to influence Enabling Conditions 4 and 5. While this may be indirect, the experience gained through the deep stakeholder consultation, and the efforts seen in the High Impact Actions to expand innovation and innovation diffusion to other firms or sectors can only serve to support these.

Box 3.13. Using experimentation to build capacity for smart specialisation

Experimental governance and policy frameworks can be used to build capacity for smart specialisation in a variety of ways. This project highlighted the following:

- **Promoting a culture of experimentation:** Encouraging policy makers and stakeholders to embrace experimentation as a means of generating new ideas, testing innovative approaches and learning from failures. This can be achieved by creating supportive environments, providing funding for pilot projects and establishing platforms for knowledge exchange and collaboration.
- **Facilitating cross-sector collaboration:** Smart specialisation requires collaboration among various stakeholders, including government agencies, businesses, research institutions and civil society organisations. Experimentation can facilitate the formation of partnerships and networks, fostering the exchange of knowledge and resources across sectors. By bringing together diverse perspectives and expertise, collaborative initiatives can generate synergies and uncover new opportunities for specialisation.
- **Establishing policy experimentation labs:** Policy experimentation labs serve as dedicated spaces for testing and evaluating new policies, programmes and regulations. These labs can be designed as safe spaces to pilot innovative approaches and assess their effectiveness before scaling them up. Through iterative testing and learning, policy makers can refine their strategies and make evidence-based decisions to support smart specialisation.
- **Encouraging bottom-up innovation:** Experimental policy and governance frameworks should empower local communities and stakeholders to contribute to the smart specialisation process. By engaging citizens, entrepreneurs and community organisations, policy makers can tap into local knowledge and foster grassroots innovation. This can be achieved through participatory approaches, such as open innovation platforms and co-creation workshops.
- **Learning from evaluation and feedback:** Experimental policy and governance frameworks should emphasise continuous evaluation and learning. Rigorous monitoring and evaluation mechanisms help assess the impact of interventions, identify success factors and learn from failures. By incorporating feedback loops, policy makers can adapt their strategies based on evidence, refine their policies and ensure that capacity-building efforts align with the evolving needs of the region.

Source: Based on Wolfe, D. (2018^[31]), "Experimental governance: Conceptual approaches and practical cases", [https://www.oecd.org/cfe/regionaldevelopment/Wolfe\(2018\)ExperimentalGovernanceConceptualApproaches.pdf](https://www.oecd.org/cfe/regionaldevelopment/Wolfe(2018)ExperimentalGovernanceConceptualApproaches.pdf).

Conclusion

The OECD's work with the regions and countries participating in this pilot has illustrated the benefits of experimenting with governance and policy arrangements when seeking to advance industrial transition, as well as making adjustments to existing initiatives to improve their impact. The various HIAs highlighted the relevance of governance dimensions to the success of industrial transition initiatives, including framework conditions, strategic programming and active stakeholder engagement. While regions are limited in their ability to control most framework conditions, the HIAs demonstrate that there is often room for experimentation within set parameters. With regards to strategic programming, implementation and evaluation, the various actions demonstrated the importance of establishing clear guidelines to support the design and implementation of experimental initiatives – along with clear governance structures for the action, effective co-ordination and resource support. The importance and difficulties of establishing

monitoring and evaluation mechanisms to support performance measurement and learning from the experiment itself also became apparent. Furthermore, the actions also delineate the value of building effective stakeholder engagement and networks, through which knowledge, resources and learning can be shared among public, private and civil society actors when developing and implementing experimental solutions to industrial transition.

This pilot action and the work undertaken by the participating regions and countries have illustrated the benefits of experimenting with governance and policy arrangements when seeking to advance industrial transition, as well as making adjustments to existing initiatives to improve their impact. As seen in the case of East and North Finland, for example, experimenting with new funding models can promote the uptake of transition-supporting initiatives in areas that are hard to reach, such as rural and remote territories. Experimentation with non-financial support mechanisms can be equally helpful to advance industrial transformation aims. The cases of Greater Manchester and Wallonia offer an example. Moreover, the HIAs underscore the role that policy experimentation can play in supporting regional smart specialisation aims – part of the experience in Grand Est.

Consideration of these elements as well as the experiences of the participating regions and countries in the design and implementation of their actions can help other regions and countries to develop policies that better address their own industrial transition challenges.

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Notes

¹ The full list of pilot participants in the High Impact Action phase of the project were: Cantabria (Spain), Centre-Val de Loire (France), East and North Finland (Finland), Grand Est (France), Greater Manchester (United Kingdom), Hauts-de-France (France), North Middle Sweden (Sweden), Wallonia (Belgium), Lithuania and Slovenia.

² These include France Relance, France 2030, and *Territoires d'Industrie* (Industrial Territories), all of which support a relaunch of French industrial competitiveness and investment (see project case study on Grand Est) (OECD, 2022^[32]).

³ The steering committee was composed of representatives from different departments of the regional administration, regional clusters, the regional innovation agency, SOWALFIN and the region’s Cabinet of the Minister of Economy and Innovation (OECD, 2022^[9]).

⁴ After the May 2023 elections in Cantabria, it is unclear if this remains the intention.

4 A practitioner's toolbox for action to advance industrial transition

This toolbox is designed for policy practitioners and decision makers working to advance industrial transition. It draws on the experiences of the regions and countries that developed High Impact Actions (HIAs) to explore specific experimental governance and policy mechanisms that could facilitate meeting industrial transition aims. It is composed of two elements. The first is a toolkit of policy levers for industrial transition that refines and adds to the toolkit developed in 2019. The second offers an action checklist for policy makers wishing to pursue an experimental approach to designing and implementing policies and programmes targeting industrial transition.

Introduction

In 2019, the OECD developed a toolkit of policy responses to industrial transition as part of its work with eight European Union (EU) regions and two EU countries, which was integrated into the OECD report *Regions in Industrial Transition: Policies for People and Places* (2019^[1]). The toolkit focused on policy issues and policy responses relevant to industrial transition in five areas: i) preparing for the future of work; ii) broadening and diffusing innovation; iii) promoting entrepreneurship and private sector engagement; iv) transiting towards a climate-neutral economy; and v) promoting inclusive growth.

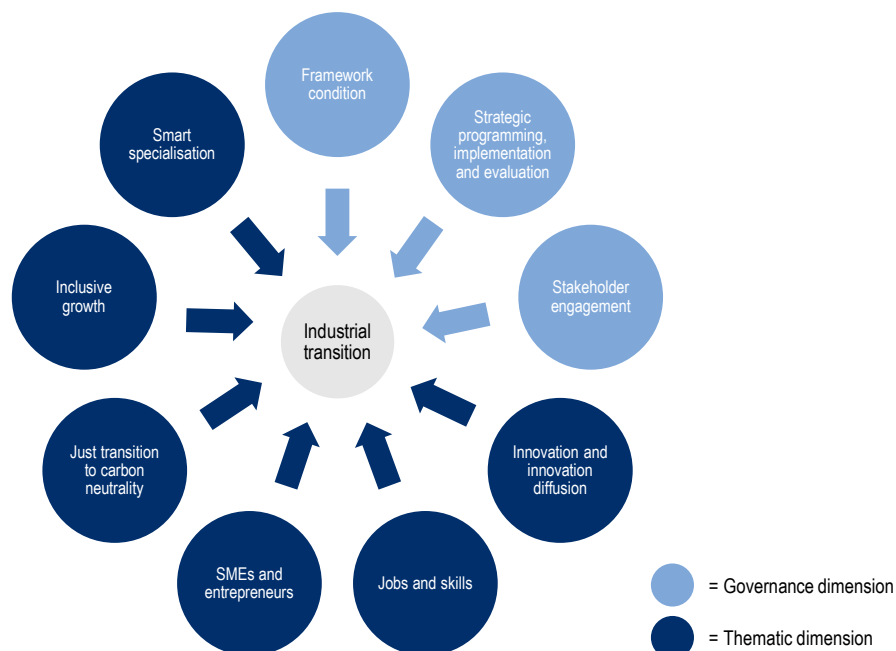
This 2023 toolbox is divided into two basic tools. The first is an updated version of the 2019 policy lever toolkit, incorporating the new analytical components and policy levers explored through the High Impact Actions (HIAs) analysed in Chapter 3 of this report. It is structured along the five dimensions of industrial transition noted above and incorporates four new ones: framework conditions, strategic planning, stakeholder engagement and smart specialisation. The second part is a checklist for policy makers who wish to apply an experimental approach to policies or initiatives targeting industrial transition.

A policy lever toolkit to advance industrial transition

The toolkit below combines the policy levers for supporting industrial transition revealed in the first phase of the European Commission-OECD Pilot Action on Regions in Industrial Transition and published in 2019, with the tools identified through this new (2022-23) phase of work.

It is organised around the nine dimensions explored in Chapter 4 of this report (Figure 4.1). The first three – all governance dimensions – are presented here for the first time. The subsequent six begin with new levers highlighted through this project and are followed by those that were identified in 2019, plus smart specialisation which was added in 2023.

Figure 4.1. Framework dimensions to industrial transition



Source: Based on current work and adapted from OECD (2019^[1]), *Regions in Industrial Transition: Policies for People and Places*, <https://doi.org/10.1787/c76ec2a1-en>.

The toolkit is by no means exhaustive and what is suggested must be considered within – and adapted to – the context of the individual region or country, its industrial transition objectives, challenges and implementation capacities.

The intention is for policy makers to use what is presented here as a guide or repository of helpful ideas, once they have established a clear set of objectives for industrial transition.

Policy levers for Dimension 1: Framework conditions

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/additional benefits
Legislative/regulatory restrictions limiting policy or programme implementation	Experiment within set legislative parameters to support innovation actors	<ul style="list-style-type: none"> Design pilot projects that explore alternative avenues for implementation that work within existing regulations. Lobby and advocate for legislative adjustments or work with higher-level authorities to identify reasonable alternatives. 	Can provide insights through real-world testing.
			Can promote greater alignment between policy and practice.
High administrative burden and rigid rules for accessing funds for innovation or innovative programmes and projects	Reduce administrative burden	<ul style="list-style-type: none"> Partner with non-governmental bodies as programme implementers if the rules that govern their activities are more flexible. Consult with stakeholders and/or potential beneficiaries to test potential simplifications. Introduce simplified grant allocation targeting start-ups. Experiment with simplified rules or processes when designing and implementing project or funding calls. 	Widens pool of potential beneficiaries for industrial transition projects.
			Can increase the absorption rate of available funds.
			Attractive to a diverse set of beneficiaries, including start-ups.
Limited political support and cultural factors affecting industrial transition initiatives	Foster strong political backing for industrial transformation	<ul style="list-style-type: none"> Proactively engage with political leadership for support on key initiatives. Develop awareness campaigns to gain public backing. Establish collaborative platforms for political entities and stakeholders (e.g. civil society organisations [CSOs]). Work with stakeholders with ties to targeted business communities to explain the benefits of innovation, upskilling green and digital transitions and other transition challenges. 	Provides legitimacy to explore new approaches.
			Encourages experimentation and risk taking.
			Encourages cross-sector collaboration and builds support.

Policy levers for Dimension 2: Strategic programming, implementation and evaluation

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits
Complex, multi-sector and multi-level nature of industrial transition	Ensure industrial transition initiatives align with relevant framework and sector strategies	<ul style="list-style-type: none"> Map relevant frameworks (e.g. regional development, smart specialisation, rural development) or sector strategies and policies (e.g. innovation, skills, energy). Identify the intersection of sectoral goals with industrial transition objectives. Introduce industrial transition as a specific policy area within regional development to build a strong policy base. Ensure that all innovation objectives and initiatives of smart specialisation strategies (S3s) also advance industrial transition aims. 	<p>Can generate development and innovation in new or underdeveloped sectors.</p> <p>Can optimise the use of resources (human, financial and infrastructure).</p> <p>Can ensure greater policy coherence and minimise overlap or duplication.</p>
	Reinforce cross-sectoral co-ordination	<ul style="list-style-type: none"> Place industrial transition on the agenda of existing cross-sector working groups or committees within government or establish a new one dedicated to it. 	<p>Can optimise the use of resources for industrial transition.</p> <p>Can ensure greater policy coherence and minimise overlap or duplication.</p>
	Build stronger exchange with and among quadruple helix actors (government, academia, industry and civil society)	<ul style="list-style-type: none"> Work with or set up multi-stakeholder, multi-level groups (with a particular focus on quadruple helix actors) to identify common challenges and objectives. 	<p>Can promote collaborative or complementary solutions to industrial transition and/or innovation challenges.</p> <p>Builds social capital of the partners and region.</p>
Need for flexible and adaptable policies and programming	Use a pilot or experimental approach to test policies or programmes	<ul style="list-style-type: none"> Identify clear objectives for the experiment and prioritise activities. Establish a dedicated team for implementation. Ensure sufficient funding to launch the experiment and anticipate resource needs if scaling up or out. <i>Ex ante</i>, establish a monitoring and evaluation framework for the experiment. Undertake an <i>ex post</i>, independent review of results before determining success. Develop a strategy for scaling the policy experiment in case of success. 	Can test the effectiveness of a policy or programme in a controlled environment.

