

D1.10 Regional Recommendations

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Executive summary

This deliverable sets out to help regional teams align their action plans with high-level missions pursued by the EU. It critically examines the concept of mission orientation before turning to the analysis of instruments that drive transition to net zero (the Green Deal), recovery from Covid-19 (Recovery and Resilience Facility), and the development of a new model of agriculture and sustainability (CAP reform, Farm2Fork, biodiversity strategy). D1.10 concludes with a set of recommendations linked to the above. Rather than being seen as prescriptive, these recommendations should be regarded as an invitation to explore highlighted issues together with stakeholders in a series of deep-dive workshops, the outcomes of which should guide holistic development of the regional action plan.

Mission oriented innovation: Despite gaining in popularity, mission oriented policies fail to substantially distinguish themselves from other governance approaches that also advocate for multi-stakeholder collaboration, the need to have a forward-looking vision and investment in science and technology with a strong societal focus. In the absence of a fixed definition and methodology, regional teams should decide what mission oriented innovation (MOI) means for them and their region. Is it just about orienting your regional policies toward high-level EU missions? Or is it about actually trialling a radically new governance approach to achieve a long-term vision for your region?

Those who feel adventurous and decide to explore the second option should be prepared to face a possible mismatch between capacities that a true mission-oriented approach might demand and the competencies available in the existing innovation system. After years of austerity, budget cuts and outsourcing of responsibilities to third parties, many governments might quickly discover that delivering a fully-fledged MOI project is easier said than done.

These words of caution are not meant to discourage foresight pilots from trialling the MOI approach. The intention is simply to alert them to the possible difficulties that may arise once they embark on this journey. After all, the MOI process can lead to a new way of organising regional development work, one in which resources, knowledge and efforts are pooled across disciplines and policy silos to collectively advance bold and inspirational societal goals. Regional teams are encouraged to explore available learning resources on the subject (e.g. the OECD's MOI toolkit) to better understand how MOI policies could be set up, implemented and evaluated.

The Green Deal and transition to net zero: Even before the Green Deal was announced it was clear that transition to net zero will be painful for industries, businesses and households. It will require new ways of travelling, insulating homes, making products, managing land, and more. There are lots of uncertainties and risks lurking on the path to carbon neutrality, but the mission also presents many opportunities for cities and regions to negotiate the kind of deal that is good for them and their people. PoliRural pilots should take ownership and shape the Green Deal in areas falling under their competencies. Some pilots have coal dependent regions e.g. Horna Nitra is the largest source of brown coal in Slovakia, the Polish Mazovian region is among the biggest consumers of electricity produced mostly from coal. So they would be well advised to develop action plans around communities that are going to be affected the most by the transition.

If exposure to fossil fuels varies from pilot to pilot, the renouave wave is going to substantially affect all regions. Now is a good time to start identifying renovation measures and stakeholder groups most likely to be affected by the change. Ultimately, regional proposals should be developed for ingestion into the national Climate Action Social Plan. National governments will submit these plans to get money from the Social Climate Fund to finance temporary direct income support to vulnerable households and to support measures and investments that reduce emissions in road transport and buildings.

For rural areas, the green transition will require the development of partnerships in all economic activities, between businesses of all sectors, local authorities, researchers and services based on innovation, knowledge sharing and cooperation. This is very much in line with the MOI approach. Going forward, pilot teams should build on the participatory foresight experience gained in PoliRural to create a vision of climate resilience and adaptation that is region-specific, that is adjusted to local challenges and climate risks, and that makes clear what social, economic, cultural and behavioural change should be pursued while taking into account existing programmes, strategies and commitments at different governance levels.

Recovery from the pandemic and Recovery and Resilience Facility: The EU has made sure that recovery from the pandemic is green and digital. Member states are required to allocate at least 37% of the money they get from the Recovery and Resilience Facility (RRF) to green transition and 20% to digital transition. How this money will be spent is already outlined in the National Recovery and Resilience Plans. Regional teams should study both plans and assessments carefully as they prepare their action plans, not least to understand where national priorities lie, what initiatives will be funded, what territories and communities will be prioritised, and how much money will be spent on different projects. Ultimately, how the money is going to be spent will be a matter of negotiation. Pilots should be proactive in putting forward ideas if they want their region and communities to get a slice of the pie. One could argue that PoliRural pilots are in a more advantageous position compared to other regions who did not have the foresight experience and therefore lack the comprehensive body of knowledge that can be readily drawn upon to make a case for investment. Moreover, PoliRural pilots have all the tools necessary to conduct additional deep dives on issues of importance to their region to make their case even stronger.¹ One issue in particular that would be interesting to explore is how the RRF money can be used to narrow the digital divide between rural and urban areas.

CAP reform and the new model of agriculture and sustainability: Few EU policies have received as much criticism as CAP has. The criticisms usually revolve around disproportionality of the CAP budget, the preferential treatment that farmers get, inequitable distribution of income support, and environmental damage. While there is some truth in these accusations, it's easy to counter them and many have been addressed to some extent in the new CAP. To address environmental concerns, and in particular biodiversity loss, the enhanced conditionality under the new CAP requires that on every farm at least 3% of arable land is dedicated to non-productive elements. At least 25% of the budget for direct payments must be allocated by member states for eco-schemes, providing stronger incentives for climate- and environment-friendly farming practices e.g. organic farming, agro-ecology,

¹ The deep-dive guide on Covid-19 is available on the PoliRural website. Three more guides will follow soon, on the Green Deal, CAP Reform, and biodiversity.

carbon farming. Further efforts to restore ecosystems and reduce pollution are elaborated in the new Farm2Fork and biodiversity strategies. The 2030 targets have been set for the reduction of pesticide use (50%) and fertiliser use (20%). The amount of land reserved for organic production should increase three-fold, to 25%.

The new post-2023 CAP provides more flexibility to member states to adapt the policy to their specific needs and priorities while respecting the overarching EU-level objectives and targets. The cascade process from EU to national to regional level promises to be anything but straightforward. It is therefore strongly recommended that each regional foresight team obtains the support of a local expert on CAP reform, not only to understand the conditions being applied at EU level, but also to follow thinking about how these will be interpreted and applied by each member state. It is essential to involve experts who can explain the logic of the reform and highlight what has changed and the opportunity that this has created for the reinvention of agriculture and the direction that this is taking in each region. Areas that require special attention are the new conditionalities (e.g. for redistribution, soil protection, biodiversity), the social dimension, the issue of fairness centered around farmers' income, and the possible negative consequences of the decarbonisation agenda, such as lower yields, reduced crop quality, and threats to farmers' livelihoods.

1 Introduction

PoliRural is approaching the end of its second year. At this stage of the project, pilot activities are concentrated in two work packages that are running in parallel: WP5: Future Rural Outlook and WP6: Regional Rural Change. In the final few months that are left in WP5, pilots need to produce an action plan where they set out measures for i) addressing policy challenges affecting their region and ii) achieving a vision of the region at some distant point in the future e.g. 2025, 2030, 2040. As well as considering local and regional priorities, the twelve PoliRural pilots should demonstrate how their action plans contribute to high-level EU missions like climate neutrality, the new model of agriculture, and healthy soil and food.

Whether and how these missions are addressed will be established by means of ex-ante evaluation to be conducted in WP6. It is this WP5-WP6 interface, which requires action plans to be crafted with EU missions in mind, that provides the rationale for this deliverable. D1.10 is presented in the form of a briefing paper that critically examines some policy instruments used to achieve selected EU missions, as well as the very concept of mission oriented innovation. The results of the critical analysis inform the paper's recommendations. Rather than being seen as prescriptive, these recommendations should be regarded as an invitation to explore highlighted issues together with stakeholders in a series of deep-dive workshops, the outcomes of which should guide holistic development of the regional action plan.

When talking about EU missions, it's important to distinguish between Horizon missions and high-level policy missions attached to legislative frameworks like the Green Deal. The two types are clearly related. They reinforce each other to drive an era of just, smart and sustainable growth. Horizon missions cover five areas: cancer, climate, oceans, urban transformation, and biodiversity.² We're going to briefly review each of them in turn to see which ones are relevant for PoliRural, before turning to policy missions.

1) Conquering Cancer - Mission Possible: The main goal here is to ensure equitable access to and improve our knowledge, diagnosis and treatment of cancer across Europe, while supporting those exposed to the disease. By 2030, the mission should help at least 3 million people live longer and better through improved prevention and cure.

2) A Climate Resilient Europe: The overall ambition is to prepare Europe for climate disruptions and accelerate transformation to a prosperous and climate-resilient future. There is a 2030 target of 100 "deep demonstrations" showcasing climate resilience in European regions and communities. Deep demonstrations are defined as "on-the-ground examples of thoroughgoing societal transformations accomplished on a larger scale, with verifiable impacts, and based upon citizen engagement."

3) Restoring Oceans and Waters - Mission Starfish: This mission sets out to clean our oceans, seas, rivers, lakes, ponds, wetlands, streams and other water bodies. The plan is to restore degraded ecosystems and habitats, and to decarbonise the blue economy to enable sustainable exploitation of goods and services it provides. Target-wise, the mission will protect and restore 30% of the EU's sea

² https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe_en

area and 25,000 km of free flowing rivers. Plastic litter, nutrient loss and pesticide use will be reduced by 50%, while the blue economy will become climate-neutral and circular with net-zero maritime emissions.

4) Climate Neutral Cities: This mission appears to be closely linked to 2) both in terms of theme and target. But it has a special focus on cities for demographic and environmental reasons. Cities are growing fast. By 2050, almost 85% of Europeans will be living in cities. Also, despite covering 3% of the Earth's surface, cities produce around 72% of all greenhouse gas (GHG) emissions.³ This mission aims to achieve 100 climate neutral cities by 2030, but it's not clear if this target also counts towards deep demonstrations.

5) A Soil Deal for Europe (formerly Caring for Soil is Caring for Life) : Hiding beneath this poetic title is a straightforward mission to improve soil quality which is essential for crops, human health and quality of life, other animal species, and carbon sequestration. The EU wants at least 75% of all soils on the continent to be healthy for food, people, nature and climate. The mission will set up 100 living labs and lighthouses (antennas for dissemination) to lead the transition towards healthy soils by 2030.

There is a clear bidirectional link between Horizon missions and policy missions pursued by the EU, with the former usually playing a supporting transversal role. For example, the Climate Resilient Europe is described as being fully "committed to supporting the overarching goals of the European Green Deal."⁴ This Horizon mission will contribute, among other things, to the 'renovation wave' to improve energy efficiency of public buildings and social housing, and will help meet commitments under the Farm2Fork strategy, ensuring that the entire food chain from production to consumption has a neutral or positive environmental impact.