Policy levers for Dimension 3: Stakeholder engagement

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/additional benefits
Building a culture or understanding of engagement among policy makers and stakeholders	Provide specialised training in stakeholder engagement to policy team(s)	<ul style="list-style-type: none"> Contract a stakeholder engagement (e.g. from a CSO) to support engagement practices and train policy staff. 	Builds in-house knowledge of engagement mechanisms that can be applied in the future.
	Systematically identify stakeholders and stakeholder groups	<ul style="list-style-type: none"> Map relevant stakeholders and categorise them into relevant groups. 	<p>Sets the basis for more effective communication and engagement.</p> <p>Facilitates design and implementation of collaborative initiatives.</p>
	Build effective communication with and among stakeholders	<ul style="list-style-type: none"> Use a variety of communication mechanisms (e.g. surveys, polls, websites, mailing lists, newsletters, in-person meetings, interviews, social media) that meet stakeholder preferences. Establish working groups or advisory committees. Disseminate clear, concise, relevant and timely information about industrial transition. Use simple, plain language. Give complete information on transition, programmes, projects, etc., including objectives, priorities, funding, timing and results. 	<p>Can generate important feedback for programmes and projects.</p> <p>Builds stakeholder buy-in.</p> <p>Ensures transparency and accountability towards stakeholders.</p>
	Encourage openness and frank exchange with stakeholders, including with under-represented groups	<ul style="list-style-type: none"> Actively seek feedback from stakeholders when designing and implementing transition initiatives. Partner with local community organisations, CSOs or advocacy groups. Clearly explain why the feedback is important, how it will be used and why it was not used when this is the case. 	<p>Bridges knowledge gaps.</p> <p>Can ensure transition initiatives are acceptable to a wide range of stakeholders.</p> <p>Can increase confidence in institutions promoting transition.</p> <p>Facilitates programme adjustment.</p> <p>Promotes continued willingness of stakeholders to provide feedback.</p> <p>Increases democratic quotient of the industrial transition process.</p>

Policy levers for Dimension 4: Innovation and innovation diffusion

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits
Advancing large-scale, cross-sectoral societal challenges associated with industrial transition (e.g. renewable energy, digital and green transitions)	Use co-production methodologies to identify and implement targeted policy solutions	<ul style="list-style-type: none"> • Adopt a challenge-oriented approach to industrial transformation. • Map possible positive and negative externalities of policy interventions (e.g. of green transition) on industrial transition. 	Helps tackle large-scale, cross-sectoral, societal problems in a collaborative fashion (e.g. renewable energy, green transition).
			Contributes to better vertical and horizontal co-ordination.
			Generates collaboration and innovation opportunities.
			Better prioritises action and investment.
			Strengthens the local innovation ecosystem.
			Mitigates trade-offs and levers multiplier effects across policy interventions.
			Can expand participation base to less-engaged stakeholders.
Can help to bridge regional innovation divides.			
Creating and sustaining a comprehensive innovation ecosystem	Broaden the notion of innovation	<ul style="list-style-type: none"> • Build public and private sector understanding of and capabilities for innovation. • Make public procurement more innovation-friendly by incorporating innovation-related criteria in public tenders. 	Encourages stronger local engagement with innovation processes.
			Develops strategic prioritisation of innovation-enhancing assets.
			Strengthens capacity for public investment decisions that benefit innovation.
Lack of (small) business capabilities for innovation	Accelerate the digital transformation	<ul style="list-style-type: none"> • Provide financial support and technical assistance (e.g. loans, vouchers) to encourage digital uptake in small and medium-sized enterprises (SMEs). • Provide training and guidance to SMEs on digital transformation (personal advice, webinars, events). • Organise information campaigns and cluster-wide initiatives to popularise the benefits of digital technologies among SMEs and micro-entrepreneurs. • Invest in enhanced digital connectivity of SMEs. 	Can help to enhance digital skills in firms and support industrial modernisation.
	Stimulate innovation take-up in traditional businesses	<ul style="list-style-type: none"> • Design information campaigns and build exchange possibilities to explain the value added of innovation in a traditional business. • Use targeted training and collaboration to help identify where innovation can occur and the benefits it may yield. • Offer tailored guidance (e.g. one-on-one advice/mentoring, webinars, events, contacts with clusters) to generate interest and contacts for potential innovations. 	Expands innovation ecosystem.
			Promotes industrial diversification and modernisation.
			Encourages SME action on and investment in innovation.
			Can foster strategic collaborations across stakeholders.
Generates cost savings for businesses, which could be reinvested.			

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits	
	Scale business innovation networks	<ul style="list-style-type: none"> • Support industrial clusters and cross-cluster fertilisation. • Link cluster policies to global value chains. • Support open innovation and the use of open data. 	<p>Integrates local industries into global value chains.</p> <p>Encourages industrial diversification and upgrading.</p>	
	Support effective university-industry co-operation	<ul style="list-style-type: none"> • Support collective research agreements. • Encourage, invest in and streamline processes for new licenses and patents. • Help identify potential candidates for spin-off firms. • Encourage labour mobility between academic and industry. 	<p>Creates knowledge spillovers.</p> <p>Can protect intellectual property.</p> <p>Encourages investment as there is a potential for protected return on investment.</p> <p>Improves the opportunities for SMEs to participate in research commercialisation.</p> <p>Meets skills demand by industry.</p>	
	Territorial disparities in innovation diffusion	Leverage the potential of cities and tradeable sectors	<ul style="list-style-type: none"> • Ensure effective policy co-ordination across administrative boundaries. • Improve urban-rural transport connections. 	<p>Strengthens productivity in rural areas.</p> <p>Ensures job opportunities across territories.</p>
		Capitalise on unique regional strengths for innovation	<ul style="list-style-type: none"> • Support new industry formation by building on local innovation assets. • Adopt territorial branding to highlight regional uniqueness to relevant stakeholders. 	<p>Capitalises on unique strengths to branch out into new activities.</p> <p>Can encourage investment across the region.</p>

Policy levers for Dimension 5: Jobs and skills

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits
A talent and skills deficit resulting in vacant jobs, particularly in management	Reinforce recruitment capacities of firms	<ul style="list-style-type: none"> Identify gaps and obstacles to talent recruitment and retention together with employers. Develop, in close collaboration with employers, recruitment strategies based on a comprehensive skills strategy. Implement management training programmes tailored to specific industrial needs. Establish partnerships with educational institutions to create customised leadership courses. Work with firms to identify potential financial or non-financial incentives for skilled management professionals to relocate or remain in targeted regions. Conduct, together with employers, foresight and skills mapping activities. Set up and maintain Workforce Intelligence Networks. Establish expert groups on future skills needs. 	<p>Enhances the quality of leadership and management in industries.</p> <p>Strengthens regional competitiveness for talent attraction and retention.</p> <p>Fosters alignment between talent and education/training supply and industry demand for skilled labour.</p> <p>Avoids skills shortages and skills mismatches.</p>
	Enhance regional attractiveness	<ul style="list-style-type: none"> Identify regional “attractiveness strengths”, which have the potential to attract skilled workers to the region. Develop a regional branding campaign based on messages that resonate with the targeted workforce. Provide employers with tools that can help them to incorporate regional attractiveness messages into their recruitment campaigns. 	<p>Contributes to the diversity of a region’s workforce.</p> <p>Strengthens regional competitiveness for talent attraction and retention.</p> <p>Can help attract new firms to the region or generate new business start-ups.</p>
Limited productivity in traditional industrial sectors	Nurture innovation and facilitate skills adaptation in industrial SMEs	<ul style="list-style-type: none"> Implement targeted innovation support programmes for industrial SMEs. Facilitate access to new technologies through tech extension services. Encourage collaboration between traditional industries and innovation hubs. Provide grants or non-financial incentives to support research and development (R&D) in traditional sectors. Develop mentoring programmes connecting established industry leaders with emerging entrepreneurs. Implement flexible digital support strategies tailored to traditional industries, enabling SMEs to increase productivity and revitalise employment rather than undergoing full-scale transformation. 	<p>Can increase firm profitability.</p> <p>Supports job creation.</p> <p>Supports economic growth.</p> <p>Strengthens collaboration and knowledge exchange between established industries and new entrants.</p>
Lack of skilled workers to move into new and emerging activities	Strengthen the capacity of firms to address their human resource needs internally	<ul style="list-style-type: none"> Strengthen the human resources (HR) management capacity of SMEs. Link SME support policies with education and training policies. 	<p>Improves responsiveness of education and training provision to market needs.</p>
	Involve local stakeholders in the planning and design of regional skills initiatives	<ul style="list-style-type: none"> Strengthen links between firms, universities and other research bodies. Support collaborations and partnerships with vocational schools, universities and small and large firms. 	<p>Develops targeted training in new technologies and sectors of strategic importance.</p> <p>Anchors local employers in regional economic development.</p>

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits
	Provide workforce and management development for start-ups and scale-ups through training and upskilling programmes	<ul style="list-style-type: none"> • Offer training subsidies and vouchers, training leave allowances and/or tax incentives. 	<p>Helps workers gain highly specialised competencies needed by firms.</p> <p>Helps managers gain additional knowledge of firm training needs.</p>
	Foster the (re)integration of youth, women, older people and other vulnerable populations in the labour market	<ul style="list-style-type: none"> • Set up training initiatives and courses for vulnerable groups. • Develop local employment services so that they can be provided effectively on line. 	Retains human capital.
Limited investment in new sources of employment and productivity growth	Provide support to firms to become more innovative and transition from more traditional sectors to new technologies	<ul style="list-style-type: none"> • Support information and communication technology (ICT) training and technology extension programmes for firms. 	<p>Facilitates access to and benefits from global value chains.</p> <p>Supports the development of transversal skills to manage innovation and technological change.</p>
	Assist firms in better using skills at the workplace	<ul style="list-style-type: none"> • Establish Workplace Leadership Centres and Local Employer Networks. 	Enhances cross-industry innovation.
	Encourage knowledge exchange and co-operation across larger and/or newer firms and smaller and/or older firms	<ul style="list-style-type: none"> • Ensure SME participation in employer networks. • Foster industry clusters, create regional brands and enhance product market strategies and company learning networks. 	Creates an attractive innovation ecosystem.

Policy levers for Dimension 6: SMEs and entrepreneurs

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits
Limited resources to encourage firms to innovate	Combine non-financial and financial (when possible) incentives for innovation	<ul style="list-style-type: none"> • Provide one-on-one coaching and mentoring to firms participating in a project. • Streamline the grant application system to encourage smaller firms and start-ups to apply for available funding. • Create a welcoming environment for experimenting with innovative projects that normally might not be funded (possibly with some financial support). • Work with firms to understand how adopting new production techniques or processes can generate cost savings that can be reinvested into their business. 	Can attract a different set of firms to innovate, broadening the innovation ecosystem.
Limited access to funding and finance for start-ups and scale-ups	Facilitate access to funding and finance and broaden the range of financial instruments available	<ul style="list-style-type: none"> • Facilitate access to traditional instruments: grants, soft loans and loan guarantees. • Create or encourage alternative and non-bank sources of finance: crowdfunding, peer-to-peer lending, business angel networks and venture capital. • Create digital funding and finance opportunities (e.g. financial technology [fintech], blockchain). 	<p>Reduces start-up and SME reliance on debt instruments.</p> <p>Generates employment.</p> <p>Creates an attractive entrepreneurship ecosystem in different types of regions.</p>
	Strengthen financial literacy	<ul style="list-style-type: none"> • Provide training and mentoring programmes, including accessible information and guidance. 	<p>Greater financial management capacity by firms.</p> <p>Provides firms with tailored advice on funding and financing possibilities.</p>
	Apply collaborative or other innovative funding and financing models	<ul style="list-style-type: none"> • Link funding and financing availability to cross-jurisdictional or other collaborative projects. • Focus on short-term or flexible funding for innovation or innovation diffusion, particularly when testing new products. 	<p>Can reduce investment barriers to innovation.</p> <p>Builds innovation ecosystem and strengthens social capital.</p> <p>Supports investments by start-ups and SMEs.</p>
Limited access to entrepreneurship skills and networks for start-ups	Support entrepreneurs with information, training, coaching and mentoring	<ul style="list-style-type: none"> • One-stop shops and information centres. • Entrepreneurship training courses provision. • Dedicated mentoring programmes. • Incubators and accelerators. 	<p>Creates an attractive entrepreneurship ecosystem.</p> <p>Provides start-ups and scale-ups with important business foundations.</p>
	Strengthen entrepreneurial networks	<ul style="list-style-type: none"> • Organise networking and platform events organised by local (public) stakeholders. • Provide online networking platforms. 	Strengthens sales and export networks and partner search.
	Enhance start-up and SME participation in collaborative research	<ul style="list-style-type: none"> • Enhance start-up and SME participation through vouchers, science parks, incubators and accelerators. • Exploit research through spin-off creation. 	<p>Supports innovation in entrepreneurial activity.</p> <p>Creates knowledge spillovers.</p>
	Ensure a friendly regulatory environment through simplified regulations and registration procedures	<ul style="list-style-type: none"> • Introduce one-stop shops and web portals about national and regional regulations and public support schemes. • Hold regional-level Regulatory Impact Assessments (RIAs). • Introduce e-government services to cut transaction costs for firms. • Consult the private sector on a regular basis to identify regulatory requirements that are perceived as overly burdensome. 	<p>Improves efficiency.</p> <p>Cuts transaction costs for entrepreneurs.</p> <p>Creates an attractive entrepreneurship ecosystem.</p>