A Soil Deal for Europe will also be key to implementing the Green Deal and meeting its ambitions to increase the EU's climate performance, achieve zero pollution, preserve and restore biodiversity, safeguard forests, and promote an environmentally friendly food system. Both the Farm2Fork and biodiversity strategies refer to the mission's potential to develop solutions for restoring soil health and functions. Moreover, a Soil Deal for Europe will be an essential element of the EU's recovery from the pandemic, largely through its potential to contribute to major initiatives for soil decontamination, waste recycling and carbon farming, to name just a few.⁵

While all five Horizon missions are important for Europe, not all are relevant for PoliRural. Cancer and oceans are clearly out of scope. Climate-neutral cities are more relevant, not least due to urban-rural links, but still outside the scope of the project.

Although Horizon missions and high-level policy missions are closely related, it is trite but true that PoliRural action plans should be aligned with the latter. To give a simple example, with regards to climate neutrality the goal should be achieving a 55% reduction in emissions by 2030, as required by the Green Deal, not aiming for a fixed amount of deep demonstrations, living labs or lighthouses. These

³ <https://op.europa.eu/en/publication-detail/-/publication/bc7e46c2-fed6-11ea-b44f-01aa75ed71a1>

⁴ <https://op.europa.eu/en/publication-detail/-/publication/2bac8dae-fc85-11ea-b44f-01aa75ed71a1>

⁵ <https://op.europa.eu/en/publication-detail/-/publication/4ebd2586-fc85-11ea-b44f-01aa75ed71a1>

outputs provide a means to achieve the required transformations. Pilots might want to consider them as a platform for co-creating lasting solutions for their regions, but they should not be an end goal in and of themselves.

Now that these obvious differences have been clarified, it's time to present the curated list of policy missions of relevance to PoliRural. These have already been communicated previously in various official and internal project deliverables e.g., D1.11 Regional Action Plan Template, the ex-ante evaluation methodology prepared for T6.1. The inclusion of 'adaptation to climate change' and 'healthy soil and food' in our curated list means that there is an overlap with some Horizon missions (notably 2 and 5). A major difference is the addition of a new mission - recovery from the pandemic - which isn't on the original Horizon list, but which absolutely merits a place there because of its global (global plus local) impact and influence on all other missions. Our finalist therefore includes three thematically distinct but interrelated missions:

- Adaptation to climate change and transition to next-zero by 2050
- Recovery from the pandemic and improving resilience to future shocks
- Implementing a new model of agriculture and a nature based model of sustainability based on biodiversity

Ultimately, what will be critically examined in the next few chapters are not high-level missions per se but rather policy instruments used to achieve them

- **Transition to net zero:** the Green Deal
- **Recovery and resilience form the pandemic:** the Next Generation EU, the Recovery and Resilience Facility (RRF)
- **Post-carbon agriculture and biodiversity:** the CAP reform, Farm2Fork and biodiversity strategy

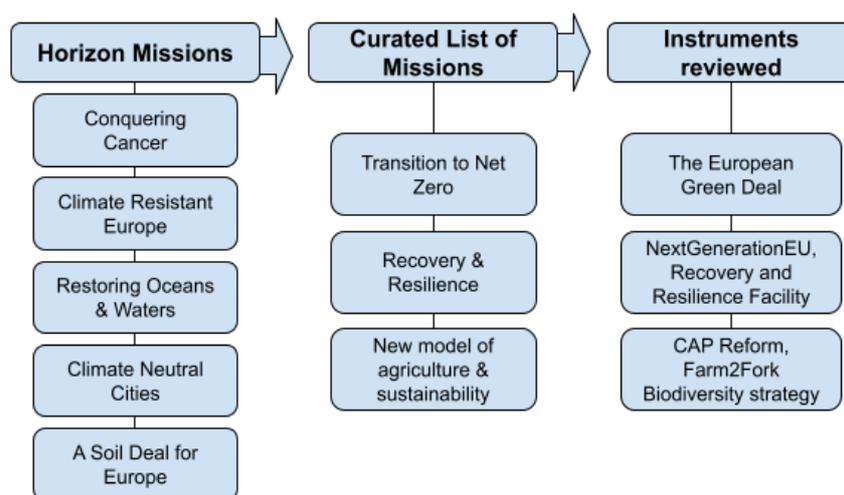


Figure 1. Missions and instruments reviewed in D1.10

The deliverable is organised as follows. First, we review the mission oriented innovation (MOI), focusing on its origins and unique characteristics. The goal is to understand the concept's broad appeal to governance bodies like the EU. After comparing a few case studies, we examine MOIs usefulness as a guiding principle for policy implementation at regional level. Next, we zoom in different instruments

the EU is using to achieve some of its missions. We'll start with the Green Deal, then move on to the Next Generation EU and RRF, before finally tackling CAP reform, Farm2Fork and biodiversity strategy. In conclusion, we'll highlight issues that pilots should consider (i.e., explore in a series of deep dives) in aligning their action plans with high-level EU policy missions.

2 Mission oriented innovation

Mission oriented innovation has attracted a lot of international attention. Around the world, governments and national innovation agencies are framing their policy responses around high-level missions in a bid to tackle ongoing societal challenges. A 2018 study⁶ by JIIP, which mapped almost 200 initiatives globally, found that although many MOIs are context specific (e.g., population ageing in Japan, flood risks in the Netherlands), mission themes tend to overlap between countries, with many MOI initiatives typically addressing more than one topic. A case in point is Germany's High-Tech Strategy (HTS) 2025.⁷ The name might suggest that it's mostly about technology, however the strategy is all-encompassing in its focus, covering missions related to health, good living and working conditions, mobility and open innovation culture.

2.1 MOI appeal

As governments from Germany to Japan embrace missions to guide their innovation policies, it's worth investigating what makes MOIs so appealing. Two main reasons stand out. First, present-day missions draw their inspiration from the famous Apollo project, hence the oft-cited reference to missions as moonshots. The assumption is that when public policies leverage cutting edge research, lofty ambitions, such as sending a man to the moon, can become a reality. This has led to a thinking in policy circles that by promoting radical technological development (big science), decision makers can address societal challenges high on the political agenda (big problems). In the case of HTS 2025, these technological breakthroughs will come from investment in AI, quantum computing, and micro electronics.

Second, missions promise to provide a means for strong multi-actor collaboration, uniting different actors around a common cause. This is especially the case with societal missions because they are usually less clearly defined than purely technological MOIs and as such must be co-interpreted, co-designed, co-implemented and finally co-evaluated by a diverse group of stakeholders. This sets present-day societal MOIs apart from their predecessors (oriented more towards defence, nuclear, aerospace), which were often implemented in national laboratories. For example, the Manhattan project, whose mission was to design and build the first atomic bomb, was managed by the secret Los Alamos Laboratory in a remote location near the border with Mexico.

⁶ <https://op.europa.eu/en/publication-detail/-/publication/3b46ce3f-5338-11e8-be1d-01aa75ed71a1/language-en>

⁷ https://www.hightech-strategie.de/hightech/de/home/home_node.html

2.2 Mission funding

From the invention of the internet to advances in biotechnology (e.g. CRISPR), major technological breakthroughs were often made possible because of direct public funding. Basically, it was the government willing to take the risk before the private sector followed suit. A deliberate public-sector investment not just in basic research but in risky ventures can be a key stimulus to innovation-led, economy-wide growth.⁸ This is what Mariana Mazzucato, a leading international expert on MOI, calls an entrepreneurial state.⁹ According to her, an enterprising public sector has often been far more venturesome than risk-averse private-sector companies that, in general, try to avoid anything that might diminish their quarterly earnings.

While governments can and should finance failure-prone innovations, a truly synergetic innovation ecosystem is one where risks and rewards are fairly shared. It's important to avoid a situation in which the government funds all the risks all the time while the private sector is only there to reap the rewards.¹⁰ This line of thinking appears to be reflected in the European Green Deal that aims to mobilise at least €1 trillion over the next decade, of which at least a third is expected to come from private investment. The need for private investment and financing in greening Europe opens up vast opportunities. The issuance of green bonds in particular can help de-risk the EU economy by decoupling growth from resource consumption.

According to the Climate Bond Initiative,¹¹ as of 2018, 145 entities in Europe have issued green bonds. These include private companies and financial institutions, as well as governments at different levels. Government entities can issue green bonds as a means to finance specific local projects or meet selected environmental targets. For municipalities and regional authorities, green bonds are a sure way to engage local stakeholders into financing sustainable solutions, while for national governments, sovereign green bonds aid in carrying out sustainable policy agendas and stimulate the flow of private capital investments.¹²

By their very nature, missions typically bring together a wide range of R&I activities, from feasibility studies to research projects to early stage demonstrations to actual market deployment. Each of these activities requires a different type of financial support. It is important to have a wide range of funding instruments available to suit different MOI needs and risk levels. For some MOIs, grants may be a more appropriate option (visionary, early stage projects), for others it might be equity investments (scale-ups) or debt instruments (large-scale, capital-intensive green infrastructure projects). PoliRural has compiled a list of more than 40 financing options for public authorities to consult in designing their action plans.

The size of MOIs' budget is directly related to the timescale, intervention level and scope of the initiative. For example, Denmark has set aside just over €90 million to establish Green Research and

⁸ In the UK, for instance, the government has invested hundreds of millions into tech start-ups. Some critics worry though that this represents risky use of public money.

⁹ <https://marianamazzucato.com/projects/the-entrepreneurial-state/>

¹⁰ <https://blogs.worldbank.org/psd/mission-oriented-strategies-invest-innovation-competitiveness-enterprising-public-sector>

¹¹ <https://www.climatebonds.net>

¹² <https://www2.deloitte.com/lt/en/pages/legal/articles/Green-Bonds-Issuance-and-Support-Offering.html>

Innovation Partnership to meet specific environmental missions and targets by 2030 and 2050.¹³ France earmarked €300 million for its Innovation 2030 Contest which focuses on circular economy and re-industrialisation.¹⁴ Sweden spends around €786 million to support 17 currently running strategic innovation programmes (SIPs).¹⁵ SIPs are made up of universities, companies, civil society organisations and government agencies, and they are established with a dual purpose of improving international competitiveness of Sweden's economy and finding sustainable solutions to global challenges.

2.3 Implementation

So how does one go about implementing a MOI project? On this crucial question, literature seems to provide only vague advice. A lot of emphasis appears to be placed on MOI characteristics and general design principles. For example, Mariana Mazzucato suggests several criteria for selecting missions.¹⁶ She argues that missions should be bold, inspirational and with wide societal relevance. They should be clearly targeted, measurable and time-bound. Missions should be ambitious but realistic. Missions should be cross-disciplinary, cross-sectoral and multi-actor. Finally, missions should be embodied by multiple bottom-up solutions.