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits
Improving the enabling environment for entrepreneurship	Foster an entrepreneurship culture through the development of entrepreneurial mindsets	<ul style="list-style-type: none"> • Ensure that universities are well-resourced to equip students with an entrepreneurial mindset, as well as relevant soft skills (e.g. problem-solving, creativity and teamwork). • Anchor entrepreneurship curricula in schools, organise public events for children/students, and digital hubs. • Promote entrepreneurship through media campaigns, direct interactions, school visits of entrepreneurs and business games in schools. 	<p>Promotes entrepreneurship as an alternative to contract work.</p> <p>Provides under-represented groups such as women or youth with role models.</p>

Policy levers for Dimension 7: A just transition to carbon neutrality

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits
Possible disproportionate negative effects of industrial transition initiatives on specific industries, communities or individual groups	Build stakeholder involvement in green/industrial transition policy or programme development process from the early to late stages of the cycle	<ul style="list-style-type: none"> Implement co-creation processes and collaborative design sessions with affected industries and individuals to explore policy topics and identify ways to overcome real or perceived threats. Build partnerships with local stakeholders to advance a sustainable and just industrial transition. 	Fosters inclusiveness in policy design and implementation.
			Allows exploration of new ideas to advance industrial and green transitions.
			Can create alignment between bottom-up proposals and top-down decisions.
Unintended negative consequences of policy or programme initiative for a green transition	Adopt an experimental approach	<ul style="list-style-type: none"> Pilot policy or programme in one region or locality. Set up a robust monitoring and evaluation system to track progress and identify positive and negative externalities associated with the intervention. Identify potential unintended consequences and work with relevant government bodies and non-governmental institutions to identify ways to avoid or mitigate the effects. 	Allows identification of potential unintended consequences and trade-offs in a contained or controlled manner.
			Facilitates adjustments early on.
Strengthening sustainable relocation and/or reconversion of industrial sites	Create sustainable industrial business parks of the future	<ul style="list-style-type: none"> Establish sustainable industrial business parks with a focus on green technologies and practices. Collaborate with local governments and businesses to ensure alignment with sustainability goals. 	Encourages sustainable industrial practices and fosters collaboration between businesses and local authorities.
Creating job opportunities for the transition to the climate-neutral economy	Support green skills and jobs through training and upskilling	<ul style="list-style-type: none"> Upskill and retrain displaced workers in accordance with local labour needs. Provide training on environmentally friendly production methods for existing workers. 	Expands skills set to move from workers from declining to emerging industries.
	Support workers in transition	<ul style="list-style-type: none"> Provide job-search training to displaced workers. Promote a flexicurity model in the labour market to ensure that the labour market reconciles employer needs for a flexible workforce with worker needs for security. 	Progressively greens existing industries.
	Support measures for a just transition	<ul style="list-style-type: none"> Adopt age and gender-tailored support measures. Ensure affordable social housing stock. 	Ensures the transition to high-quality jobs.
Lack of business opportunities for green innovations	Promote environmental compliance and green business practices	<ul style="list-style-type: none"> Simplify regulatory requirements (e.g. standardised permits, general binding rules). Provide regulatory incentives for establishing environmental management systems. Set up information-based tools to help businesses navigate regulatory requirements. Offer economic incentives (e.g. grants, low-interest loans, tax incentives) to promote green business practices. 	Ensures a fair transition.
	Encourage innovation in environmentally friendly technologies	<ul style="list-style-type: none"> Provide support for green R&D. Support the creation of green innovation clusters. Encourage environmentally friendly public procurement. 	Creates an attractive innovation ecosystem for firms.
			Encourages a higher awareness for green business opportunities.
			Stimulates investments in green technologies.

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits
Advance towards long-term goals of a climate-neutral transition through short- and medium-term action	Foster local energy transitions	<ul style="list-style-type: none"> • Encourage financial and strategic support schemes. • Establish strategic collaborations among stakeholders (local governments, non-governmental organisations, academia, research institutes, energy companies, energy co-operatives, etc.) 	<p>Helps re-orient investments towards energy and environmental goals.</p> <p>Strengthens local leadership.</p>
	Integrate the climate-neutral transition into larger regional development strategies	<ul style="list-style-type: none"> • Set low-carbon objectives and related indicators. • Support co-operation and stakeholder alignment. 	Promotes long-term strategic thinking on how to reduce carbon emissions.
	Ensure an enabling environment for a green transition	<ul style="list-style-type: none"> • Revise and reinforce structural policies. • Phase-out fossil subsidies. • Consider establishing a carbon tax. 	Creates supportive business conditions.

Policy levers for Dimension 8: Inclusive growth for industrial transition

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/additional benefits
Limited economic inclusion	Increase the economic value of excluded groups to businesses of all sizes	<ul style="list-style-type: none"> Support disadvantaged groups (unemployed, under-employed, skills-mismatched people, women, youth) through targeted career guidance and retraining schemes. 	<p>Can increase productivity and wage growth of underutilised economic groups.</p> <p>Generates inclusive employment opportunities.</p>
	Strengthen employment standards	<ul style="list-style-type: none"> Engage with industry leaders to generate alignment around employment standards. Consider voluntary, bottom-up initiatives, such as employment charters, as possible avenues for strengthening employment standards. Promote business-to-business mentoring on raising employment standards. Introduce financial and functional incentives for more inclusive employment. 	<p>Can attract a more diverse set of workers to an area, industry sector or specific company.</p> <p>Can increase labour inclusion.</p>
	Build employer interest in upskilling local communities	<ul style="list-style-type: none"> Educate employers regarding how new technologies or production methods can help their businesses and the skills required to take advantage of this. 	Supports business adaptation to industrial transition.
		<ul style="list-style-type: none"> Ensure that the necessary training programmes for upskilling are available and communicated to employers. 	Helps businesses leverage opportunities presented by new technologies and transition processes.
		<ul style="list-style-type: none"> Consult with employers and staff regarding the right incentives for adopting new methods and/or upskilling. 	Identifies incentive mechanisms that can increase training uptake.
	Build awareness of innovation and industrial transition in traditional industries and geographically remote areas	<ul style="list-style-type: none"> Design targeted skills programmes for owners and employees of traditional industries and geographically remote areas. Connect businesses in remote areas, whose activities are complementary in the context of transition-related efforts. 	<p>Supports transitions in industries.</p> <p>Can generate growth in remote areas, attracting or retaining skilled workers.</p>
		Encourage territorial co-operation through rural-urban partnerships	<ul style="list-style-type: none"> Expand and maintain physical infrastructure (road networks, trains). Expand supply chains (e.g. agro-industry) and links between SMEs and universities and/or research centres.
Ensure digital connectivity and digital services in remote regions	<ul style="list-style-type: none"> Encourage ICT investments and virtual delivery of public e-services in rural areas. 	Stimulates investments in digital technologies.	
Strengthening regional well-being	Develop and implement a regional-level well-being framework	<ul style="list-style-type: none"> Develop regional measures of material well-being and quality of life. Track regional performance on well-being and quality of life measures. Engage civil society and academia to define well-being measures. 	Can support greater well-being outcomes.
Improving inclusive growth governance	Build strategic partnerships and stakeholder engagement	<ul style="list-style-type: none"> Maintain existing or set up new multi-actor and level partnerships (e.g. political co-ordination committees, local working groups, collaborative open networks, platforms, agencies). 	Fosters stakeholder engagement.
			Increases efficiency.

Policy levers for Dimension 9: Smart specialisation

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits
Limited capacity to implement S3 during an industrial transition process	Build collaboration around S3 and industrial transition	<ul style="list-style-type: none"> Clearly identify links between regional development objectives, S3 objectives and industrial transition objectives. Develop S3 collaborative regional development plans. Establish S3 regional innovation hubs focused on local needs. Facilitate S3 policy experimentation labs. Boost collaboration in the Entrepreneurial Discovery Process by increasing the representation of under-represented groups. Build co-ordination mechanisms among S3 actors through different engagement modalities (e.g. fora, dialogue events, peer-to-peer exchange opportunities, online platforms). Reinforce S3 implementation through knowledge sharing and exchange. Organise S3 workshops and training sessions. Develop S3 partnerships and networks to share knowledge. Provide funding for S3 pilot projects to encourage experimentation. Ensure clarity of roles among actors involved in S3 implementation. 	<p>Provides potential to optimise resources to meet industrial transition and S3 objectives.</p> <p>Builds social capital of the region by generating knowledge and stakeholder exchange.</p> <p>Can foster opportunities for collaboration.</p>
	Promote a culture of S3 experimentation	<ul style="list-style-type: none"> Create S3 innovation labs aligned with research goals. Support S3 interdisciplinary research projects to foster innovation. Facilitate S3 cross-sector networks for information sharing. 	Generates new ideas for S3.
	Engaging in comprehensive S3 analysis	<ul style="list-style-type: none"> Conduct S3 industry consultations with targeted stakeholders. Perform S3 regional assessment studies to understand needs. Organise S3 participatory processes to gain insights. 	Understanding the interplay of S3 challenges.
	Test new S3 governance models	<ul style="list-style-type: none"> Implement Strategic Research and Innovation Partnerships (SRIPs). Introduce collaborative models. Launch Strategic Innovation Initiatives (SIIs) with targeted goals. 	Promotes knowledge exchange with stakeholders.
Need to meet sustainability and inclusivity aims associated with industrial transition	Building a robust S3 institutional framework	<ul style="list-style-type: none"> Strengthen interagency co-ordination through structured dialogues. Engage diverse stakeholders in industrial transition planning. 	Facilitates collaboration across sectors and regions.
	Ensure that S3 integrates environmental considerations, resource efficiency and supports the transition to a low-carbon economy	<ul style="list-style-type: none"> Take stock of tools and systems necessary to meet industrial transition aims and identify how S3 initiatives can help improve these. Use an experimental approach to test projects that support industrial transition and also feed into S3 objectives. 	Promotes industrial transition objectives and S3 aims.

Policy issue	Policy response	Potential suite of implementation mechanisms	Rationale/ additional benefits
	Link innovation policy levers with sustainable growth objectives in S3	<ul style="list-style-type: none"> • Facilitate S3 inclusive growth strategies to support diverse communities. • Implement S3 environmental regulations with a focus on sustainable innovation. • Establish S3 funds for encouraging sustainable innovation practices. 	<p>Reinforces the intersection between S3 and industrial transition.</p> <hr/> <p>Can optimise resources for the implementation of industrial transition and S3 initiatives.</p>

Towards successful policy experimentation: An experimentation checklist

Policy experimentation refers to a process in which innovative policies or programmes are tested on a small scale before potentially being implemented on a larger scale. It involves a learning-by-doing approach that allows policy makers to understand the effectiveness of proposed policies and to adjust them if necessary (Centre for Public Impact, 2018^[2]).

The following checklist is intended to serve as a guide for policy makers thinking about an experimental approach to support industrial transition. The checklist should be considered as a tool to identify what elements should be in place to increase the probability for an experimental initiative to successfully advance industrial transition goals. In particular, policy makers and practitioners in regions (or countries) in industrial transition can use the checklist to self-assess their policy experimentation readiness. The checklist should not be considered exhaustive and users are welcome to add additional ideas relevant to their needs and context.

The checklist is inspired by the insights gathered from the regions and countries participating in the European Commission-OECD pilot project. It is designed to lead policy makers through a set of steps:

1. Situation assessment.
2. Planning the experiment.
3. Implementing the experiment.
4. Engaging with stakeholders.
5. Monitoring, evaluating and learning.

Each step has a series of associated statements or questions a policy maker can ask themselves to consider when thinking about an experimental approach. To help guide the process, there is a checklist at the end of each row where the policy maker can indicate whether the response to the question is “yes” or “no”. There is also a place for comments/notes should the policy maker decide to provide more information about the status of a particular activity, identify targets, timing, stakeholders, partners, etc.

Once complete, the checklist could guide the policy maker in the development of an action plan for applying an experimental approach to initiatives that can help advance a region’s industrial transition.

The policy experimentation for industrial transition checklist

STEP 1: Situation assessment			
Step 1.A. Developing a comprehensive picture of the history, current and potential future development of the region’s dominant industrial sectors			
Please indicate if the following statements apply.	Yes	No	Comments/notes
A thorough quantitative and qualitative assessment has been carried out of where the region’s productive strengths are and where they could be optimised.			
A horizon scanning exercise has been carried out to identify other potential/future areas of opportunity or growth based on existing productivity or industrial profile.			
Step 1.B. Identifying the industrial transition characteristics of the region			
Please identify the characteristics that apply.	Yes	No	Comments/notes
A lower-than-average per capita gross domestic product (GDP) as a percentage of the national average.			
An average annual GDP growth of 1% or less.			
A lower than national (or EU) average level of population with tertiary education.			
A rising unemployment rate.			

A lower than national average life expectancy.			
Performance in the middle to bottom half of OECD Regional Well-being indicators (e.g. jobs, income, environment, community, life satisfaction, housing, health, education).			
Step 1.C. Identifying the industrial transition dimensions that the experiment should or could support			
Please select all dimensions that apply. Add dimensions, if applicable.	Yes	No	Comments/notes
Innovation and innovation diffusion.			
Building skills and jobs of the future.			
Supporting SMEs and entrepreneurs.			
Just transition to carbon neutrality.			
Inclusive growth.			
Smart specialisation.			
Other, namely: ...			
Step 1.D. Framework conditions: Identifying if there is a culture of continuous learning and improvement			
Please indicate if the following statements apply.	Yes	No	Comments/notes
Risk taking is supported.			
Policy makers are open to working in uncertainty.			
Policy makers have room to fail (failure is viewed as a learning opportunity).			
Learning is valued.			
Policy makers have flexible mindset.			
Step 1.E. Framework conditions: Identifying if risk can be mitigated			
Please indicate if the following statements apply.	Yes	No	Comments/notes
There is a political climate or political appetite for experimentation.			
A broad base of internal stakeholders is engaged.			
A cost/benefit analysis of the experiment is complete.			
Other risk-mitigating factors, namely: ...			
Step 1.F. Identifying potential legislative or regulatory obstacles			
Please indicate if the following statements apply.	Yes	No	Comments/notes
Rules regarding funding and financing programmes or projects are considered to be obstacles.			
High levels of red tape/administrative burden.			
STEP 2: Planning the experiment			
Step 2.A. Setting the experiment's objectives and priorities			
Please answer the following questions.	Yes	No	Comments/notes
Has the experiment's purpose been clearly established and communicated to relevant stakeholders?			
Have realistic but ambitious objectives been set for the experiment?			
Are the objectives clearly relevant and realistic for addressing industrial transition challenges?			
Have complementarities in the experiment's objectives been identified with other strategic documents, sectoral objectives or programmes?			
Have relevant internal (government) and external stakeholders been engaged in identifying the objectives?			
Is there a clear prioritisation and sequencing of objectives and actions?			

Step 2.B. Designing the experiment			
Please answer the following questions.	Yes	No	Comments/notes
Has the experiment been designed with stakeholder input?			
Is the experiment designed with room for adjustment if circumstances change (e.g. a need to change the specific project or project target)?			
Are there existing channels for knowledge sharing and learning by the project team and among stakeholders?			
If there are no existing channels for knowledge sharing and learning, can these be established?			
Can the experiment can be scaled up if successful and appropriate (i.e. costs, resource requirements and impact at a larger scale are part of the experiment's design or considered in a mid-term evaluation process)?			
Is scaling out possible if the experiment is successful (i.e. costs, resource requirements and impact in other sectors are part of the experiment's design or considered in a mid-term evaluation process)?			
Step 2.C. Identifying the resources required			
Please answer the following questions.	Yes	No	Comments/notes
Can a team dedicated to managing, co-ordinating and delivering the experiment be established?			
Is there access to the human resource skills/expertise necessary to carry out the experiment (e.g. project management, thematic expertise, working with stakeholders, etc.)			
Is there sufficient funding to carry out the experiment for its full lifecycle?			
Has consideration been given to how to fund a scaled-up or scaled-out version of the experiment if appropriate?			
STEP 3: Implementing the experiment			
Step 3.A. Identifying institutional capacity to implement the experiment			
Please indicate if the following statements apply.	Yes	No	Comments/notes
The implementing body has the credibility and mandate to manage and co-ordinate the experiment through its lifespan.			
The implementing body has the institutional capacity to partner with other government actors and with non-government stakeholders.			
There is institutional capacity to launch and maintain active dialogue with stakeholders and use the feedback in a constructive manner.			
The experiment has a clearly defined and communicated governance structure.			
The roles and responsibilities of actors can be clearly attributed.			
Mechanisms to co-ordinate different actors and stakeholders involved in the experiment are in place or can be developed and made operational.			
STEP 4: Engaging with stakeholders			
Step 4.A. Identify the integration of stakeholder engagement throughout the experiment's lifecycle			
Please indicate if the following statements apply.	Yes	No	Comments/notes
Potential stakeholders are mapped (e.g. firms, local government, academia, civil society, citizens).			
Stakeholders are/will be involved in designing the experiment.			
The proposed experiment holds stakeholder appeal.			
Stakeholders are actively informed of the experiment in a two-way consultation.			
Targeted stakeholders have the capacity and willingness to engage with the experiment.			
Stakeholder feedback is actively sought on different aspects of the experiment throughout its lifecycle.			

Communication strategies are in place or will be developed to share the results and insights of the experiment with all relevant stakeholders.

STEP 5: Monitoring, evaluating and learning

Step 5.A. Identifying the monitoring and evaluation framework established for the experiment

Please answer the following questions.	Yes	No	Comments/notes
Has a clear timeframe for the experiment been established and communicated to relevant stakeholders?			
Have realistic and measurable <i>ex post</i> evaluation criteria been established to identify if the experiment can/should be scaled up or scaled out?			
Will an independent <i>ex post</i> evaluation be undertaken at the end of the experiment's pre-established timeline?			
Has a monitoring and evaluation framework been developed to measure the experiment's outputs and outcomes?			
Have realistic targets and measurable indicators been developed and agreed upon with stakeholders?			
Are necessary qualitative or quantitative data accessible?			
Is there an accessible channel to clearly communicate results to stakeholders and citizens in an easy-to-understand manner for transparency, accountability and reporting?			
Will the lessons and insights from the experiment be captured to improve the experiment and/or to develop future experiments and industrial transition initiatives?			

References

- Centre for Public Impact (2018), *A Brief Introduction to... Policy Experimentation*, [2]
<https://www.centreforpublicimpact.org/assets/documents/CPI-A-brief-introduction-to-Policy-experimentation.pdf>.
- OECD (2019), *Regions in Industrial Transition: Policies for People and Places*, OECD Regional Development Studies, OECD Publishing, Paris, <https://doi.org/10.1787/c76ec2a1-en>. [1]

5 Overview of the High Impact Actions

This chapter presents an overview of the ten High Impact Actions (HIAs) carried out as part of the European Commission-OECD pilot action on Regions in Industrial Transition. For each pilot region and country, the chapter presents the main industrial transition challenges, the corresponding HIA undertaken, its governance and management, its impact on overcoming industrial transition challenges, the experimental angle, scalability potential and, finally, policy lessons learned.

Introduction

This chapter is dedicated to the specifics of each High Impact Action (HIA). It is divided into two sections. The first section is a table summarising the HIAs approved by the European Commission. The second is a summary of findings from each of the ten HIAs studied in this project. These summaries offer information on the industrial transition challenges faced by each region or country, the action itself, its governance and implementation mechanisms, the results of the action to date and lessons learned.

Both parts are useful for policy makers as a means to understand how a set of regions and countries addressed some of the challenges associated with industrial transition through an experimental approach to governance and policy measures. It should be noted that the experimental approach can be subjective: what one region may never have done in the past and was experimental in its own regional context (e.g. direct dialogue with stakeholders on matters of industrial transition) may not be experimental in another region. However, in all cases, the HIAs yielded clear insights into what can work to advance industrial transition aims for the teams that were managing them.

Section 1: HIA summary

Table 5.1. Summary of HIAs approved for the pilot regions and countries

Pilot region or country	Main industrial transition challenge addressed by the HIA	HIA title	Key instruments of the HIA	Potential for scale-up/ replicability
Cantabria (Spain)	Inclusive growth	Cantabria High Impact Initiative for Industrial Transition: Social Inclusion in the Primary Industries	<ul style="list-style-type: none"> Support for renewable energy, digitalisation and social inclusion. Stakeholder interviews, seminars and co-operation with rural businesses. Funding, expert support and stakeholder mobilisation to build capacity in energy efficiency, innovation and rural development. 	<ul style="list-style-type: none"> High potential for replication in other sectors through diffusion activities. Scaling out to other sectors depends on building new partnerships.
	Broadening and diffusing innovation			
Centre-Val de Loire (France)	Preparing for the jobs of the future	SME Executive Recruitments and Skills Competence Audits and Regional Attractiveness Strategy	<ul style="list-style-type: none"> Actor mapping to strengthen regional attractiveness. Regional workshops, company audits, participation in a recruitment fair. 	<ul style="list-style-type: none"> HIA was implemented through a number of steps, including offering support for rural areas, reviewing the audit process, providing talent attraction workshops and better understanding candidate expectations.
East and North Finland (Finland)	Just transition: Transition to a circular economy	Cross-regional Voucher System to Stimulate Digitisation and Circular Economy in the Tree, Wood and Timber Value Chain	<ul style="list-style-type: none"> Innovation vouchers to small and medium-sized enterprises (SMEs) for projects with a higher level of technology readiness. 	<ul style="list-style-type: none"> ELY Centres can now directly finance SMEs that deal with higher technology readiness level projects, which they were not doing before. Long-term collaboration among East and North Finland seven sub-regions will continue in the project Smart Specialisation in East and North Finland 2022-2027 (ELMO II).
	Digital transition			

Pilot region or country	Main industrial transition challenge addressed by the HIA	HIA title	Key instruments of the HIA	Potential for scale-up/ replicability
Grand Est (France)	Just transition: Transition to low-carbon economy	Interdisciplinary innovation hub for low-carbon energies for the automobile industry	<ul style="list-style-type: none"> Promoting projects to create sustainable, attractive and competitive industrial areas through the establishment of the Business Parks of the Future (ZAF) concept. The ZAF concept defines principles of land neutrality, sustainability, local dynamism, human centricity and connectivity. 	<ul style="list-style-type: none"> The HIA can be scaled up by replicating successful experiments from the project in other zones, focusing on different industrial sectors per zone. Feedback and good practices will be shared among stakeholders to ensure effective replication.
	Broadening and diffusing innovation			
Greater Manchester (United Kingdom)	Inclusive growth	Good Employment Charter	<ul style="list-style-type: none"> Voluntary membership and assessment scheme that seeks to improve employment standards across the region. 	<ul style="list-style-type: none"> The charter concept shows particular promise, given that a growing number of Combined Authorities across the UK are already developing comparable initiatives. Could be applicable to European (EU) member state regions as well.
	Jobs of the future and skills			
Hauts-de-France (France)	Preparing for the jobs of the future	Accelerating the digital transition of traditional industrial companies in Hauts-de-France	<ul style="list-style-type: none"> Company presentations. Digital diagnostic support and coaching and mentoring for traditional SMEs. 	<ul style="list-style-type: none"> The HIA pilot action allowed the region to build specific tools, identify good practices and form partnerships that can help promote the development of the 2021-27 S3.
	Digital transition			
	Support to small and medium-sized enterprises (SMEs)			
Lithuania	Just transition: Transition to a circular economy	Roadmap for Lithuania's Industrial Transition to a Circular Economy	<ul style="list-style-type: none"> Develop a sectoral circular economy roadmap through a multi-stakeholder, co-creation approach. 	<ul style="list-style-type: none"> The HIA can be scaled up by using the roadmap and action plan established to promote the circular economy. The lessons learned from this HIA can guide future policy developments and industrial transitions.
North Middle Sweden (Sweden)	Broadening and diffusing innovation	Energy and resource efficient low carbon society transition lab and seed fund	<ul style="list-style-type: none"> Collaborative workshops promoted knowledge sharing, learning and network building around the challenge of the region's low-carbon transition. A seed fund financially supported collaborative projects focused on advancing a low-carbon future industrial transition. 	<ul style="list-style-type: none"> The challenge lab concept is scalable and applicable to any industrial transition challenge. Its regional approach fosters trust and collective purpose, making it particularly relevant for S3s. The model could also be successfully applied at the national level to various industrial transition challenges.
	Just transition: Transition to a low-carbon and circular economy			
Slovenia	Broadening and diffusing innovation	Slovenian Pilot for an Industry 4.0 Transformative Mechanism	<ul style="list-style-type: none"> Innovation voucher scheme to support SMEs in their efforts to innovate in the field of Industry 4.0. Collaborative Industry 4.0 projects through stakeholder engagement to bridge the gap between research and practical application in industry. 	<ul style="list-style-type: none"> The HIA is scalable by establishing physical centres that foster Industry 4.0 collaboration and through partnerships with innovation agencies to support SMEs. Appropriate performance frameworks that bridge public and private sector perspectives can also contribute to the concept's successful

Pilot region or country	Main industrial transition challenge addressed by the HIA	HIA title	Key instruments of the HIA	Potential for scale-up/ replicability
Wallonia (Belgium)	Just transition: Transition to a circular economy	Piloting a challenge-based approach for SMEs support – Plastics Go Green and Circular	<ul style="list-style-type: none"> Challenge-based approach consisting of two calls for circular economy projects applied to the plastics industry. Lump sum grants of EUR 15 000 as well as support, advice and mentoring for companies with selected project proposals that address the identified challenges in the plastics sector. 	<p>expansion.</p> <ul style="list-style-type: none"> The HIA's challenge-based approach can be scaled up to address broader industrial transition issues, such as the digital divide, stimulate the engagement of regional actors and foster a more integrated innovation ecosystem.