The OECD recommends three design principles for MOI policies.¹⁷ The first is strategic orientation. Here, societal challenges are deliberated and selected. If a mission is to command legitimacy, a wide group of stakeholders should agree on mission's need and relevance. Strategic orientation often, but not always, occurs at the highest level of a national policy system. After some time, however, the process becomes diffuse, allowing multiple actors, including experts and citizens, to intervene. Ultimately, the policy should be guided by a clear, well-informed orientation and supported by specific goals with a clear timeline, targets and milestones. A degree of flexibility is advised when selecting targets and a means of intervention at this early stage. Stakeholders should be able to revise them in the future as and when necessary.

The second principle is policy coordination. The main focus here is on coordination of activities between public bodies from different policy fields and levels of government. Coordination is needed to reduce or mitigate possible adverse consequences of interventions designed and implemented between different policy actors. However, coordination should also extend to other stakeholders because it's important to pool financial resources, share risks and bring together information and expertise needed to come up with an effective approach to addressing common problems.

The third principle is policy implementation. The overall aim here is to ensure consistency and effectiveness of interventions from public and private partners to achieve policy objectives. One important dimension of implementation is policy mix. If missions are to be achieved, MOI policies

¹³ <https://innovationsfonden.dk/en/programmes/green-missions>

¹⁴ <https://jiip.eu/mop/wp/wp-content/uploads/2021/01/Innovation-2030-Commission-and-Contest-France.pdf>

¹⁵ <https://stip.oecd.org/stip/moip/case-studies/11>

¹⁶ Mazzucato, M. (2018) 'Mission-oriented Research and Innovation in the European Union: A Problem-solving Approach to Fuel Innovation-led Growth.' Brussels: Directorate-General for Research and Innovation, European Commission

¹⁷ <https://stip.oecd.org/stip/moip>

should encompass a diverse set of interventions (e.g. technical, financial, regulatory) to support different disciplines, sectors and markets across the innovation cycle. Another important dimension is funding. Both public and private stakeholders should be mobilised to commit resources needed to achieve the mission. Finally, evaluation procedures along with input, output and outcome indicators should be integrated into the process from the outset to allow those involved to assess implementation results, learn from them and make the necessary adjustments in a cycle of continuous improvement.

2.4 MOI critique

Readers who are familiar with policy making strategies through work or research might wonder how the described approach differs from similar approaches that have been advocated for and practiced over a number of years. Back in the 1980s, Henry Ergas introduced the concept of a diffusion-oriented policy design.¹⁸ Its main idea is that policy efforts should support the economy's capacity to innovate by focusing on the scientific infrastructure, technology transfer and formal and informal relationships between different actors (cooperation). The concept of collaborative governance is not new either. The idea that governments should involve the private sector and citizens in managing and planning countries, regions and cities has been a recurring theme in academic and policy literature, with early case studies dating back to the 1970s.¹⁹

It seems that MOI's novelty is reduced to only a few "distinguishing" features, such as MOI policies should i) target problems, not sectors;²⁰ ii) focus on societal relevance and foster the culture of experimentation; and iii) encourage governments to create and shape markets instead of simply responding to market failures.

While these recommendations are fine as high-level guiding principles, they offer little operational guidance for initiating and managing missions, particularly in the early stages. This can lead to a flawed mission design which can impact subsequent implementation and assessment. Indeed, in its review of two dozen MOI policy initiatives, the OECD found several examples where social and economic objectives were mixed, generating a mismatch in terms of geographic scope and the policy intervention needed to achieve different outcomes.²¹

So far, the discourse on MOIs has been dominated by academic and theoretical research. Although governments are the main adopters of MOI approaches, MOI proponents are by and large academics who rarely confront the difficulties of implementing MOI policies on the ground. Sending a man to the moon was a fairly narrow, well-defined mission. In contrast, today's societal challenges are multifaceted. Their overlapping nature means that solutions to 'wicked problems' are not fully clear from the start. Moreover, a mission that proved successful in one place is not guaranteed to be effective elsewhere. So, missions with the same goal and amount of resources are likely to unfold differently in several places due to pre-existing conditions, unique governance structure, context-

¹⁸ https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1428246

¹⁹ An example would be India's Integrated Child Development Services Scheme launched in 1975

²⁰ <https://link.springer.com/article/10.1007/s10842-019-00329-w>

²¹ <https://doi.org/10.1787/3f6c76a4-en>

specific constraints and enablers. All these nuances have a bearing on the MOI design. However, apart from some general guidance, literature on the subject offers scant advice on which mission approaches are appropriate for different contexts to maximise their envisaged impacts.

To conclude, missions might be popular with governments around the world, but all this hype is not convincingly accompanied by new substantive policy implementation and governance actions. It seems the discourse on missions is mostly about emphasising the need to have bold and ambitious policy goals. There is little critical and empirical insight into whether and how these missions may contribute to transformations, while the limited empirical basis on mission implementation means that many claims made about the impact of societal missions are still thin. In such an environment, policy makers in charge of implementing missions might be tempted to simply continue with old path dependencies, putting a new label on traditional approaches to fit the trend, so to speak.

Furthermore, it might also be overly optimistic to assume that missions can easily tap into innovation because existing systems may not be ready to take on new challenges. If the structural foundation for missions is missing, their subsequent implementation would require significant changes within policy bodies. This can result in tension between the capacities missions demand and the actual competencies that governments have after many years of outsourcing responsibilities to private contractors as a result of austerity or neoliberal thinking.

3 Transition to net zero

The EU is the world's third largest polluter after China and the US.²² The Green Deal, introduced by the Commission in December 2019, is designed to help the EU become the first climate-neutral continent by 2050. Climate neutrality, or net zero, means that the amount of GHG produced does not exceed the amount taken away through technical and/or biological processes e.g. carbon capture, storage, sequestration.

An intermediary milestone of 55% cut in emissions (compared with the 1990 levels) is expected by 2030. From retrofitting old buildings and scaling up infrastructure for electric vehicles to cutting methane emissions and implementing carbon capture, reaching both targets will require a major effort across a range of areas. The Commission has identified some 50 key actions in its roadmap for the Green Deal ("50 actions for 2050").²³

It goes without saying that green transition will require a massive investment over the next decade. The estimated price tag for the Green Deal is around €1 trillion. While this may sound a lot, some think-tanks²⁴ believe this sum represents only a third of what realistically will be needed to make the Green Deal happen.

Europeans broadly support the EU's bold climate plan. According to the recent Eurobarometer findings,²⁵ 93% of those surveyed consider climate change to be a serious problem. Also, 90% agree

²² <https://climatetrade.com/which-countries-are-the-worlds-biggest-carbon-polluters/>

²³ https://ec.europa.eu/info/sites/default/files/european-green-deal-communication-annex-roadmap_en.pdf

²⁴ <https://www.bruegel.org/2020/01/paying-for-the-european-green-deal/>

²⁵ <https://europa.eu/eurobarometer/surveys/detail/2273>

that GHG emissions should be reduced to a minimum and all the remaining emissions should be offset to reach net zero by 2050.

3.1 Internal rifts

Politically, however, implementing the Green Deal is going to be anything but smooth sailing. For one, the issue of nuclear energy remains unresolved. France is pushing for the inclusion of nuclear power on the green list, an idea that countries like Austria, Germany, Czech Republic and Slovakia find abhorrent.²⁶ For another, enforcing green leadership is going to be easier in Western Europe than in coal-dependent Eastern territories. A case in point is Poland. It is among the most coal-dependent EU member states, with coal accounting for nearly 70% of the country's energy mix. Although Poland has promised to shut down its last mine by 2049 to meet EU's emissions targets, the transition will happen "at its own pace" according to the country's president. This has infuriated the neighbouring Czech Republic, which complained to the European Court of Justice (ECJ) about the Polish coal mine in Turow, arguing that it negatively impacted nearby Czech villages, in particular the groundwater supplies. What followed was a tit-for-tat spat that has no signs of abating. Poland ignored ECJ's order to close the mine and in September 2021 was slapped with a whopping fine of €500,000 for each day of noncompliance.²⁷ At the time of writing this deliverable, some 2000 Polish miners descended on Luxembourg to protest ECJ's decision.²⁸ The Polish government, for its part, retaliated by ordering an investigation into the environmental impact of a Czech-owned coal mine in Germany just over the border from Poland.²⁹

3.2 The social dimension

What's clear is that decarbonisation policy has a huge social hurdle to climb. The envisaged transformation will significantly restructure the EU's labour market. Even if the net result on employment will be neutral or even slightly positive, some jobs will be created, some transformed, and some will disappear for good. This reshuffling will have major social and economic repercussions that will not be felt evenly by different sectors, regions, and skill levels in the workforce. In this respect, miners' resentment is easy to understand. Coal mining has a long tradition in Poland. The industry has fuelled economic development for over a century, providing jobs and subsistence to millions of families.³⁰ Green transition means that coal mines will ultimately be closed down, putting many livelihoods at risk.

To cushion the impact of its climate ambitions on people, industries and regions, the EU has established the Just Transition Mechanism. It includes three pillars: the Just Transition Fund (JTF), the InvestEU scheme, and the Public Sector Loan Facility.³¹ The JTF will be the main tool for supporting

²⁶ <https://www.thenationalnews.com/world/europe/2021/10/16/energy-crisis-frances-push-for-nuclear-power-divides-europe/>

²⁷ <https://www.politico.eu/article/court-orders-warsaw-to-close-turow-mine-or-pay-daily-e500000-fine/>

²⁸ <https://www.youtube.com/watch?v=PsaSBHnyvQY>

²⁹ <https://notesfrompoland.com/2021/10/19/poland-orders-environmental-investigation-into-czech-owned-coal-mine-in-germany/>

³⁰ <https://time.com/collection/great-reset/5900740/europe-green-new-deal-poland/>

³¹ https://cinea.ec.europa.eu/just-transition-mechanism_en

communities most affected by the transition, as its investments will target, among other things, programmes aimed at skills training, job-search assistance, and active inclusion of the unemployed.

JTF's original budget of €7.5 billion had been deemed too small by the European Parliament in light of the magnitude of the potential disruption. According to some estimates, the gross number of jobs at risk because of the transition in the energy sector alone could reach 1.6 million by 2027.³² JTF's budget has since been increased to €17.5 billion, but some lawmakers think it is still insufficient to adequately support regions in need.³³

It's not just regions and industries dependent on fossil fuels that will be affected. The only sector that absorbed more GHG emissions than it generated was land use and forestry.³⁴ Many sectors still have a long way to go before they are carbon neutral. Those with the highest number of emissions (in million metric tons of CO₂-equivalent) in the EU-27 are:

- Energy supply: 967 MtCO₂e
- Domestic transport: 835 MtCO₂e
- Industry: 775 MtCO₂e
- Agriculture: 463 MtCO₂e
- Residential and commercial: 447 MtCO₂e
- International shipping: 139 MtCO₂e
- International aviation: 133 MtCO₂e
- Waste: 116 MtCO₂e

Reaching the Green Deal targets will entail drastic changes for businesses and households. It will require new ways of travelling, insulating homes, making products, managing land, and more. One way to force emission reduction is to make it more expensive to pollute. In the EU, the main vehicle for putting a price on pollution is the Emissions Trading System (ETS).³⁵ It sets prices for emission permits needed by thousands of power plants, industrial installations, airlines and other major industry players. European ETS is the world's first and largest marketplace for trading emission allowances. The way it works is as follows. ETS sets a cap on the total amount of gases companies can emit each year. Allowances are the currency of the carbon market, and a fixed number of them is issued each year. Companies need enough allowances to cover their emissions or face fines. Those that run out of allowances either need to cut their emissions or buy more credits from another emitter. A surplus of allowances can be kept and used next year. Alternatively, the holder might choose to sell them to someone else. Over time, the cap is reduced and fewer allowances are issued. This forces companies to innovate and develop new technologies for cutting emissions. The end result is the reduction of emissions across the board.

Gradual ETS adjustments have increased the price of carbon, which reached €52 per tonne in September 2021.³⁶ Gas turbines and power plants now have to pay more for every kWh of electricity

³² [https://www.europarl.europa.eu/RegData/etudes/STUD/2020/651444/IPOL_STU\(2020\)651444_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/651444/IPOL_STU(2020)651444_EN.pdf)

³³ <https://www.euractiv.com/section/energy-environment/news/eu-lawmakers-give-final-approval-to-blocs-green-transition-fund/>

³⁴ <https://www.statista.com/statistics/1171183/ghg-emissions-sector-european-union-eu/>

³⁵ https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets_en

³⁶ <https://www.ceps.eu/ceps-publications/a-tale-of-two-prices/>

they produce, with consumers feeling the pinch. On balance though, the current energy crisis is fuelled by many factors, of which ETS is only a minor one. The Commission estimates that ETS' contribution to rising energy costs is about 20%. The global economic recovery, Russia's refusal to supply more gas, and a strong energy demand in Asia are the main culprits.³⁷ Nevertheless, populist governments particularly in Eurosceptic countries might exploit the situation to their advantage, pinning all blame on Brussels for rising energy costs.

Currently, the ETS applies to energy utilities, industrial emitters and intra-EU aviation, which collectively cover 41% of GHGs. To increase coverage, the new legislative package 'Fit for 55' (the number refers to the 55% reduction in CO₂ needed by 2030) envisages an extension of emissions trading to shipping, buildings and road transport.³⁸ The package will be subject to intense and complicated negotiations in the EU's policy circles well into 2020, but already critics are voicing their concerns that new proposals will disadvantage those on low incomes the most. Groups like Eurima are saying that including the building sector in the EU ETS is unlikely to make buildings more energy-efficient. Even worse, the introduction of a carbon price for the heating and cooling of buildings could lead to higher energy bills for tenants or homeowners who are not able to, or cannot afford to, renovate their homes.³⁹ One early estimate expects household energy bills to go up by an average of €429 per year⁴⁰ – an unaffordable price for many.

To soften the blow, the Social Climate Fund (SCF)⁴¹ is introduced as part of Fit for 55. The Fund should provide funding to member states to support measures and investments in increased energy efficiency of buildings, decarbonisation of heating and cooling of buildings, including the integration of energy from renewable sources, and granting improved access to zero- and low-emission mobility and transport. These measures and investments are meant to principally benefit vulnerable households, micro SMEs and transport users.

SCF will be financed through revenues from the new carbon market created for buildings and transport. Specifically, 20% of the expected revenues will be used to support vulnerable and low-income households. EU countries would need to draw up Climate Action Social Plans showing how they would spend the cash on measures such as renovating buildings and installing zero-carbon heating systems to lower home heating bills, or expanding use of low-emission transport. Crucially, member states would need to finance at least half of the expected cost of their plans themselves, and should use revenues they get from the new carbon market to do this.⁴²

³⁷ <https://www.euronews.com/2021/09/23/why-europe-s-energy-prices-are-soaring-and-could-get-much-worse>

³⁸ <https://www.sharesmagazine.co.uk/news/shares/fit-for-55-legislation-going-harder-deeper-faster-with-the-eu-ets>

³⁹ https://www.eurima.org/uploads/ModuleXtender/Publications/180/Eurima_including_buildings_in_the_EU_ETS.pdf

⁴⁰ <https://paris-reinforce.eu/news-events/project-news-events/cost-households-inclusion-transport-and-residential-buildings-eu>

⁴¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0568>

⁴² <https://www.reuters.com/business/sustainable-business/eu-plans-new-social-fund-shield-citizens-carbon-costs-draft-2021-07-12/>

3.3 The international dimension

Among the many instruments included in the Fit for 55 package is a new Carbon Border Adjustment Mechanism (CBAM).⁴³ CBAM will require EU importers to report emissions in certain carbon-intensive products (e.g. aluminum, cement, iron, steel, electricity, fertiliser) and buy certificates whose price will be based on the weekly average auction price of ETS allowances. So, CBAM will try and level the playing field between EU and non-EU businesses. Essentially, what CBAM tries to tackle is the so-called carbon leakage problem. Carbon leakage happens when companies based in the EU could move carbon-intensive production abroad to take advantage of lax standards, or EU products in the domestic market get replaced by more carbon-intensive imports. Some even argue that the EU is able to take credit for green achievements at home (EU-27 carbon emissions fell by more than 20% between 1990 and 2017)⁴⁴ by outsourcing environmental damage to other countries.⁴⁵

For domestic actors, CBAM will lead to an increased compliance burden, not to mention the associated administrative costs. These importers should ensure that they are aware of the potential new requirements and have in place adequate systems, controls and procedures to report the embedded emissions in goods caught under the system.

The impact of CBAM on third countries is harder to assess. Some studies suggest that CBAM will not lead to a substantial reduction in exports.⁴⁶ Some argue that CBAM can even help shift resources to cleaner sectors in developing countries.⁴⁷ What's important is that by applying the strict logic of CBAM, the EU does not jeopardise its relationship with international partners. Africa has an abundant potential for producing cheap green hydrogen through solar and wind energy, and the development of an African hydrogen economy was declared as a primary aim of the EU's Africa strategy announced in 2020. The EU has itself acknowledged, domestic production won't be enough to satisfy the expected hydrogen demand.

To conclude, figuring out how transition to net zero must happen should be a bottom-up process. In keeping with the spirit of MOI, plans for navigating away from fossil fuels should be developed with the support and guidance of those most likely to be affected by the change i.e. energy-sector workers, transport users, low-income families, companies working with carbon-intensive imports. The foresight framework promoted by PoliRural enables regions to build their own vision of climate resilience and adaptation, one that is adjusted to local and context-specific challenges and climate risks, and that makes clear what social, economic, cultural and behavioural change should be pursued while taking into account existing programmes, strategies and commitments at the regional, national and European level.

This kind of mobilisation is already happening in some coal-dependent regions e.g. Wielkopolska (Greater Poland).⁴⁸ The regional authority there has a difficult task of restructuring the economy to

⁴³ https://ec.europa.eu/taxation_customs/green-taxation-0/carbon-border-adjustment-mechanism_en

⁴⁴ <https://www.theguardian.com/world/2020/mar/09/what-is-the-european-green-deal-and-will-it-really-cost-1tn>

⁴⁵ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Extra-EU_trade_in_agricultural_goods

⁴⁶ https://unctad.org/system/files/official-document/osginf2021d2_en.pdf

⁴⁷ <https://www.brookings.edu/blog/future-development/2021/10/05/carbon-border-taxes-what-are-their-implications-for-developing-countries/>

⁴⁸ <https://regionsbeyondcoal.eu/a-just-transition-is-already-happening-in-eastern-wielkopolska/>

support green transition which, estimates show, can threaten several thousand jobs. To develop effective solutions for the safe future of the region and its inhabitants, the authority regularly organises meetings with labour unions, local authorities and NGOs. Discussions center on key topics relevant to green transition (energy, economy, social affairs, social fabric) to define the region's new, post-carbon identity. Crucially, as regions outline their social and economic innovation priorities and actions, they help national governments develop their plans (e.g. Climate Action Social Plan) to meet Green Deal objectives.

4 Recovery and resilience

John F. Kennedy once famously said "In a crisis, be aware of the danger, but also recognise the opportunity." Covid-19 has disrupted the lives of most people around the world. As we slowly but steadily emerge from the pandemic, it's worth asking how the recovery can be used to reset the economy on a more climate-friendly path.

Not everyone will agree that the environment should be among top priorities of the recovery strategy. Saving lives, fixing the labour market, increasing the vaccination rate, strengthening the health system, getting the economy back on track all are important objectives that will continue to dominate political agendas for the foreseeable future. And they should. However, it's equally important to ensure that climate action and environmental policies are not regarded as 'nice-to-have, but non-critical' elements of recovery strategies. For one, green stimulus policies have certain advantages compared to traditional fiscal stimulus packages. Targeted investments in projects such as improving the energy efficiency of the built environment can provide the twin benefits of sustaining jobs and economic activity while contributing to the decarbonisation agenda.⁴⁹

That recovery from Covid-19 should be reconciled with sustainable development targets is reflected in NextGenerationEU, the block's recovery overarching package.⁵⁰ One of the objectives is to help Europe emerge greener from the pandemic. These are not just words. In their National Recovery and Resilience Plans (NRRPs), member states have to allocate 37% of the funds to green transition. Because of this requirement, national plans have a huge potential to help the continent achieve its decarbonisation goals. Thus the EU's post-covid recovery is not only about the pandemic, it is also about the ongoing climate crisis. It's a nudge to transform the entire system with a view to building resilience against future health, economic and environmental crises that undoubtedly will happen again.

Because Covid-19 recovery also has to be digital, member states need to allocate at least 20% of the funds they get under the Recovery and Resilience Facility (RRF) to digital transition. Those plans that were already assessed by the Commission meet both green and digital targets.⁵¹

⁴⁹ <https://www.ceps.eu/ceps-publications/framing-the-circular-economy-as-an-eu-recovery-opportunity/>

⁵⁰ https://europa.eu/next-generation-eu/index_en

⁵¹ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en

4.1 National Recovery and Resilience Plans

EU countries should have officially submitted their recovery and resilience plans by 30 April 2021. However, this deadline is flexible and the Commission has argued that this is an orientation date, not a deadline, countries can submit their plans up to mid-2022.

The amount of money that EU countries get varies significantly, from just under €1 billion for Ireland to a massive €191 billion for Italy. Some plans will be financed through grants, some through a mixture of grants and loans. In relative terms, countries with highest allocations for green transition include Luxembourg (61%), Denmark (59%) and Austria (58.7%). Among the highest spenders on digital transition are Germany (52%), Ireland (32%) and Finland (27%). The plans of Poland, Bulgaria and Hungary are still being assessed. The table below shows, for a selection of PoliRural pilot countries, the total amount to be financed through RRF, and how much of the total plan is allocated for reforms and investments to support climate and digital objectives.