Section 2: HIAs overviews and lessons learned

Cantabria (Spain): Social inclusion in the primary industries

Industrial transition challenges in Cantabria

Cantabria is a region located on Spain's northern coast. Its economy has been historically based on agriculture, fishing and small-scale industry. Cantabria's agri-food sector represents about 20% of the region's total industrial gross domestic product (GDP) and employment. It consists of 390 companies, most of which are SMEs with 10 to 249 employees or micro-enterprises with fewer than 10 employees. The region's agri-food industry has been traditionally based on artisanal production methods and has faced several challenges in recent years, including the need to adapt to digitalisation and address the climate crisis.

Cantabria faces a number of challenges that affect its industrial transition capacity. These include its lack of an innovation culture, the lack of business awareness of benefits from the green and digital transitions, a green and digital skills shortage, a small and potentially shrinking workforce and the weak capacity of smaller companies to engage with potential innovation funding sources due to limited knowledge and resources.

Cantabria's HIA

Cantabria's HIA was designed to address large societal challenges, such as climate change and digitalisation, by promoting societal innovation. It focused specifically on building demand for and supporting the use of renewable energy, digitalisation technologies and promoting social inclusion in the agri-food sector. The HIA supported three different but complementary projects (Kibus, Solabria and Teican). These projects reached about 20 local companies, all in rural areas. They were struggling to retain workers, had workforce-intensive production processes and staff that required upskilling.

The HIA helped these small, traditional agri-food companies address cost-related obstacles associated with the green and digital transitions. It also helped build awareness of the benefits associated with such transitions and the relative level of skills necessary. By supporting small businesses in isolated rural areas, the HIA not only contributed to generating social inclusion in these areas but also helped firms mitigate the risk of being left behind in the industrial transition.

Governance and management of the HIA

Day-to-day implementation of the HIA was the responsibility of the Innovation Directorate. The financial support associated with the HIA allowed Cantabria to hire a dedicated project co-ordinator who was able to mobilise the stakeholders, co-ordinate the project, identify opportunities and bring various parties together to maintain dialogue among various stakeholders.

In order to select the Kibus, Solabria and Teican projects and develop the repository of Cantabrian agri-food companies, the Innovation Directorate hired a Cantabrian agri-food sector expert through a public call. The expert and the Innovation Directorate approached 100 companies with a questionnaire and interviewed 47 in person. Three final companies were selected – Kibus, Solabria and Teican – and each received up to a maximum of EUR 40 000 to carry out their pilot projects.

The Innovation Directorate mobilised and consulted many regional and local stakeholders around innovation, sustainability, rural development and digitalisation. It communicated about the HIA initiative and consulted as many stakeholders as possible through seminars, workshops, media interviews and social networks.

Results of the HIA and impact on industrial transition

The HIA addressed some of Cantabria's industrial transition challenges through concrete actions. First, it supported small businesses in isolated rural areas at higher risk of being left behind in the industrial transition. For example, the energy efficiency improvements introduced by Solabria and Teican for small agri-food businesses helped to reduce costs and increase competitiveness. Second, the HIA helped to strengthen Cantabria's innovation ecosystem by fostering stakeholder collaboration. In particular, the interviews conducted to assemble the repository of agri-food companies enabled the team to identify potential synergies or complementarities among companies or activities and the Innovation Directorate then highlighted these to companies.

Third, the HIA addressed the lack of awareness among small, traditional agri-food companies of the potential benefits of the renewable energy and digital transitions, as well as related skill needs. For example, the Solabria and Teican projects trained small agri-food company employees in energy efficiency and renewable use and increased their awareness of the environmental impact of their businesses. Fourth and finally, the HIA helped small companies with administrative processes, which are usually bottlenecks to obtaining funds to innovate. In particular, Solabria, Teican and the Cantabrian Rural Development Network helped explain the HIA to Sidra Somarroza and other supported companies, helped with the writing of project proposals and the paperwork.

The HIA's challenges, experimental approach and scalability

In addition to COVID-19, a key implementation challenge facing Cantabria's HIA was the initial reluctance of rural businesses to participate in the initiative. The HIA's experimental approach helped to overcome this issue. To gain the trust and support of small rural companies, the Innovation Directorate tested a new model of stakeholder engagement by conducting interviews to assemble the repository of agri-food companies. The face-to-face interaction and interest in the work and challenges of these businesses expressed by the Innovation Directorate during interviews were key in generating interest and support for the HIA among the companies.

With regards to continuity and scalability, the Innovation Directorate would like to further advance industrial transition support in Cantabria as a result of the policy lessons generated by the HIA. Four concrete lines of follow-up work are envisaged. They include identifying new ideas on how to address industrial transition challenges, supporting other pilot projects like those of the HIA in all five sectoral priorities of Cantabria's 2021-27 S3, developing a formal monitoring and evaluation system to track pilot actions' progress and impact, as well as strengthening the innovation ecosystem in rural areas.

Lessons learned from the HIA

The HIA's implementation also generated valuable policy lessons, including the following:

- Appointing a dedicated staff member with expertise in the targeted transition sector is a contributing factor to success.
- Using a variety of mechanisms to foster an innovation culture may be required.
- Additional policy levers could increase company awareness of innovation, renewable energies and digitalisation benefits (e.g. information and outreach campaigns, additional financial incentives and support, and corresponding capacity building and training programmes).
- An institutional co-ordinator is required to establish and maintain the necessary cross-sector collaboration.
- Limiting administrative burdens and simplifying administrative procedures can attract more participants to industrial transition initiatives.

Link to the case study online: https://www.oecd.org/regional/governance/RIT_HIA_Cantabria.pdf

Centre-Val de Loire (France): SME Executive Recruitment and Skills Competence Audits: Challenges experimentation approach

Industrial transition in Centre-Val de Loire

Centre-Val de Loire is an industrial region in France, with industry accounting for 141 400 regional jobs in 5 500 companies and representing 22.4% of the region's private sector employment. The manufacturing industry accounted for almost 89% of all industrial employment, with 125 674 employees. The industrial fabric of the region is highly specialised in the pharmaceutical, rubber (plastics), metals processing and machinery and equipment sectors.

It is a significant challenge for many regions undergoing an industrial transition to ensure an appropriate skills base. In Centre-Val de Loire, the lack of skills is concentrated in higher-level management and administrative posts, which is linked to the limited ability of firms in the region to recruit such talent effectively. In 2019, a regional industrial employment survey by the French national employment agency found that 70% of roles were considered difficult to fill due to a lack of suitable candidates. The region faces another related industrial transition challenge: a lack of regional attractiveness (or ability to attract and retain businesses, investors and skilled workers). As such, Centre-Val de Loire's S3 includes a focus on strengthening skills to better integrate innovation into its economic fabric and to overcome the recruitment challenge facing industrial companies in the region.

Centre-Val de Loire's HIA

Centre-Val de Loire's HIA consisted of a four-step process to help SME managers improve their recruitment practices and improve the region's attractiveness to a young and highly skilled workforce. First, the Centre-Val de Loire region and its innovation agency Dev'Up mapped all sub-regional actors that could support territorial attractiveness. The latter also developed a series of actions to promote exchange on sub-regional initiatives aimed at supporting regional attractiveness. Second, Centre-Val de Loire and the French employment association APEC designed and hosted a regional workshop to reinforce collective awareness of recruitment strategies in industrial SMEs, to evaluate practices within these companies and to inspire innovative practices.

Third, APEC designed and implemented company audits for industrial SMEs, which assessed the recruitment, management and employee retention practices of participating companies. The objective of the audits was to develop better management practices to attract and retain talent. Fourth and finally,

Centre-Val de Loire participated in APEC's 2021 recruitment fair in Paris to attract talent to the region. During the fair, APEC presented 22 job offers from the region to over 1 500 candidates, while the region also organised a workshop at the fair on the benefits of working and living in the various territories of the Centre-Val de Loire region. This helped not only attract regional talent but also retain such individuals.

Governance and management of the HIA

The HIA relied on several governance mechanisms that successfully supported its implementation and impact. First, strong co-operation between regional partners APEC and Dev'Up in their respective areas of expertise enabled the issues of recruitment to be addressed in a holistic manner. Second, the HIA mobilised a large number of regional stakeholders around recruitment and regional attractiveness through clusters and competitiveness poles, which were involved in identifying and contacting industrial SMEs in need of support. In addition, APEC fostered strong relationships with SME managers and interested candidates in the region through a personalised outreach approach.

Third, during and following the implementation of the HIA, APEC and the Centre-Val de Loire region collected a range of quantitative and qualitative data for the different activities, using a variety of techniques, in order to process and analyse them and use them for future actions. These included company audits to identify the skills needs of employers and data collection at the recruitment fair to build profiles of interested candidates and their expectations.

Results of the HIA and impact on Centre-Val de Loire's industrial transition

The HIA successfully supported the industrial transition challenge of ensuring a skilled labour force and preparing for the jobs of the future. Doing so required the region to address difficulties in the recruitment and retention of qualified people, particularly experienced managers and administrators. In particular, the HIA stands out from previous actions of collective support and awareness-raising in industrial SMEs through the way that it provided individualised assistance to industrial SME managers coupled with regional attractiveness measures. This was a first for the region.

Policy experimentation, lessons learned and scalability of the HIA

In terms of policy experimentation, the HIA tested an entirely new approach to industrial SME support in the spheres of recruitment and skills availability required to meet industrial transition challenges. To turn this objective into action, the Centre-Val de Loire regional government developed a strategy that provided targeted support to help attract highly qualified profiles. The strategy complemented previous approaches, which tended to offer more generic, one-way support, such as providing information about the region on its website.

Novel elements from the HIA included the regional attractiveness mapping, which was undertaken for the first time in the Centre-Val de Loire region and helped it to develop an overview of who is doing what in terms of supporting territorial development. They also included the workshop series "From recruiting to attracting talent", which included a workshop designed specifically for executive managers of industrial SMEs. It focused on the ways in which talent can be attracted, including by better understanding candidate expectations and how to improve employer branding to attract qualified candidates.

The HIA was also experimental in its approach to dealing with implementation challenges. For example, during implementation, APEC experimented with different ways of motivating industrial companies to take part in the audit. In a first attempt, it contacted many companies by email and received only 2 responses out of 285 outreach emails sent. APEC concluded that the email approach was not effective and turned to direct phone calls instead, which yielded significantly better results and helped secure a critical mass of businesses willing to participate in the company audits.

In terms of continuity and scalability, APEC took a series of steps to continue HIA activities, including supporting rural areas, reviewing the audit process, providing talent attraction workshops and better understanding candidate expectations.

The HIA also generated a series of policy lessons that may be instructive for policy makers looking to support industrial transition, including the following:

- A thorough and well-rounded strategy is necessary to ensure a skilled workforce.
- Supporting industrial transition and the future of jobs requires individualised support and awareness-raising coupled with regional attractiveness measures.
- Geographical location plays an important role in the attractiveness of industrial roles that need to be filled.
- A well-designed sequence of experimental policy actions, such as those taken in the HIA, can provide valuable information to support future industrial transition initiatives.

Link to the case study online: https://www.oecd.org/regional/governance/RIT_HIA_Centre-Val_de_Loire.pdf

East North Finland (Finland): Cross-regional voucher system to stimulate digitisation and circular economy in the tree, wood and timber value chain

Industrial transition in East and North Finland

The East and North Finland (ENF) region is Finland's largest, covering almost 70% of the country's total territory. ENF is one of Finland's five NUTS 2 regions and is home to 1.3 million inhabitants, accounting for 23% of Finland's population. ENF is in the top 10% of the OECD's most sparsely populated regions – with 8.5 people per km². It accounts for approximately 20% of Finland's GDP, which is proportional to its share of the national population. Industry is the region's largest sector, generating 35% of the total economic turnover. Micro-enterprises make up 96% of all ENF companies, 95.5% of which employ less than 5 people. However, due to their limited resources and lack of access to financing, micro-enterprises often face significant challenges in developing their innovation capabilities without external support.

The region currently faces a number of industrial transition challenges. First, there is a need to ensure a sustainable transition that benefits the environment and boosts the region's innovation potential. Applying technological solutions to environmental challenges, energy issues and the sustainable use of natural resources is a key challenge for the region. Second, there is a need to promote sustainable resource management at a regional level. Adopting measures that further support the region's industrial circular economy would be valuable in order to use natural resources in a sustainable and resource-efficient manner. Third, there is a need to improve digitalisation, innovative technologies and production processes. At the national level, only 8% of Finland's SMEs employ digital solutions, while in ENF, the figure is as low as 2-3%.