Table 1. A breakdown of RRF funding for selected EU countries. Source: author's own compilation

Country	Total	Green target (min. 37%)	Digital target (min. 20%)
Belgium	€5.9 billion	50%	27%
Czechia	€7 billion	41.6%	22.1%
Finland	€2.1 billion	50%	27%
Greece	€30.5 billion	37.5%	23.3%
Ireland	€0.989 billion	42%	32%
Italy	€191.5 billion	37%	25%
Latvia	€1.8 billion	38%	21%
Slovakia	€6.3 billion	43%	21%
Spain	€69.5 billion	40%	28%

A closer examination reveals that many projects falling under the NRRP are somewhat vague, so their potential negative impact is difficult to estimate. For example, the draft Polish NRRP⁵² foresees €3.2 billion to increase energy efficiency which may be used for investments in gas boilers. The Polish plan also foresees large investments in clean transport, but this is not yet clearly defined and may include investment in gas-fuelled transport.

Among the requirements for NRRPs was the need to consult relevant stakeholders (e.g. local and regional authorities, social partners, civil society organisations, youth organisations) during the preparation phase. However, the quality of stakeholder engagement was not uniform across member states. In some cases, citizens and civil society organisations were not properly consulted. It is not clear whether and how their inputs were reflected in the plan. In its review of Romania's plan, for example, the Commission concludes that public consultation and the integration of feedback received from civil

⁵² <https://www.gov.pl/web/planobudowy/kpo-wyslany-do-komisji-europejskiej>

society were not systematic, and recommends that these are improved at all levels of the administration.⁵³

The Austrian plan, by contrast, boasts a much more comprehensive consultation process that took place ahead of NRRP's design.⁵⁴ The consultation process involved regions (Länder), cities, municipalities, social partners, NGOs, youth organisations and other relevant representatives of civil society. These were invited to submit their project proposals in advance. Overall, the Austrian government received project proposals amounting to €56 billion and some of these proposals have been taken up in the plan. Some measures proposed by the Länder and municipalities have been included in the plan, notably investment support measures and measures in education, both contributing to social and territorial cohesion.

Austria's example shows that it is possible for regional stakeholders to get their priorities across and secure some funding to realise their ambitions. Once the NRRPs are approved, governments will start spending the money on projects and reforms. This will be another opportunity for regions to present their case and explain why it is their projects and reforms that should get financed. In the next section, we're going to look at some measures that governments in PoliRural pilot countries promised to implement in their NRRPs as part of the green transition.

4.2 Green transition in selected EU countries

Belgium: The plan contains 140 measures (35 reforms and 105 investments) that contribute directly or indirectly to the green transition. Measures broadly fall into several key areas: renovations and energy-efficient constructions of buildings and energy-efficient renovations of training facilities; emerging energy technologies with investments in renewable energy (energy island), the hydrogen value chain and a hydrogen and carbon backbone, and accompanying legal and fiscal frameworks; sustainable mobility with measures developing soft mobility infrastructure, modal shift in particular towards rail and the greening of road transport; biodiversity and the protection of the environment in particular with projects on water management and biodiversity in Flanders and sustainability of forests and restoration of biodiversity in Wallonia; circular economy; support to economic activity with measures to support R&D and the green transition in the food sector; skills for the green transition with renovation and equipment of training facilities notably in support of acquisition of skills for the green transition; and social infrastructure through the energy-efficient renovation of child care facilities.

Czech Republic: The plan aims to strengthen energy efficiency by reducing energy consumption and promoting gradual transition to cleaner energy sources in the residential sector. This entails the energy renovation of buildings, including the construction of new buildings, the use of renewable material in buildings and the replacement of existing heating sources into low-emission and emission-free sources. Transport is one of the sectors with the highest emissions growth in Czechia. The plan aims to contribute to the digitalisation of transport, electro-mobility in rail transport, increase the share of

⁵³ https://ec.europa.eu/info/sites/default/files/swd2021_276_en.pdf

⁵⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021SC0160&qid=1624626088799>

rail transport in freight and passenger transport, increase the importance of active mobility in cities, improve traffic safety, and reduce the impact of traffic on the environment and public health. A number of environmental measures aim to create a framework for a more efficient management of water resources. The promotion of natural habitats is also on the agenda. It shall ensure resilient forest ecosystems, contributing inter alia to greater biodiversity and climate change mitigation. Crucially, these measures aim to make life more attractive in villages, effectively contributing to the prevention of depopulation of the Czech countryside.

Finland: One of the key focus areas is energy efficiency of the building stock. Finland aims to abandon all fossil oil-based heating in public buildings by 2024 and completely by 2030. Investments in this area will provide support to owners of private and public buildings to replace fossil oil-based heating systems with low-carbon alternatives. This should lead to lower levels of greenhouse gas emissions and air pollution. Transport is another focus area, accounting for 20% of total emissions in Finland. As part of Finland's progress towards carbon neutrality, it has set an objective of reducing emissions from transport by 50% by 2030 compared to 2005. Measures in this area focus on stimulating the use of electric vehicles or those using alternative fuels by investing in the recharging and refuelling infrastructure.

Greece: Energy efficiency measures are also a priority for Greece and the plan dedicates a significant budget to energy efficiency measures. Beyond energy efficiency, the NRRP has the broader objective of promoting the green transition through the efficient use of natural resources, in particular through water and waste management and protection and restoration of the natural environment. Also, the plan contains a measure to develop Greece's first carbon capture, utilisation and storage facility.

Ireland: Several measures are dedicated to advancing the decarbonisation agenda. As part of this, retrofitting of the residential housing stock will be promoted by offering loans with reduced interest rates to private homeowners and corporate landlords. Biodiversity and ecosystems are supported in the plan through several investments, notably through rehabilitation of peatlands and the river basin management plan. This measure is expected to lead to enhanced biodiversity and ecosystems, water quality improvements, increased carbon storage and reduced carbon emissions. The restoration of peatlands has the potential to promote and encourage the return of flora and fauna in these areas. Ireland has earmarked some funds to advance green skills. According to the NRRP, a suite of educational courses and training programmes aimed at improving green skills will be developed. This is expected to contribute to the upskilling and reskilling of those negatively affected by the pandemic, whilst contributing to achieving Ireland's carbon reduction targets and climate neutrality by 2050.

Italy: The NRRP supports Italy's efforts to increase the share of renewables in transport and heating. The ambition is also to boost the production of clean hydrogen and meet 2% energy demand in this way by 2030. The NRRP envisages important investments in sustainable urban mobility, including e-mobility. Italy will be investing in new metro, tram and bus rapid transit infrastructures (€3.6 billion), in 3,000 zero-emission buses (€2,4 billion), regional trains (€0.8 billion) and cycling paths (€0.6 billion). To reduce GHG emissions from agriculture, Italy plans to develop investment in biomethane, on-farm renewable energy, precision farming and enhanced logistics for the agri-food supply chain.

Latvia: The largest component of the NRRP is devoted to energy efficiency intervention. This includes energy efficiency measures for multi-apartment buildings, businesses, municipal buildings, and public sector buildings, including historical buildings. There is a focus on clean mobility, to be implemented through the purchase of zero-emission vehicles for municipal functions and services. Other specific measures include the electrification of 81 km of railway, the acquisition of 4 low-floor trams, 17 electric buses and 7 electric bus charging stations, as well as the construction of cycling paths. The NRRP supports Latvia's decarbonisation and energy transition objectives, as set out in the National Energy and Climate Plan.

Slovakia: The NRRP includes significant investment in renovation and construction of new buildings. The objective is to renovate at least 30,000 single family houses as well as public historical and listed buildings, which is in line with the national Long-Term Renovation Strategy for Buildings. There are some coal-dependent regions in Slovakia e.g. Horna Nitra. The country wants to facilitate transformation of this region through JTF and other modernisation funds. There are also planned measures to increase the share of environmentally friendly forms of transport and the volume of goods transported in cleaner intermodal transport. To increase the resilience of ecosystems, the plan proposes adaptation reforms and investments in the water management system, land management, nature protection and biodiversity. Specific measures include expanding protected areas, national parks, restoring rivers and floodplains.

Spain: The NRRP earmarks €7.8 billion to be spent on renovating residential dwellings, public buildings, urban rehabilitation and sports facilities. Further investments are planned in renewable energy generation and a flexible, decentralised and dynamic electricity system (€4.5 billion). Spain wants to get more energy from renewable sources, including hydrogen. To that end, investments worth €1.6 billion are planned in the renewable hydrogen value chain. Measures related to sustainability and competitiveness of the agri-food and fisheries sectors include modernising animal and plant health laboratories, improving capacity building and biosecurity systems in livestock farming, strengthening prevention and protection against pests, strengthening the circular economy potential, promoting precision agriculture and organic production, and reducing food waste. About €1.6 billion will also be spent on the protection and restoration of biodiversity and ecosystems.

4.3 Digital recovery

Digital transformation had started gaining speed well before the pandemic, but Covid-19 has certainly accelerated the use of ICTs, as many businesses, governments and individuals had to switch to new online tools to stay connected to their customers, doctors, colleagues, voters and residents. Responding to this trend, the Commission updated its digital strategy for the next decade (called Digital Compass) to advance innovation in four flagship areas:⁵⁵

- **Digitisation of public services:** If the strategy is implemented successfully, all key public services will be provided online, all citizens will have access to their medical records online, while 80% citizens will be using a digital ID.

⁵⁵https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

- **Digital transformation of businesses:** Europe currently has over 100 unicorns (companies whose start-up value is worth \$1 billion). The Commission wants to double this number by 2030. Also, it aims to have three quarters of EU companies using disruptive technologies e.g. cloud, AI, big data.
- **Skills:** The goal is to have 20 million ICT specialists, including women, and 80% of the population with basic digital skills.
- **Secure and sustainable digital infrastructures:** Here, the focus is on improving the EU's position in quantum computing, edge computing and semiconductor industry. Given the ongoing chip shortages, the EU wants to become self-sufficient and boost its share in global semiconductor manufacturing to 20%. Perhaps the most ambitious target in this area is 5G. The plan is that by 2030, 5G will be available to everyone on the continent, with speeds measured in Gigabits, as opposed to Megabits which is largely the case today.

Much progress remains to be made to achieve these targets. Currently, 42% Europeans lack basic digital skills.⁵⁶ The number of ICT specialists was 7.8 million in 2019, of which only one sixth are women.⁵⁷ The EU's semiconductor ambitions are risky and certainly expensive.⁵⁸ Today's top producers enjoy a head start of decades and countless billions of dollars in investment. It is unclear if EU chip plants, with higher labour costs and lower subsidies, can compete with low-cost Asian producers. On 5G, consumers all over the world are feeling a bit disillusioned. The technology has been over-promoted and over-hyped, and there is a notable lack of consumer-facing 5G applications to justify heightened expectations.⁵⁹ Importantly, the existing digital divide between urban and rural areas and across member states could widen even further with the arrival of 5G. Urban areas are better suited to the rollout of high-speed infrastructure, whereas rural areas continue to lack advanced infrastructure deployments.

Yet rural areas are key players in Europe's recovery, something that has been acknowledged in the recently adopted Long-Term Vision for the EU's Rural Areas.⁶⁰ The pandemic forced many people to work remotely. Thanks to Zoom and other online tools, people living in rural areas have been able to carry out their job and activities from the comfort of their home. Many so-called Zoom towns have popped up all over Europe, dramatically altering the nature of work and travel. This is just one example of how communities in rural areas can use innovative solutions to become more resilient, smart and attractive. Since the 1980s, precision agriculture has helped farmers optimise returns on inputs while preserving the environment. The use of drones and data driven approaches (e.g. crop growth models) is making agriculture an appealing career choice for young people once again. Recent advances in distributed ledger technology allow rural areas facing power shortages to leverage blockchain to get affordable access to electricity.⁶¹

For all these reasons, it's important to ensure that urban and rural areas are able to bounce back equally from the pandemic. Advanced digital tools, data-driven business models, high-speed internet,

⁵⁶ <https://euobserver.com/social/148629>

⁵⁷ [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/696189/EPRS_BRI\(2021\)696189_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/696189/EPRS_BRI(2021)696189_EN.pdf)

⁵⁸ <https://www.ft.com/content/a016f686-791f-4a3f-9e7a-c6389896862b>

⁵⁹ <https://blog.cimicorp.com/?p=4640>

⁶⁰ <https://data.consilium.europa.eu/doc/document/ST-10404-2021-INIT/en/pdf>

⁶¹ <https://ieeexplore.ieee.org/abstract/document/9144898>

robotics and IoT solutions are key for the socio-economic development of rural areas. This is widely recognised but is still in the realm of possibility for many rural areas. Despite recent improvements in broadband connectivity, only 59% of households in rural regions have access to high-speed internet (>30Mbps), compared to 87% of the households in the EU. The number of individuals in sparsely populated areas who have never used the internet varies significantly between EU member states, ranging from <10% in Finland, to around 30% in Italy, to over 40% in Greece.⁶²

RRF has offered EU countries an opportunity to address many of these challenges and requirements through a 20% funding quota for digital transformation. What will follow is a review of digital measures promised by governments in their NRRPs. As with green transition, the focus will be on PoliRural pilot countries.

4.4 Digital transition in selected EU countries

Belgium: The plan aims to roll out 5G deployment and provide universal and affordable access to high-speed internet. The plan includes some connectivity investments specifically targeted at rural areas. Additional measures focus on increasing the effective use of technology and digital learning tools in secondary and higher education institutions. Some funds have been allocated to increase digital skills of the adult population, including among vulnerable groups, to promote the use of technology in social housing, and to develop training facilities and programmes, with a focus on the digital transition.

Czech Republic: The NRRP proposes significant investments into very high-capacity networks to establish expanded and faster internet connectivity for residents, entrepreneurs and public administrations, particularly in less developed or rural regions. The development of 5G networks, including in rural areas, is also foreseen in reforms and investment plans. Development of digital skills is one of the objectives of the proposed education reforms, which is complemented by digital upskilling opportunities for working-age adults. The NRRP places a strong emphasis on the digitalisation of public administration, particularly in areas like justice, construction, spatial planning and healthcare. It wants to implement the 'once-only' principle to make public services more accessible and easier to use.

Finland: The plan is expected to contribute to maintaining a high degree of social cohesion through increased employment in rural areas notably by extending digital services. Specific measures include the extension of optical fibre and wireless broadband connections to rural areas. This is expected to improve teleworking possibilities, as well as access to social and healthcare systems and networks. The NRRP contains a reform of continuous learning accompanied by an extensive digitisation programme to build digital services and information resources on continuous learning, with the aim of facilitating access to digital education services, and to provide a specific training programme related to digital skills. Finland also aims to increase the number of students with a higher degree in sectors experiencing labour shortages, including the ICT sector.

⁶² https://enrd.ec.europa.eu/sites/default/files/enrd_publications/smart-villages_orientations_digital-strategies.pdf

Greece: Through reforms and targeted investments, the country wants to create an enabling environment for achieving Gigabit targets, and to bridge the digital divide by implementing the cross-border 5G corridors and interconnecting islands with submarine fibre cables.

Ireland: The NRRP contains measures that aim to bring connectivity to 990 schools, many of which are in rural areas. Another scheme targets enterprises across the country, providing digital support and opportunities for companies located in less productive regions.

Italy: The NRRP envisages a significant investment in digital infrastructure for the deployment of ultra-fast broadband, 5G and satellite connections. Other investments will target the digital skill gap among the Italian population in a bid to strengthen social inclusion. Advanced digital skills development is addressed as part of broader measures to support a labour market in transition. The NRRP will increase the capacity of the higher-education system to provide digital education to university students and workers, and will finance Ph.D. courses in new technologies to meet the needs of tech enterprises.

Latvia: The NRRP's digital component consists of 25 measures to support digital transformation. Measures aim to develop the necessary infrastructure, capacities and skills, improve efficiency, digital processes and data management in public administration. They also aim to provide support to businesses and improve connectivity via 5G and last mile connections in rural areas.

Slovakia: The NRRP will contribute to the expansion of digital services, 5G and high-speed broadband, and is expected to boost possibilities for distance learning and teleworking across the country. Other outlined actions aim to support faster and more efficient e-government, provide better digital infrastructure and equipment at all levels of education, support digital skills development and create a broader digital learning ecosystem conducive to digital transformation.

Spain: The Plan includes significant investments that are designed to close the digital divide between urban and rural areas and to enable the full potential of 5G connectivity. It will improve the already good level of digital coverage through investments in the digital infrastructure network, with a particular focus on less populated areas. Funds will be available for SMEs to support them in their digital transition. There are also planned reforms and investments aimed at young people in the areas of education, digital skills and the labour market. To close the skills gap, training for ICT specialists will be provided through scholarships and the development of massive online open courses on cybersecurity, AI and other disruptive technologies.

5 New model of agriculture and sustainability

Few EU policies have received as much criticism as CAP has. Those calling for a reform of CAP usually challenge the policy on several grounds.

5.1 Criticisms of CAP

Disproportionality: While farming is clearly important for ensuring Europe's food security, the agricultural sector contributed only 1.3% to the EU's GDP in 2020.⁶³ And yet CAP, until recently, accounted for 38% of the total EU budget.

Preferential treatment: By ignoring the rules of supply and demand, CAP gives the agricultural sector an unfair advantage over other industries. Basically, critics are saying that farmers should learn how to survive on their own in a free market like any other business.

Inequitable distribution: Some 20% of the largest farms receive around 80% of direct payments. Moreover, CAP subsidies have been linked to fraudulent practices,⁶⁴ and a 2021 report looking at the use of agricultural funds in Central and Eastern Europe found a clear inequality between fund allocations for big and small farms. The report noted that there are "systemic advantages" for big farms whose managers have close ties to the ruling political elite.⁶⁵ Companies linked to Andrej Babis, the billionaire Czech prime minister, got €34 million one year. Such headlines typically provide CAP critics even more reason to argue that a more drastic reform is urgently needed.

Environmental damage: In Europe and beyond, large-scale industrial agriculture has been criticised for its negative impact on the environment. It has been blamed for the increase in CO2 emissions and the growing pollution of soil and water through the use of pesticides and fertilisers. Because 80% of agricultural land in the EU is owned by just 20% of the farms, environmental groups, climate activists and green political parties all have criticised CAP on the grounds that it inadvertently contributes to such outcomes.⁶⁶

Concerns about CAP's poor environmental credentials are neither new⁶⁷ nor do they exclusively focus on intensive farming. Biodiversity-loss has attracted considerable attention too. For example, in pre-Brexit Britain, UK farmers could not receive basic payments for land featuring ponds, wide hedges, salt marshes or regenerating woodland because such land is not suitable for production. Only land suitable for agricultural production is considered agricultural. Agricultural areas include arable land, permanent crops and permanent grassland. Farmers had to show that this land is either used for some form of agricultural activities or maintained in good agricultural condition. This led some critics to claim that the requirement to keep land in good agricultural condition (without growing anything on it) created perverse incentives for destroying elements critical to biodiversity e.g. woods, scrubland, reed beds, bogs.⁶⁸

Perhaps the most damning assessment of CAP's impact on biodiversity came from the European Court of Auditors.⁶⁹ They argued that CAP has failed to reverse the ongoing decline in biodiversity caused

⁶³ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Performance_of_the_agricultural_sector

⁶⁴ https://www.europarl.europa.eu/doceo/document/E-8-2015-003940_EN.html

⁶⁵ <https://www.greens-efa.eu/en/article/document/where-does-the-eu-money-go>

⁶⁶ <https://www.dw.com/en/eu-agriculture-policy-what-are-the-bones-of-contention/a-55352567>

⁶⁷ <https://www.newscientist.com/article/mg12617141-100-europes-agriculture-policy-destroys-the-environment/>

⁶⁸ <https://www.theguardian.com/commentisfree/2016/jun/21/waste-cash-leavers-in-out-land-subsidie>

⁶⁹ <https://s3.eu-central-1.amazonaws.com/euobs-media/0b10da05b962cb1a51b53f976cf2c788.pdf>

mainly by intensive farming. Further, the auditors highlighted how farmers were being paid to undertake environmentally friendly measures they would have done anyway, such as crop rotation, while governments handed out “green cash” with little oversight.⁷⁰

5.2 In defence of CAP and farmers

Just how valid are these criticisms? With regards to disproportionality, the share of EU budget dedicated to agricultural spending has been steadily declining over the years. In the 1980s, CAP represented a whopping 66% of the budget. In the last financial framework (2014-2020) - 37.8%. In the next period running until 2027, the share will drop even further, to 31%.⁷¹

As regards favourable treatment, unlike many businesses, farmers are particularly vulnerable to climate change and adverse weather conditions. CAP provides the stability needed to protect food supply within the EU while ensuring food safety and at least some level of environmental protection.