Governance and management of the HIA

Several elements underscored the bespoke governance and management approach of the HIA. In particular, the funding approach of the initiative was not aligned with Finnish national legislation, as regional councils are not permitted to finance business development under Finnish law. However, the HIA's voucher system presented an opportunity to experiment with a new funding model as the pilot programmes were directly funded by the European Commission's grant and did not rely on national funding or EU funding mechanisms that were channelled through Finland's government.

In addition, regional councils seized the stakeholder engagement opportunity provided by the HIA to bring together all seven HIA project beneficiaries through joint meetings to help them interact and present their interim findings. This engagement was important for the regional councils to identify the challenges and opportunities encountered by participating businesses and to build their own collaboration capacity. Both of these elements could be useful for future projects.

Results of the HIA and contribution to addressing industrial transition challenges

The HIA supported ENF's industrial transition on a number of fronts. First, it managed to “reduce” the long physical distances between ENF sub-regions by strengthening the linkages among governments and enterprises and expanding stakeholder networks. Second, it focused on promoting projects with a higher level of technology readiness. In this way, the HIA implementation helped businesses to experiment and develop products that could be commercialised. Third, it helped project beneficiaries to experiment with new and digital solutions to advance the circular economy in the tree, wood and timber value chain.

Fourth, it helped to raise awareness about the green industrial transition, by promoting the adoption of circular economy practices and emphasising how the industrial sector can implement them as part of an industrial transition process. Fifth and finally, the HIA contributed to improving an understanding of certain regional development challenges facing ENF, such as a workforce deficit in strategic industries. The worker shortage is partly caused by the inability of employees to upskill and insufficient investment in business research and development (R&D), which is especially apparent in industrial SMEs.

While the HIA was deemed a success by stakeholders, there were several unforeseen obstacles, notably relating to: i) overcoming physical distance in collaboration; ii) implementing the HIA within existing administrative boundaries; iii) following up with SME beneficiaries after the HIA; and iv) aligning and co-ordinating funding mechanisms among national and regional funding strategies.

Scalability of the HIA and lessons learned

The HIA constituted an experimental initiative in a number of ways. First, beneficiaries were required to form a consortium of at least one enterprise and one R&D organisation from different ENF sub-regions. This helped companies to extend their partner network, which could, in turn, lead to future cross-regional collaborations. Second, the initiative's funding model differed from Finnish national legislation, which does not allow regional councils to finance business development, with funding provided through a European Commission grant. Beneficiaries and regional councils welcomed this more direct funding model as it meant less time was spent on administrative processes.

In terms of the continuity and scalability of the HIA, it was a one-off opportunity, as the funding model that was tested is not mentioned in national government legislation on regional development. As a result, ENF cannot continue to fund these types of projects itself. While regional councils are still not permitted to finance companies, the Centres for Economic Development, Transport and the Environment (ELY Centres) can now provide direct funding to SMEs presenting higher technology readiness level projects, which they did not do before, at least not with this explicit focus. This was considered a positive outcome of the HIA.

In addition, long-term collaboration among ENF's seven sub-regions will continue in the project Smart Specialisation in East and North Finland 2022-2027 (ELMO II). The project aims to support the development of clusters in the ENF sub-regions to better understand the business community throughout ENF and to strengthen co-operation, especially within the ENF's S3 2019-23 framework. The project will produce an evaluation of the implementation and realisation of the East and North Finland in Industrial Transition Smart Specialisation Strategy 2019-2023.

The HIA also generated a number of valuable policy lessons, including the following:

- Greater innovation can be achieved through funding and integration.

- Public support to businesses aiming for higher technology readiness levels (TRLs) can make a difference.
- Building social capital to advance industrial transition should be encouraged.
- Regional government bodies can be effective enablers of innovation.
- Short-term funding may be more appropriate than long-term funding to diffuse innovation.

Link to the case study online: https://www.oecd.org/regional/governance/RIT_HIA_East_North_Finland.pdf

Grand Est (France): Interdisciplinary innovation hub for low-carbon energies for the automobile industry

Industrial transition in Grand Est

Industrial relocation is at the heart of economic recovery strategies at the national and regional levels in France. For the Grand Est region – which was created through a territorial reform in 2016 that merged the former regions of Alsace, Lorraine and Champagne-Ardenne into the single Grand Est region – this reform, combined with the emphasis on industrial relocation presents a major challenge in terms of securing land capacity to accommodate relocations. Lorraine has many former highly industrialised areas but, not only is land difficult to secure, these are frequently brownfield sites with pollution problems. Furthermore, laws advancing the ecological and low-carbon transitions are accelerating and often place limits on the redevelopment of brownfield sites. In Champagne-Ardenne, there is less industrial land capacity as the region did not host many industrial activities in the past. Meanwhile, Alsace has some high-quality sites and there is considerable pressure for land.

To support local authorities in their industrial relocation strategy, the *Banque des territoires* launched a national scheme to identify immediately available land to enable new industrial projects to be set up quickly. The Grand Est region developed a regional version of the *Banque des territoires* programme.

Grand Est's HIA

Grand Est's HIA complements these two schemes, the industrial relocation strategy of the *Banque des territoires* and that of the region itself. The action's aim is to prepare the region's industrial estates for the needs and challenges of the future. It consists of a programme to identify innovative projects capable of meeting the current and future challenges facing industrial estates and to support project promoters and industrial estates in implementing these projects.

The HIAs set about to: i) provide the region's territories with a range of economic facilities tailored to the business needs of today and tomorrow; ii) speed up the transition to innovative solutions for industrial estates; and iii) enable existing businesses to prosper and also improve their environmental performance. It did so by creating and establishing the criteria for Business Parks of the Future (*Zones d'activités du futur*, ZAFs). A ZAF must have a neutral impact on the land, be exemplary in terms of sustainability, create a leverage effect and energise the region, place people at the heart of its operation and guarantee interfaces within the park and with its environment. This definition is accompanied by a tool to assess the current status of a zone and to support it in its future ambitions. The ZAF programme is currently supporting the development of its first demonstration project: a former textile industry site.

The experimental nature of the HIA

The HIA tested a model for involving stakeholders through collaborative workshops. These workshops created a forum for expression and the social links necessary for this type of experimental project. It brought together a network of stakeholders around the project and ensured that the ZAF was supported by stakeholders that were aware of the issues the initiative was seeking to address and capable of

mobilising other stakeholders in the area. The name *Zones d'activités du futur* was co-developed with the stakeholders. The process also generated new encounters among the players involved.

Policy lessons from the HIA to drive forward industrial transition

The ZAF programme is helping reverse the trend of de-industrialisation in the Grand Est region, strengthening industrial know-how and creating new, high-added-value activities while responding to ecological and climate challenges.

Dedicated funding, an agency and a project manager have been key to its success. The type of activities carried out through the HIA (e.g. collaborative workshops and the development of evaluation tools) requires human resources and expertise that regions and cities do not always have. The HIA involved players with solid expertise in the fields concerned, making it possible to obtain a robust method and results, as well as a consensus among the stakeholders. The participation of industrialists and other private players helps involve the private sector in ecological transition activities.

The intention is to continue with the ZAF programme and extend it. Eventually, those that have used the ZAF model will be able to share their feedback with other sites in order to test and replicate good practices throughout the region and, ideally, the country. This can help regions with business or industrial parks contribute to the aims of industrial transition, through its economic dimensions as well as its environmental ones.

Link to the case study online: https://www.oecd.org/regional/governance/RIT_HIA_Grand_Est.pdf

Greater Manchester (UK): Good Employment Charter

Industrial transition in Greater Manchester

As a post-industrial territory that has been transitioning to a service-led economy, the Greater Manchester City Region faces a number of economic challenges. Regional productivity lags behind the United Kingdom (UK) national average, while regional employment is increasingly concentrated in a number of low-productivity, low-wage sectors. Research has identified a number of factors that may be contributing to this productivity deficit, including poor skills utilisation by local businesses as well as poor health outcomes in the region, both of which are linked to low employment standards.

The powers of regional governments, such as the Greater Manchester Combined Authority (GMCA) to solve these challenges are limited by the United Kingdom's assignment of subnational responsibilities. At the same time, however, regional multi-level governance arrangements do leave some room for experimental, subnational initiatives to support employment standards, productivity and wage levels.

The Greater Manchester Good Employment Charter

The Greater Manchester Good Employment Charter is one such experimental initiative. The charter is a GMCA-funded voluntary membership and assessment scheme that seeks to improve employment standards across the region. It aims to proactively encourage local employers from all sectors to promote fair pay, good working conditions and inclusive career opportunities. At the core of charter-related activities is the charter document itself, which outlines seven principles of good employment to which employers in Greater Manchester should aspire, along with related criteria.

The charter and its criteria provide the basis for inner and outer tiers of voluntary association with its principles by employers, which are known as the Supporter and Member tiers. The tier of inner association – or closest association – with the charter is the membership tier. Charter Members consist of employers that have undergone a rigorous membership application process and have been assessed to be demonstrating excellent employment practices across all seven principles of the charter. The tier of outer

association with the charter is the supporter's tier. Charter Supporters consist of employers that have made a commitment to supporting the principles of the charter and are working towards membership but have not yet sufficiently improved their employment standards to be eligible for membership.

Governance and management of the charter

There are a number of key elements that have underscored the charter's success. First, an extensive process of co-design and co-implementation involving stakeholders from a wide range of backgrounds has helped charter stakeholders to define a collective vision of good employment that is both ambitious and realistic for employers. This has encouraged small, medium and large organisations, including non-governmental organisations, from a wide range of sectors across Greater Manchester to involve themselves in its activities.

Second, a rigorous monitoring and evaluation system for Supporters has helped promote high employment standards in the Greater Manchester region. In addition to an extensive data-gathering process, where organisations must provide widespread evidence of their good employment practices, aspiring members are also assessed by the charter board, which draws on its extensive cross-sectoral expertise to evaluate an employer's application. This system has ensured that charter activities lead to tangible results rather than a box-ticking exercise. Third, the "carrot and stick" governance mechanisms associated with the charter have helped ensure employer engagement and adherence to the standards. Carrot mechanisms include the positive marketing that is associated with charter involvement and the linkage of the charter by GMCA with its criteria for public procurement tenders. Stick mechanisms, which are currently being implemented, will include the requirement for Supporters to consistently show they are improving their good employment practices or face expulsion from the charter.

Results of the charter and impact on industrial transition

There are over 120 000 employees across the Greater Manchester City Region that currently work for a supporter or member organisation of the charter. Given that member organisations have met rigorous good employment criteria across each of the seven principles, while supporter organisations are required to regularly demonstrate that they are making progress in improving their organisational practices, this suggests the charter has led to a material improvement in the region's employment standards in a relatively short space of time.

The charter's success in encouraging companies across Greater Manchester to raise their employment standards is also helping to address industrial transition challenges in the region, such as a lack of skilled workers, the exclusion from the workforce of various groups and, by extension, low productivity. This is because a number of charter criteria (e.g. those focused on skills development or health-related work support) are not only valuable from an employee welfare standpoint but also have the added benefit of strengthening the region's economic competitiveness. Should the engagement of Greater Manchester employers with the charter continue to grow, these economic benefits will continue to increase as well.

Policy experimentation, lessons and scalability of the charter

Given that combined authorities in England (United Kingdom) lack the legal authority to affect employment regulation, the charter represents an experimental attempt to improve employment standards and concurrently tackle industrial transition challenges by building societal consensus from the bottom up rather than relying on top-down legislative or regulatory avenues. As a voluntary initiative that requires only minimal financial support from the government, the charter also provides excellent value for money as a vehicle for improving employee welfare. The policy experimentation by the GMCA that led to the charter's creation and implementation has also generated a number of valuable insights.

First, while the charter has been very successful in engaging with organisations from different sectors overall, it has faced challenges in a minority of sectors that have a history of poor employment practices, notably hospitality and retail. The charter's success in penetrating other sectors with a historically poor track record of employment standards suggests that outreach may sometimes be more successfully achieved through business-to-business activities, rather than through the charter itself.

Second, encouraging a wider range of employers to engage with the charter will depend on strengthening incentives for involvement. Taking steps to more clearly outline the business case for charter engagement while popularising the charter more widely among employees in Greater Manchester are two areas where additional progress could create a strong inducement for organisational involvement.

Third, a small number of adjustments to charter implementation may be needed to improve its effectiveness. In particular, internal monitoring and evaluation activities need to be expanded to cover charter Members as well as Supporters in order to ensure that Members continue to serve as role models for good employment standards.

With regards to scalability, the charter concept shows particular promise at an EU regional level, given that a growing number of combined authorities across the United Kingdom are already developing comparable initiatives. At the same time, however, charter initiatives may meet greater success in regions where administrative boundaries are well aligned with economic needs, as this can help to forge multi-stakeholder consensus and facilitate engagement.