Farmers have been criticised for many years, with the Economist recently calling them “ludicrously privileged.”⁷² In the eyes of the public, farmers essentially “get paid for doing nothing” because they no longer need to provide commodities to get a subsidy (decoupling).⁷³ Not only is this changing in the new legislation with the introduction of the concept of 'active farmer' (meaning that only those engaged in at least a minimum level of agricultural activity may receive certain EU support), this view is also overly simplistic. It ignores important work that farmers, in particular small ones, are doing. Besides food production, farmers contribute to the management of public goods (e.g. landscapes) and a wide range of ecosystem services that help urban areas mitigate the worst effects of climate change.⁷⁴

Whereas it is true that farming activities emit GHG gases such as methane, and in that sense are doing damage to the planet, they also sequester carbon in soils, hedgerows, and this should be taken into account when measuring their overall impact on the environment. Agricultural researchers in New Zealand, for example, point out that emissions from both beef and dairy production have decreased by about 30% since 1990. They also point out that sheep farmers can offset existing emissions by anywhere from 63% to 118% because of the carbon captured by the trees and vegetation on their land.⁷⁵ For these reasons, New Zealand farmers therefore want formal recognition of carbon captured on their land, so they can determine what the true impact of their activities is, inform consumers and take measures needed to reach net zero by 2050.

⁷⁰ <https://www.theguardian.com/world/2020/mar/09/what-is-the-european-green-deal-and-will-it-really-cost-1tn>

⁷¹ <https://www.europarl.europa.eu/factsheets/en/sheet/106/financing-of-the-cap>

⁷² <https://www.economist.com/europe/2021/05/27/how-farmers-still-rule-europe>

⁷³ <https://www.sciencedirect.com/science/article/pii/S2590332220303559>

⁷⁴ <https://www.interregeurope.eu/progress/events/event/4315/practical-experiences-payment-for-ecosystem-services/>

⁷⁵ <https://www.farmersjournal.ie/new-zealand-farms-could-be-offsetting-on-farm-emissions-by-up-to-118-575726>

On the 20/80 issue, the Commission has acted by putting in place measures to prevent unlawful spending of taxpayers' money. These include individual inspections, audits and a new IT system that uses Earth Observation data to carry out checks for area-based CAP payments.⁷⁶

The new CAP will ensure a fairer distribution of CAP support, especially to small and medium-sized family farms and young farmers. For the first time, redistribution of income support will be mandatory. Member states will need to redistribute at least 10% in favour of small farms.⁷⁷ Another mandatory requirement is the allocation of at least 3% of national budgets for CAP income support to young farmers. These novelties go some way to addressing past criticisms that highly profitable large industrial farms, despite being in no need of assistance, benefited significantly from high levels of CAP support, whereas small farmers, who really did need help, were not getting as much assistance as they required.

To address environmental concerns, and in particular biodiversity loss, the enhanced conditionality under the new CAP requires that on every farm at least 3% of arable land is dedicated to non-productive elements. The conditionality also includes mandatory requirements and standards related to environmental management, as well as public, animal and plant health, which all farmers in receipt of direct payments must fulfil. At least 25% of the budget for direct payments (€48 billion) must be allocated by member states for eco-schemes, providing stronger incentives for climate- and environment-friendly farming practices e.g. organic farming, agro-ecology, carbon farming.^{78,79}

5.3 Decarbonisation of agriculture

Further efforts to restore ecosystems and reduce pollution are elaborated in the new Farm2Fork and biodiversity strategies.^{80,81} The 2030 targets have been set for the reduction of pesticide use (50%) and fertiliser use (20%). The amount of land reserved for organic production should increase three-fold, to 25%.

As is often the case, some critics believe these targets are not ambitious enough. A European Citizen Initiative, for example, calls for an 80% pesticide reduction target by 2030.⁸² There are also those who think the strategies fail to address some of the root causes driving climate-related and environmental challenges i.e. the excessive livestock production and over-consumption of meat and dairy.⁸³ In the EU, agriculture accounts for around 10% of the GHG emissions, of which around 70% is produced by livestock farming.⁸⁴ While the Commission is not calling for a cut in the production and consumption of all meat products and dairy, some EU countries are seriously considering reducing the livestock numbers, much to the dismay of farming communities. One example is Ireland. The Taoiseach has

⁷⁶ <https://www.geospatialworld.net/news/eu-adopts-new-rules-to-enable-farm-checks-using-earth-observation-data/>

⁷⁷ https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/new-cap-2023-27/key-reforms-new-cap_en

⁷⁸ https://ec.europa.eu/commission/presscorner/detail/en/IP_21_2711

⁷⁹ https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/new-cap-2023-27_en

⁸⁰ https://ec.europa.eu/food/plants/pesticides/sustainable-use-pesticides/farm-fork-targets-progress_en

⁸¹ https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en

⁸² <https://www.pan-europe.info/press-releases/2021/09/press-release-save-bees-and-farmers-european-citizens-initiative-citizens>

⁸³ <https://www.epc.eu/en/Publications/The-Farm-to-Fork-Strategy-and-the-inconvenient-truth~33ac84>

⁸⁴ [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651922/EPRS_BRI\(2020\)651922_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651922/EPRS_BRI(2020)651922_EN.pdf)

suggested that stabilising cattle numbers could form part of the country's strategy to curb carbon emissions.⁸⁵ Another is the Netherlands, which recently proposed radical plans to cut livestock numbers by almost a third to reduce ammonia pollution.⁸⁶

There is some controversy around methane emissions from cattle. While animal agriculture deserves some blame for global warming, the industry's impact on the environment might not be as bad as critics claim. A lot depends on how these emissions are measured.⁸⁷ The Irish Farmers Association goes so far as to claim that methane emissions from cattle are being overstated.⁸⁸ What is certain though is that reductions in livestock numbers, if realised, would have a devastating impact on the livelihoods of thousands of farmers.

Farm2Fork and biodiversity strategies can also be evaluated in terms of their impact on agricultural yields. A recent study by Wageningen University concluded that if the use of fertiliser is reduced according to the EU's plans, agricultural crops may decline.⁸⁹ Lower production, in turn, could lead to price increases, less European exports and more imports of agricultural products from abroad. Furthermore, using less pesticides and fertilisers can result in quality problems. For instance, if fewer pesticides are used, grain can become susceptible to fungal toxins, making it unusable for food and animal feed. What this shows is that efforts to combat climate change and restore biodiversity, although well-meaning, can have devastating effects on farming communities and those who depend on them for food or other products. Such impacts are best examined using techniques like system dynamic modelling (SDM). SDM can provide useful insights into the dynamic relationship between Green Deal objectives and other key parameter values such as agricultural yields, commodity prices, farm incomes, and imports, to name just a few. SDM tools currently being developed by PoliRural go some way to helping regional teams examine these trade-offs more closely as they try to align their action plans with EU missions.

In general, the decarbonisation of agriculture is an important new dimension of CAP reform that has caught many governments unaware, creating tension between national strategies addressing climate change and the further development of the agri-food sector. To return to the Irish example, The central government is committed to net-zero by 2050 and has set an intermediate target of 51% reduction in total GHG emissions by 2030. The Climate Change Advisory Council of Ireland is working to establish sector by sector carbon budgets and it is expected that a 30% target will be applied to the agricultural sector for 2030. This amounts to an annual reduction of 7% each year from now until 2030.

In the absence of a comprehensive strategy for helping the sector, the Irish Farmers Journal commissioned KPMG to carry out an economic impact assessment of the impact of possible government climate measures on the Irish farming sector.⁹⁰ This examines a range of scenarios for impact on outputs, revenues and employment for likely policy mixes intended to achieve reduction of

⁸⁵ <https://www.farmersjournal.ie/limits-on-cattle-numbers-not-ruled-out-by-taoiseach-648673>

⁸⁶ <https://www.theguardian.com/environment/2021/sep/09/netherlands-proposes-radical-plans-to-cut-livestock-numbers-by-almost-a-third>

⁸⁷ <https://www.farmersjournal.ie/high-confidence-in-methane-metric-could-be-good-for-national-herd-640100>

⁸⁸ <https://www.farmersjournal.ie/methane-emissions-from-cattle-are-being-overstated-ipcc-report-641512>

⁸⁹ <https://www.wur.nl/en/news-wur/Show/Green-Deal-probably-leads-to-lower-agricultural-yields.htm>

⁹⁰ <https://www.farmersjournal.ie/kpmgreport.php>

13%, 18%, 30% and 50% in farm-related GHG emissions by 2030. The higher goals of 30% and 50% reduction will require significant reductions in beef and dairy herd populations, causing significant levels of lost output and employment.

The urgency of the situation and the need for greater attention is clear from the headlines of the KPMG report which estimates losses of up to €4 billion in economic output, losses of at least 26,700 FTE⁹¹ directly employed on farms and anywhere from 48,400 to 121,000 when related off-farm employment is taken into account.

All of this is making the other equally important mission of improving farm incomes even harder to achieve than it has been in the past.

5.4 Improving the livelihoods of farm families

One of the key concepts arising in relation to CAP reform is the idea that farmers should be fairly compensated for what they provide. The KPMG study cited before points out that only 65% of farms in Ireland were economically viable in 2020, and the average annual income of a farm is €25,660.

The climate change challenge could be seen by some as an opportunity to ‘clean up’ the sector by culling the weakest farms. But this would come at enormous social cost and would cause political chaos. It ignores the wide range of other essential services that farmers provide to society, at very little cost. It also ignores the fact that most farm families derive a significant share of their income from off-farm activities.

It is important to note that many of the ecological and climate related services provided by farmers, such as carbon sequestration, are now at the center of rapidly growing industry sectors, providing nature-based solutions to the challenges of climate change and the challenge of transition to a post-carbon economy.

Growth in these new industry sectors is being driven by the climate-based regulation of industry, by consumer demand and supply chain dynamics, by activist shareholders and the risk management strategies of the finance industry, as well as by venture backed entrepreneurs and private equity. Important questions need to be asked as to how rural communities in general and farmers in particular can benefit from this new and emerging dynamic.

While the decarbonisation of agriculture may threaten the livelihoods of those who do not or cannot adapt, it provides opportunity and the possibility of employment for many others. Sources of non-farm income are of direct benefit for farm families and support new entrants to rural areas by providing a more welcoming and dynamic socio-economic context for development.

PoliRural is preparing a Guide to Deep Dives on CAP Reform that explores these and other issues related to fairness and farm income in some detail. In general, one can conclude that the improvement

⁹¹ Full-time equivalent

of livelihoods of farmers is an important mission that has received unprecedented attention in the current CAP reform, but whose consequences and significance has not yet been fully absorbed by national and regional authorities or even by mainstream economists. Arguably this should proceed by pursuing parallel strategies intended to

- Improve on-farm incomes from traditional activities such as food production, based on local food systems, new business models, and new forms of social entrepreneurship
- Create new sources of on-farm income from ecosystem services including carbon sequestration
- Create new sources of non-farm income from the diversification of rural economies in areas such as energy production and circular economic activities

5.5 The social dimension and the role of member states

For the first time, CAP will include social conditionality, meaning that CAP beneficiaries will have to respect elements of European social and labour law to receive CAP funds. This adds a new social dimension to CAP, which may potentially become the program's third pillar (the first pillar is direct payments, the second - rural development). This conditionality was added to tackle social dumping and improve general working conditions on the farm. Social dumping basically means cheap labour. It happens when foreign workers are offered less pay and social protection than is required by law or collective agreement prevalent in the host country.