Link to the case study online:

https://www.oecd.org/regional/governance/RIT_HIA_Greater_Manchester.pdf

Hauts-de-France (France): Accelerate the digital transition of traditional industrial firms in Hauts-de-France

Industrial transition in Hauts-de-France

The Hauts-de-France region in northern France is the third-largest region in France by population and the sixth-largest by GDP. The region has a long history of activity in traditional industrial sectors, such as coal mining, textiles and steel production. Yet the decline of these industries has affected regional employment and economic activity. Moreover, the region is heavily reliant on just a handful of industries, such as agribusiness, logistics and the automotive sector. This concentration makes the region vulnerable to economic shocks and highlights the need for diversification into new industries. In addition, the region's 9.8% unemployment rate is higher than the averages for France (7.9%), the European Union (7.7%) and the OECD area (6.2%). In some parts of the Hauts-de-France region, unemployment rates are as high as 16%.

While unemployment is one of the series of challenges that regions in industrial transition face, Hauts-de-France's faces others which, if addressed, could also have a positive influence on unemployment rates. First, according to the European Regional Innovation Scoreboard 2021, the region was ranked in the category of "moderate innovator", with a below-EU average performance on several indicators, including collaboration among innovative SMEs and lifelong learning.

Second, the region has a shortage of skilled workers, in particular in the fields of digital technology and advanced manufacturing. This limits the development of modern technologies and products that could support the growth of new industries and the transformation of existing ones. Third, the region has a limited number of "champion" enterprises, with only around 500 companies leading the way out of a total of 300 000.

Haut-de-France's HIA

The HIA was designed to tackle several industrial transition challenges in the Hauts-de-France region. In particular, it aimed to support SMEs with potential for innovation. It also sought to support the digital transition of SMEs. Additionally, it aimed to strengthen the breadth and depth of public support to regional innovation. Several actions were developed in support of these goals.

First, the Hauts-de-France innovation and development agency, *Hauts-de-France Innovation Développement* (HDFID), sought to raise awareness of the HIA among SMEs that could benefit from its support. Through 15 HDFID presentations, 150 regional companies were made aware of the many benefits of digitalisation and digital transition, including improvements in productivity, profitability and job creation. Second, the HDFID provided diagnostic support to 50 SMEs on how to begin the transition to digital technology by developing a diagnostic tool that consisted of 100 questions. Third, following the diagnosis, the 50 SME managers and their teams received coaching to develop a strategy, objectives and an action plan for the digital transformation of their company's organisation, processes and tools.

Governance and management of the HIA

Two main elements underscored the governance and management of the HIA. First, its focus on digitalisation to help generate a more sustainable and competitive economy, create new jobs, reduce territorial disparities and enhance innovation was well aligned with the Hauts-de-France region's S3. The HIA represents a concrete commitment to the S3 and a significant step forward in terms of creating more dynamic and attractive regional development. Second, to document the impact of the HIA, the HDFID established a series of steps to be taken with each company receiving support. These included the preparation of biannual reports by an expert within the agency in order to monitor progress and ensure that objectives were being met and the use of a customer relationship management (CRM) tool by the HDFID to monitor the pilot action. A final report produced in 2021, which offered a retrospective examination of the HIA's progress, served as a starting point to reflect on the pilot action's impact.

Policy experimentation, challenges encountered and scalability of the HIA

The experimental nature of Hauts-de-France pilot action lies in its testing of new methods and tools to support digital transformation in traditional industries. The pilot action involved a series of tools that provided companies with diagnostic, coaching and support in areas such as digital strategy, cybersecurity and data management, among others. By providing companies from traditional manufacturing industries with the tools and knowledge they needed to adapt to the digital age, the initiative contributed to boosting their competitiveness and relevance in an increasingly digital world.

Several challenges were encountered during the implementation of the HIA. First, the COVID-19 pandemic affected recruitment and economic activities in the region. While the HIA in its initial form had foreseen the issuance of vouchers to participating SMEs to help them hire a transition manager, ultimately, no vouchers were issued owing to a lack of interest. Reasons for this included the challenging economic situation during the COVID-19 pandemic, which made it less attractive for SMEs to hire additional staff.

Second, many SMEs involved in the HIA had limited resources. Despite their willingness to adopt innovative practices, many of them could not afford to hire a dedicated digital technology specialist. The diagnostic and coaching services showed that many industrial SMEs did not intend to increase their workforce following the pandemic, making it difficult to deepen digital transition policies. Third, there were significant variations in personnel among the supported SMEs. The differences in company size and structure made it difficult to effectively diagnose and monitor their progress.

With regards to scalability and continuity, the HIA pilot action allowed the region to build specific tools, identify best practices and form partnerships that can help promote the development of the 2021-27 S3. Moving forward, the HDFID can rely on its expertise and the experience gained to expand its support and awareness-raising of the digital transition among traditional businesses.

Policy lessons learned from the HIA

The HIA's implementation also generated valuable policy lessons for advancing industrial transition, including the following:

- Flexibility in a digital strategy can better help SMEs succeed with industrial transition.
- Strong leadership is needed to shift the mindset of industrial SMEs towards embracing industrial transition and digitalisation.
- Non-financial incentives to support industrial transition can have a positive, long-term impact on the capacity and skills of a region's labour force.

Specifically, targeting the innovation ecosystem in rural and/or disadvantaged territories early on in a pilot policy or initiative design process could help policy makers better meet inclusivity and social cohesion aims.

Link to the case study online: https://www.oecd.org/regional/governance/RIT_HIA_Hauts-de-France.pdf

Lithuania: Roadmap for Lithuania's industrial transition to a circular economy

Industrial transition in Lithuania

Since regaining its independence from the Soviet Union in 1990, the Republic of Lithuania has undergone significant economic and social changes as it has shifted from a centrally planned economy to a market-based system. This industrial transition has not been without its challenges, which include limited innovation capacity, limited access to innovation funding and finance, insufficient investment in R&D, low labour productivity, a lack of skills and low circularity and resource productivity.

One way to leverage existing research and innovation opportunities is through investing in the circular economy, which holds strong potential for more knowledge-intensive production. The circular use of materials in Lithuania has remained close to 4% since 2010. It was 4.4% in 2020 – almost 3 times lower than the EU average of 12.8%, which would justify a more ambitious approach to developing a circular economy. In addition, Lithuania's resource productivity could be considerably improved.¹ Lithuania ranks 5th lowest in the European Union, with 1.3 purchasing power standards (PPS) generated per kg of material consumed in 2020, compared to the EU average of 2.2 PPS per kg.

Lithuania's HIA

Lithuania's HIA was designed to kickstart a shift towards a circular economy in industry by providing a comprehensive analysis of the circular economy potential of different industrial sectors and developing a dedicated circular economy roadmap. The Lithuanian approach stood out for its distinct specificity, with a deliberate emphasis on the industrial domain. By concentrating efforts on this focal area, the pilot action showcased a profound commitment to tackling environmental challenges and advancing sustainable practices within the industry. This tailored approach facilitated a more targeted strategy, allowing for the identification and implementation of sector-specific measures and solutions.

The circular economy roadmap focused on five demonstration sectors established through the circularity analysis of the Lithuanian industry: i) food and agriculture; ii) construction; iii) textile; iv) furniture and wood products; and v) plastic and packaging. The roadmap outlined policy measures that could support the

transition to a circular economy. In particular, these measures included institutional improvements, the development of circular economy business models and the training and education of professionals.

Governance and management of the HIA

A number of elements led to the success of the HIA's implementation. First, the roadmap development relied on two complementary expert teams, one local and one international.

Second, the roadmap was developed based on an extensive co-creation process, with input provided from a broad range of different stakeholders in the public, private and non-governmental sectors through a roadmap co-ordination group. This helped to ensure that the professional backgrounds and interests of different groups were taken into account during the roadmap's drafting, while building a common contextual understanding among stakeholders. It also aligned top-down policy decisions with bottom-up proposals, helped to build new links between key players in the circular economy value chain and promoted a step change in the attitudes of key industries.

Third, an Industry 4.0 platform that was set up by the Ministry of Economy and Innovation provided important guidance and advice. The platform serves as an official mechanism to co-ordinate the collaborative efforts of businesses, academia and the public sector. Its primary objective is to enhance competitiveness and facilitate a seamless industrial transformation through constructive dialogue among social partners.

Fourth, monitoring and evaluation of the HIA's implementation progress was provided through a steering group. Regular HIA progress checks, in addition to any necessary corrective measures to improve implementation, were ensured through 21 steering group meetings that took place over the HIA's 15-month implementation period.

Results of the HIA and impact on Lithuania

The HIA helped to address industrial transition challenges in a number of ways. First, it improved the overall understanding of the circular economy in Lithuania on a political level. Second, it raised awareness of the fact that specific policy levers and a comprehensive roadmap are necessary for the transition to the circular economy. Third, its bottom-up co-creation approach helped to encourage stakeholder participation, ownership and raise awareness of the circular economy. Fourth, the policy recommendations and action items that were derived through the bottom-up approach and endorsed through stakeholder discussions provided a valuable foundation for the Lithuanian government to promote the circular economy in the future. Fifth, the circular economy roadmap strengthened institutional capacity for the circular economy by disseminating knowledge, supporting co-operation with industry and providing financial mechanisms that enabled industry to take advantage of circular economy opportunities. Sixth and finally, strong industry involvement in the roadmap's extensive co-creation process led to significant stakeholder learning and industry ownership of the document.

Policy experimentation and lessons from the HIA

The HIA constituted an experimental initiative in a number of ways. First, at the time the HIA was being prepared, there was little experience with a comprehensive strategy aimed at promoting the circular economy. The HIA not only developed a strategy for an entirely new policy area in Lithuania but also provided the Lithuanian government with an action plan and roadmap for how to implement the strategy. Second, the HIA's extensive co-creation process, based on systematic dialogue, was unprecedented for policy development in Lithuania and suited the experimental ambitions of the HIA.

The HIA's implementation also generated a number of valuable policy lessons, which are outlined in more detail below:

- Experimental policy approaches require high levels of political commitment and leadership to be successful.
- Policy roadmaps can be effective planning tools to advance the industrial transition in new policy areas.
- Involving stakeholders in the development of policy roadmaps can lead to more effective and sustainable policy implementation.
- Moving into new fields of policy development for industrial transition can encourage innovation.
- Bringing in international expertise can be a valuable asset in advancing industrial transition.

Link to the case study online: https://www.oecd.org/regional/governance/RIT_HIA_Lithuania.pdf

North Middle Sweden (Sweden): Energy and resource-efficient low-carbon society transition lab and seed fund

Industrial transition in North Middle Sweden

North Middle Sweden is an industrial region with a manufacturing and extractive sector that accounts for a third of regional revenues and 50 000 regional jobs. At the same time, employment in regional manufacturing has been declining in recent years and the low-carbon transition is placing pressure on policy makers to identify ways to build a regional economy that is more environmentally sustainable. The region also faces other industrial transition challenges, including having a significantly lower skills base than the Swedish national average, which risks posing a threat to regional livelihoods and well-being.

In order to address industrial transition challenges (e.g. lower-than-average education and employment levels, limited innovation activity, a need to support the low-carbon transition and improve well-being outcomes, etc.) and ensure that livelihoods can be sustained and improved over time, regions need to draw on a strong innovation capacity so that they can identify and act upon opportunities for sectoral and/or cross-sectoral transformation. However, North Middle Sweden is less innovative than the national average owing to a series of challenges in its regional innovation ecosystem, including a lack of engagement from large companies and rigidity among stakeholders. To address these issues, more effective collaboration among a wide range of actors in the public, private and civil society sectors is needed.

The North Middle Sweden Challenge Lab

The North Middle Sweden Challenge Lab was a collaborative and experimental policy initiative designed to tackle industrial transition challenges by encouraging multi-sectoral innovation and systems-wide transformation. Four workshops aimed to create a space for participants to share knowledge and support whole-of-system learning and network building that could help resolve North Middle Sweden's low-carbon transition challenge. The organisers also set up a seed fund, which financially supported collaborative projects from across Middle North Sweden that targeted advancing an industrial transition focused on a low-carbon future.

Governance and management of the challenge lab

A pivotal element in the success of the challenge lab's design and implementation was the experimental, mission-based, methodological approach that it adopted. The approach sought to create a conducive space for social collaboration between relevant stakeholders on complex future challenges by deploying several established concepts. These included various visual metaphors to encourage stakeholders to think outside the box on systemwide challenges and solutions. They also included a backcasting exercise,

staggered across the four workshops, whereby participants first identified a desired future and then worked progressively backwards towards the identification of systems-wide solutions that could bring that future to fruition.

The challenge lab's implementation depended on the effective leadership and skills of workshop organisers and facilitators, and the involvement of relevant stakeholders from governmental and non-governmental sectors alike. In particular, the challenge lab's promise of linking hydrogen-related seed funding to the ideas that were set to be discussed in workshops provided a financial incentive for companies to engage in the process.

Results of the challenge lab and impact on North Middle Sweden's industrial transition

The challenge lab has supported North Middle Sweden's industrial transition on a number of fronts. With regards to the challenge of transitioning to a low-carbon economy, challenge lab workshops helped build knowledge among regional stakeholders with regards to new ways in which hydrogen can play a greater role in the energy mix. The workshops also supported the creation of new networks or connections that can support industrial change in the hydrogen sector. However, the challenge lab's activities have not sought to tackle other industrial transition challenges facing North Middle Sweden, such as the regional skills deficit.