For some, the 'third pillar' would be welcome news. But as with the CBAM, dealing with social conditionality could mean more red tape in a subsidy programme that is already quite complex. That said, the CAP's social dimension will not start applying from day one. The new mechanism will be compulsory only as of 2025, and will start being implemented only by those EU member states who are ready from 1 January 2023.⁹²

Under the new CAP, national administrations will play a more leading role in defining important aspects of the CAP implementation. The reform provides them with flexibility to better adapt CAP to the priorities and specific needs of rural areas. For example, under the "old" CAP, green direct payments were implemented by member states following a common set of practices and rules set at EU level. In the new, post-2020 CAP, the proposed eco-scheme offers member states more autonomy to determine the details and substance of environmental and climate actions.

The practical consequence of this is that regions must now play a much more proactive role in the formulation of CAP policy, making sure that their interests are adequately represented in the national strategic plans, which all EU countries must prepare by the end of 2021. The European Commission will assess those, checking how they address objectives set out in CAP, Green Deal, Farm to Fork and Biodiversity strategies. Approved plans will enter into force in 2023.⁹³

⁹² <https://www.euractiv.com/section/agriculture-food/news/cap-deal-lays-ground-for-third-social-pillar/>

⁹³ https://ec.europa.eu/commission/presscorner/detail/en/IP_21_2711



Figure 2. Alignment of priorities at different governance levels

6 Conclusion and recommendations

This deliverable attempted to brief PoliRural regional teams on the kind of issues they might want to consider as they begin to align their action plans with high-level EU missions. It started with a review of the MOI concept. Despite gaining in popularity, MOI policies fail to substantially distinguish themselves from similar governance approaches that promote experimentation, bottom-up engagement and cooperation across sectors and industries. There is a good understanding of what MOI policies should be (bold and ambitious), what they should achieve (solve wicked societal problems) and how (through policy mix and radical innovations). But few really understand how to actually implement them, because little practical guidance is available on the actual stages involved in mission-oriented policy making. Furthermore, initiatives that carry the MOI label often fail to explain what it is exactly that makes them mission-oriented. They typically refer to multi-stakeholder collaboration, a forward-looking vision, investment in science and technology with a strong societal focus all of which are, of course, not unique to MOI.

MOI recommendations: In the absence of a fixed definition and methodology, regional teams should decide what MOI means for them and their region. Is it just about orienting your regional policies toward high-level EU missions? Or is it about actually trialling a radically new governance approach to achieve a long-term vision for your region?

Those who feel adventurous and decide to explore the second option should be prepared to face a possible mismatch between capacities that a true mission-oriented approach might demand and the competencies available in the existing innovation system. After years of austerity, budget cuts and outsourcing of responsibilities to third parties, many governments might quickly discover that delivering a fully-fledged MOI project is easier said than done.

These words of caution are not meant to discourage foresight pilots from trying out the MOI approach. The intention is simply to alert them to the possible difficulties that may arise once they embark on this journey. After all, the MOI process can lead to a new way of organising regional development work, one in which resources, knowledge and efforts are pooled across disciplines and policy silos to collectively advance bold and inspirational societal goals. Regional teams are encouraged to explore available learning resources on the subject (e.g. the OECD's MOI toolkit) to better understand how MOI policies could be set up, implemented and evaluated.

The Green Deal was announced to much fanfare only a couple of years ago but has already been caught up in several major controversies like the Poland-Czechia spat and the ongoing energy crisis. Even before the Green Deal was announced it was clear that transition to net zero will be painful for industries, businesses and households. Over the next decades, a lot of jobs will be transformed, many new ones will be created, and some will disappear for good. Industries dependent on fossil fuels have no choice but to evolve while some (e.g. coal mining) are going to be phased out completely. People will be living in more energy-efficient buildings but this will come at a price that some would find unaffordable. Companies at home and abroad that trade in carbon-intensive products are going to face administrative challenges and increased costs associated with the CBAM proposal. All in all, there are lots of uncertainties and risks lurking on the path to carbon neutrality, but the mission also presents many opportunities for cities and regions to negotiate the kind of deal that is good for them and their people. Local and regional authorities implement 70% of all EU legislation, 70% of climate mitigation

measures, 90% of climate adaptation policies, and 65% of the Sustainable Development Goals. They represent one third of public spending and two thirds of public investment.⁹⁴ They will be instrumental in delivering the Green Deal on the ground.

Green Deal recommendations: PoliRural pilots should take ownership and shape the Green Deal in areas falling under their competencies. Some pilots have coal dependent regions (e.g. in Poland and Slovakia), so they would be well advised to develop action plans around communities that are going to be affected the most by the transition. The JTF would be an important source of finance in this regard. To get this funding, regions need to ensure that their needs are reflected in the Territorial Just Transition Plan.⁹⁵ This is the plan that national governments will have to submit to the Commission, detailing the transition process for ceasing or significantly scaling down fossil fuel extraction, production or use.

If exposure to fossil fuels varies from pilot to pilot, the renouave wave is going to substantially affect all regions. Now is a good time to start identifying renovation measures and stakeholder groups most likely to be affected by the change. Ultimately, regional proposals should be developed for ingestion into the Climate Action Social Plan.⁹⁶ National governments will submit these plans to get money from the SCF to finance temporary direct income support to vulnerable households and to support measures and investments that reduce emissions in road transport and buildings. A useful resource to consult in this regard would be the Just Transition Platform.⁹⁷ It's a single access point for support and knowledge related to the just transition. The platform offers technical and advisory support, and promotes the exchange of best practices among all stakeholders involved, including through regular physical and virtual meetings.

For rural areas, the green transition will require the development of partnerships in all economic activities, between businesses of all sectors, local authorities, researchers and services based on innovation, knowledge sharing and cooperation. This is very much in line with the MOI approach. Going forward, pilot teams should build on the participatory foresight experience gained in PoliRural to create a vision of climate resilience and adaptation that is region-specific, that is adjusted to local challenges and climate risks, and that makes clear what social, economic, cultural and behavioural change should be pursued while taking into account existing programmes, strategies and commitments at different governance levels.

Recovery from the pandemic will continue to dominate political agendas for months to come. In an effort to stave off a deepening recession, governments, understandably, are going to make the economy, labour market and public health their top priorities. As they do so, it might be tempting for them to brush climate change aside as a lower-order concern to be addressed later. Embracing such a view, however, represents a missed opportunity to bounce back stronger from Covid-19. Adding an environmental dimension to the recovery package not only can help build resilience against future outbreaks, it can also sustain jobs and economic activity (e.g. through green stimulus packages) and contribute to an overall emission reduction. In case some EU member states had doubts about the need for recovery to be green, the Commission made sure that environmental measures are part of

⁹⁴ <https://cor.europa.eu/en/Documents/COR-2019-04351-00-00-RES-TRA-EN.pdf>

⁹⁵ https://ec.europa.eu/regional_policy/sources/thefunds/jtf/swd_territ_just_trans_plan_en.pdf

⁹⁶ https://ec.europa.eu/info/sites/default/files/social-climate-fund_with-annex_en.pdf

⁹⁷ https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism/just-transition-platform_en

every national recovery strategy. This was achieved by mainstreaming green transition in all the major EU legislation and by setting a minimum threshold of funds from RRF to be spent on it (37%). To ensure that recovery is also digital, a further 20% of RRF has to be spent on digital transformation. Although the majority of NRRPs have already been submitted and assessed, it does not mean that regions can do little now to influence how the money will be spent. Far from it.

Recovery and resilience recommendations: The NRRPs and assessments thereof are publicly available on the Commission’s website.⁹⁸ This deliverable provided only a short summary of measures that national governments intend to implement using funds from the RRF. Regional teams should study both plans and assessments carefully as they prepare their action plans, not least to understand where national priorities lie, what initiatives will be funded, what territories and communities will be prioritised, and how much money will be spent on different projects. Ultimately, how the money is going to be spent will be a matter of negotiation. Pilots should be proactive in putting forward ideas if they want their region and communities to get a slice of the pie. One could argue that PoliRural pilots are in a more advantageous position compared to other regions who did not have the foresight experience and therefore lack the comprehensive body of knowledge that can be readily drawn upon to make a case for investment. Moreover, PoliRural pilots have all the tools necessary to conduct additional deep dives on issues of importance to their region to make their case even stronger.⁹⁹ One issue in particular that would be interesting to explore is how the RRF money can be used to narrow the digital divide between rural and urban areas.

Few EU policies have been as contentious as CAP. It has been criticised for devouring a disproportionate share of the EU’s budget, for giving farmers a preferential treatment compared to workers in other industries, for making the rich richer, and for destroying the environment. While there is some truth in these accusations, it’s easy to counter them. CAP’s share of the budget, while still big, has been steadily declining. Farmers are more exposed to climate change and commodity price volatility than workers in other sectors. Moreover, they support important ecosystem services but often don’t get enough credit for that. To help small farmers and tackle corruption, new redistributive and technical measures have been introduced in the new CAP. And there are also new conditionalities linked to the preservation and restoration of biodiversity that all farmers receiving direct payments must fulfil. In general, CAP has helped ensure food security in Europe, allowing consumers to enjoy high-quality, nutritious produce at low cost. The policy will also be instrumental in achieving progress on generation renewal, as currently only about 6% of agricultural holders in the EU are younger than 35 years of age.

The post-2023 CAP will provide more flexibility to member states to adapt the policy to their specific needs and priorities while respecting the overarching EU-level objectives and targets. The opportunity for bottom-up intervention is certainly something to cherish, however the practicalities of how different rural and regional needs will be accommodated in the national CAP strategic plans that member states need to submit to the Commission by the end of 2021, are not clear.

⁹⁸ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en#national-recovery-and-resilience-plans

⁹⁹ The deep-dive guide Covid-19 is available on the PoliRural website. Three more guides will follow soon, on the Green Deal, CAP Reon form and biodiversity.

CAP related recommendations: The foresight approach such as the one practiced in PoliRural can support regions in formulating arguments that can be put forward to national governments as they figure out a way to align the policy with EU and regional priorities. The cascade process is far from straightforward. It is therefore strongly recommended that each regional foresight team obtains the support of a local expert on CAP reform, not only to understand the conditions being applied at EU level, but also to follow the thinking about how these will be interpreted and applied by each member state. It is essential to involve experts who can explain the logic of the reform and highlight what has changed and the opportunity that this has created for the reinvention of agriculture and the direction that this is taking in each region. Areas that require special attention are the new conditionalities (e.g. for redistribution, soil protection, biodiversity), the social dimension, the issue of fairness centered around farmers' income, and the possible negative consequences of the decarbonisation agenda, such as lower yields, reduced crop quality, and threats to farmers' livelihoods.