Policy experimentation, scalability and lessons learned from the challenge lab

The challenge lab constituted an experimental initiative in a variety of ways. By orienting the workshops around a common mission that relates to delivering a better future, organisers encouraged a discussion on innovation possibilities that transcended traditional sectoral boundaries and constraints. Moreover, the experimental, pedagogically-sequenced structure of the workshops, which began in an ideal future and ended with a discussion of how concrete actions and next steps could support its achievement, encouraged a discussion of innovation solutions that was future-oriented and also grounded in practical realities. Furthermore, the linkage of mission-oriented, cross-sectoral innovation discussions with seed funding constituted an experimental attempt to turn mission-oriented ideas into tangible solutions.

The challenge lab's implementation also generated valuable policy lessons. First, the concept can serve as an important trust-building lever for regions in industrial transition. In particular, it supports the creation of cross-sectoral innovation networks, which can help stakeholders to establish collective visions for transformation needs and pathways. Second, and relatedly, the establishment of robust cross-sectoral innovation networks depends, in turn, on engaging stakeholders with sufficient knowledge and authority to make innovation-related decisions. Third, measuring the impact of regional innovation initiatives takes time. When monitoring and evaluation activities take place sufficiently far downstream of the initiative's implementation, they are more likely to be able to capture how the cross-pollination of ideas has led to tangible innovation-related outcomes. Fourth, funding mechanisms for regional innovation need to be sequenced in a way that maximises their impact. In particular, if funding is to be made available for multiple innovation initiatives that are collectively aimed at solving a single industrial transition challenge, organisers should plan for their implementation to be sequenced so that they complement one another. Fifth and finally, dedicated and skilled staff are essential to supporting policy experimentation. These employees need to effectively navigate the design, implementation, facilitation, and monitoring and evaluation of experimental initiatives and should be fully trained prior to the launch of an initiative in order to ensure optimal outcomes.

The challenge lab concept is highly scalable and can, in principle, be applied to any industrial transition challenge. It is particularly fruitful at a regional level because it connects stakeholders from a wide range of sectors that nevertheless share relatively close geographical proximity, which helps to build trust and a common purpose. This makes it particularly relevant in the context of smart specialisation, which builds on the assets and resources available to regions through a place-based approach. At the same time,

challenge lab activities could also be successful at the national level if the industrial transition challenge that needs to be tackled has a national-level resonance.

Link to the case study online:

https://www.oecd.org/regional/governance/RIT_HIA_North_Middle_Sweden.pdf

Slovenia: Slovenian Pilot for an Industry 4.0 Transformative Mechanism

Industrial transition in Slovenia

Industry is the largest sector in Slovenia, accounting for around 23% of total employment. The country has a strong industrial base, with many SMEs operating in various sectors, such as manufacturing, engineering and technology. Despite this, building innovation capacity in industrial SMEs remains an important industrial transition challenge for Slovenia.

One reason for this is the limited availability of funding. SMEs have limited resources to self-finance R&D activities, which are essential for innovation, and find it challenging to secure other sources of funding. This lack of funding makes it difficult for SMEs to invest in new technologies and equipment or hire qualified staff to drive innovation. In addition, innovation management is also a significant challenge. Many SMEs lack the experience and expertise needed to effectively manage innovation, which can hinder their ability to successfully innovate.

Overview of the HIA

Slovenia's HIA was a first step in broadening the innovation base and building SME capacity for innovation and innovation diffusion. The expected result was a greater collaboration between industrial SMEs and service providers (especially universities) and piloting and demonstrating SME-generated innovations in Industry 4.0.

The HIA consisted of an innovation voucher system to support piloting and demonstrate innovations with high TRLs. It was a physical and virtual platform that brought together equipment, resources and expertise from a wide range of organisations specialised in Industry 4.0 development and deployment. Concretely, the HIA provided financial vouchers to five SMEs needing support to digitalise and automate production. To obtain the voucher, each SME had to partner with a research organisation to jointly develop an Industry 4.0 project under the guidance of an international expert.

Governance and management of the HIA

Effective stakeholder engagement and interaction was the key governance and management variable that underpinned the HIA's implementation. The Slovenian toolmaker association TECOS held monthly meetings with all companies to offer the chance for participants to interact with their chosen service providers and external experts, as well as to present interim findings. In addition, they organised two meetings with representatives of the European Commission. These meetings and the regular catch-up calls among companies, service providers and international experts were essential to the successful implementation of the projects.

The meetings were useful in developing a community of shared practices in matters related to Industry 4.0. They also enabled stakeholders to make new contacts and identify synergies or complementarities that would aid the SME beneficiaries over the long term. Success was not necessarily measured by product development and commercialisation but by whether there was a possibility to extend or diffuse innovative activities among enterprises and research organisations.

Results of the HIA and impact on Slovenia

The HIA has supported Slovenia's industrial transition on a number of fronts. First, it supported industrial SMEs in transforming their traditional production processes into modern production lines with the aim of improving the efficiency, productivity and carbon intensity of production. In this way, the HIA responded to the needs of industrial SMEs that had little ability to act on their own. Second, the HIA helped raise awareness of the need to focus on the green and digital transition as a driver of Slovenia's industrial transition and how the industrial sector can contribute to this effort. Third and finally, the HIA demonstrated that smart specialisation priorities should be defined based on partnerships involving the private sector, knowledge institutions, the state and other stakeholders.

The HIA's experimental nature, scalability and lessons learned

Several aspects of the HIA were new and different from traditional Slovenian approaches to supporting funding and management schemes oriented towards innovation. In particular, funding calls for innovation support in Slovenia tend to suffer from a high level of administrative burden and a lack of flexibility when projects need adjustment. The HIA sought to overcome this by implementing the HIA via TECOS, which had more flexibility to design a less burdensome funding call because, as a non-governmental body, it was not obliged to follow the Ministry of Economic Development and Technology's funding rules.

In addition, TECOS assisted the Ministry of Economic Development and Technology in designing the call and was also responsible for assisting beneficiaries in implementing and documenting their projects. This helped fill a capacity innovation knowledge gap among SME beneficiaries who would not have been able to transform their production lines on their own. It also helped reduce the red tape associated with applying for public funds, making HIA participation more accessible. Having a non-governmental body with few bureaucratic structures responsible for implementing an innovation-oriented initiative was an experimental model that had not been applied before in Slovenia.

In terms of continuity and scalability, the HIA served as a pilot to test demand for a larger project on building physical demonstration centres as collaboration platforms between industry and academia for Industry 4.0 applications. Thus, it was designed with the notion of scaling up already in mind. These centres will provide the facilities and expertise necessary to enable industrial SMEs to experiment with new tools to develop new products at a lower cost and to gain access to experts. Moreover, these centres can provide a physical platform for SMEs, research institutions and experts to interact and establish new collaborations with a view to integrating and demonstrating innovative technologies for advanced manufacturing.

The HIA's implementation also generated valuable policy lessons, including the following:

- Partnering with non-governmental or other innovation bodies to implement innovation support programmes can help work through capacity gaps and implementation challenges.
- Designing performance measurement frameworks that account for inherent differences in public versus private sector measures of success can provide more comprehensive insight into advances in industrial transition.

Link to the case study online: https://www.oecd.org/regional/governance/RIT_HIA_Slovenia.pdf

Wallonia (Belgium): Piloting a challenge-based approach for SMEs support – Plastics Go Green and Circular

Industrial transition in Wallonia

As a result of the loss of competitiveness of several traditional industry sectors (notably steel, coal and machinery mineral sectors) since the 1950s, the Wallonia region in Belgium faces three main industrial transition challenges:

1. Reduced economic output and low labour productivity, as well as high levels of unemployment, jeopardising the region's competitiveness and placing it at risk of falling behind other European regions.
2. Innovation that is constrained by a narrow and technology-centred view of innovation and an ecosystem that could be better connected, limiting opportunities and reducing the pool of potential innovators, especially among smaller firms.
3. A need to support a green and digital transition with the adoption of new technologies and practices, while balancing the creation of quality jobs and the need to reintegrate the unemployed in the regional labour market.

The region of Wallonia aimed to address these challenges by focusing on environmental sustainability in its HIA. Regional policy makers in Wallonia sought to build a shared vision for and with local actors on how to tackle the specific challenge of plastic recycling. Through the HIA, the Walloon Directorate of Economic Policy has focused on connecting, developing and supporting the regional innovation and entrepreneurship ecosystem. The HIA's key findings informed the region's S3 renewal process. The findings were used to align the S3 with societal and industrial transition challenges and helped place significant emphasis on fostering strong collaboration among innovation stakeholders.

The HIA: The Plastics Go Green and Circular challenge

Wallonia's HIA, the Plastics Go Green and Circular challenge, targeted commercialising new innovative services and products developed by start-ups and SMEs in the field of plastics circularity.

The HIA was structured around a challenge-based approach consisting of two calls for circular economy projects applied to the plastics industry. The first call focused on identifying relevant challenges. A communication campaign was organised to collect ideas from different types of stakeholders, including from the public and private sectors, civil society, etc., on plastics-related challenges that had yet to be resolved. The second call focused on project proposals addressing one or more of the identified challenges. For each of the 10 selected projects, lump sum grants of EUR 15 000 were awarded. The selected SMEs and start-ups also received advice and mentoring for implementing their projects.

Governance and management of the HIA

The success of the HIA can be attributed to a combination of factors, with particular emphasis on two elements: the governance system and the effective involvement of regional stakeholders.

Regarding the governance system, the HIA was structured around three clearly defined governance levels: i) the strategic management level led by the Walloon Directorate of Economic Policy; ii) an implementation level managed by a consultancy firm, Möbius; and iii) a steering committee to oversee the projects and facilitate stakeholder involvement. This governance structure was praised by regional stakeholders as it defined clear roles and responsibilities for all actors involved in the HIA.

In terms of its management, the HIA relied a great deal on stakeholder engagement, not only to capture the stakeholders' needs but also to support the governance of the project. A diverse group of stakeholders were part of the steering committee, which ensured a more representative outcome to the governance

processes. In addition, a stakeholder community was established to support the implementation of the HIA. The stakeholder community was instrumental in communicating with all participants in the HIA, who were able to quickly access all relevant information about the HIA.

Results of the HIA and its impact on industrial transition

The HIA addressed the challenges of industrial transition in Wallonia in the following ways:

- It contributed to enhancing Wallonia's economic competitiveness by encouraging SMEs and start-ups to innovate and adapt their operations to sustainability, specifically in the plastics sector.
- It fostered innovation and the spread of innovative practices in the field of plastics recycling in the region, promoting a collective problem-solving culture that contributed to the development of a sustainable regional ecosystem in the plastics industry. It also provided a forum for regional stakeholders to discuss the broader challenges of industrial transformation and innovation.
- It facilitated activities that promote a green and just transition by supporting companies in identifying sustainable pathways in the plastics market, recognising the potential economic benefits of plastics circularity and promoting the development of green and digital skills needed to implement such sustainable projects.

The influence of the HIA on Wallonia's S3

The HIA helped to inform the design of Wallonia's 2021-27 S3 through experimentation. Lessons learned from the HIA on the clarity of governance arrangements, programme design through a challenge-based approach and the value of stakeholder engagement throughout the project cycle were applied to Wallonia's S3 renewal process. The Walloon Directorate of Economic Policy used the HIA's inclusive stakeholder engagement methodology as a model to implement a thorough revision of the S3, focusing on linking regional innovation to societal challenges and industrial transition. The renewal of the S3 also fostered a bottom-up approach to identifying regional innovation needs. The approach has effectively strengthened the involvement of academia, industry and civil society in the entrepreneurial discovery process, fostering collaboration and a holistic understanding of the region's innovation landscape.

Link to the case study online: https://www.oecd.org/regional/governance/RIT_HIA_Wallonia.pdf

Note

¹ Resource productivity expresses how efficiently the economy uses material resources to produce wealth. Improving resource productivity can help to minimise negative impacts on the environment and reduce dependency on volatile raw material markets.

OECD Regional Development Studies

Regions in Industrial Transition 2023

NEW APPROACHES TO PERSISTENT PROBLEMS

This report builds on work presented in the OECD's 2019 report *Regions in Industrial Transition: Policies for People and Places*. It considers industrial transition as a complex and enduring challenge in regional development that traditional policy levers have not always been able to satisfactorily address. Beginning with an overview of how to characterise these regions, it then explores why they require tailored policy approaches and posits whether adopting a more experimental path in governance arrangements and policy initiatives could make inroads in meeting industrial transition objectives.

The report shares findings emanating from the experiences of eight regions and two countries that designed and implemented experimental initiatives to advance their industrial transition process and Smart Specialisation Strategies, with the support of the European Commission. It features a framework of governance and policy areas that influence industrial transition, and applicable to experimentation. Combining this with insights from each experiment studied, the report presents a toolkit of policy levers for policy makers grappling with industrial transition, and a checklist for those wishing to apply an experimental approach to industrial transition initiatives. Finally, the report contains a synopsis of the initiatives designed and implemented by the regions and countries participating in this project.



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