D1.12 Framework Alignment and Theory Update (ed. 3)

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Executive Summary

This deliverable concludes a series of reviews that compare initial framework conditions against what actually happened in the project. Such retrospective analysis helps identify two things: gaps in project performance and new elements not foreseen in the original framework that were added to support specific work streams.

Included in the scope of final review are second and third PoliRural stages: Future Regional Outlook and Mission Oriented Innovation. Most work streams in these stages were running at the time of writing D1.12, so their final results will be reported and reflected upon in full in the upcoming deliverables of WP5 and WP6. Still, enough activities took place in the period covered by this review (January 2021 - April 2022) that allow us to reach broad conclusions as to their alignment with the framework.

Future Regional Outlook

The corresponding work streams - scenario building, impact simulations, impact validation - proceeded as planned. The term 'scenario' wasn't defined in the original framework. So the team gave meaning to the term by describing it in terms of a policy mix. In addition, new activities were added to support pilots with scenario building: 1) creation of a statement of expectations regarding the System Dynamic Modelling (SDM) trials, and 2) operationalisation of policy scenarios in terms of control and performance parameters.

The major issue concerning impact simulations is the availability of data. In fact, it is the main reason why for a pilot in Poland no SDM model was built. So, PoliRural ended up having 11 regional models as opposed to 12 that were promised originally.

The web tool developed for SDM trials has considerable potential to revolutionise rural policy making. It offers current and future users the ability to safe-test policies that best correspond to long-term priorities at regional, national and EU levels. But because pilots were still testing the tool in April 2022, we couldn't establish external validity as regards its usefulness and accuracy. Although not captured in this deliverable, evaluation results will be reported and reflected upon in D5.5 A Dynamic Rural Development Model.

Mission Oriented Innovation

Important changes and updates happened in three corresponding work streams: mission design, mission rollout, and impact assessment. Missions obtained a defined meaning in PoliRural, something that was lacking in the original framework. These are the four high-level policy missions pursued by the EU: transition to net zero, recovery from Covid-19, CAP reform, and implementation of biodiversity-based model of sustainability.

So, a mission oriented policy in the context of PoliRural is to be understood as a policy mix that is aligned with some or all of the EU missions. This policy mix will be introduced by regional stakeholders on the basis of the foresight package that has been refined by PoliRural pilots over several iterations. The main issue here is that mission rollout is unlikely to happen during the project, which is contrary to what the framework is suggesting might happen. That said, mission rollout is not a question of if but when. Mission oriented policies co-designed in PoliRural are planned to be rolled out post-project following the schedule outlined in a roadmap, one of the elements of the foresight package.

While the project is still running, pilots will be refining their vision, action plan and roadmap, together with stakeholders and using, where necessary, the SDM tool. The first (ex ante) evaluation revealed some weak points in the initial package, mostly relating to human and financial resources needed to implement the action plan, as well as to performance indicators required for measuring and monitoring progress. These issues need to be addressed along with any other recommendations that will come out of D5.5 and D6.2 (Regional Action Plans).

The next (ex durante) evaluation should be seen as the third iteration of the foresight package, not as an impact assessment exercise focusing on the impact of mission-oriented policies introduced by PoliRural pilots, as suggested in the framework. This is because, as mentioned above, no new measures are likely to be introduced while the project is running, so there will be no impact to evaluate in D6.3 Ex Durante Case Studies. Instead, the project should use D6.3 to refine and improve foresight packages before the post-funding phase kicks in, to ensure successful rollout of mission-oriented policies at a time that is appropriate for each region.

All the changes that took place and have yet to take place allow us to make adjustments to the foresight framework piloted by PoliRural, making it more robust, apt and relevant. The framework and all of its constituent parts will be explained in detail in a series of webinars scheduled for June and July 2022. The planned dissemination activity is intended to help others to follow the PoliRural approach in a new context to make their rural area more resilient and prosperous.

Introduction

Framework Alignment and Theory Update is a series of three deliverables whose goal is to review activities that actually happened in the project against the initial framework codified in the Description of Action (DoA). By performing a retrospective analysis, we hope to learn

from our experience with a view to improving the framework for the benefit of PoliRural and others who may wish to follow our approach when the project ends. The main vehicle for disseminating this knowledge is an online course comprising four webinars to be delivered in June and July 2022.

PoliRural framework

PoliRural is piloting a foresight framework to help rural stakeholders become better equipped to solve existing and emerging rural challenges, make rural populations more empowered and rural areas more resilient and prosperous.[1] The framework is implemented in three stages that build on each other and sometimes overlap as the project unfolds. The first stage, Current Rural Situation, is covered by the previous two editions (D1.6 and D1.9). It started with a needs/issues analysis and culminated in an evaluation exercise that assessed the performance of rural policies, most of them LEADER related, in the twelve regions (see the Compendium of Regional Evaluation Reports).[2]

The second stage, Future Regional Outlook, is more forward-looking in that it builds a vision of the region based on the identified challenges, its development potential and aspirations for the future, local and EU priorities, including those expressed in the Long Term Vision for Rural Areas,[3] the European Green Deal,[4] and CAP reform.[5] This stage proposes a set of measures for regions to implement as part of the Mission Oriented Approach (MOA) covered in stage three. Arguably, the main innovative part of building regional outlooks is the use of System Dynamic Modelling (SDM). In PoliRural, SDM helps regional teams evaluate new policies ex ante, by showing the impact that different interventions have, individually or in combination with one another, on key performance indicators linked to the vision. The teams can tweak input parameters until they arrive at a policy mix that delivers the best result as measured by output parameters. Once results have been validated by regional stakeholders, they can be proposed for implementation under the MOA banner.

Some activities of Future Regional Outlook have roots in Current Rural Situation. Scenario building, for example, started in the first year of the project and is only coming to a close now (Spring 2022). D1.6 and D1.9 covered developments in scenario building until January 2021. This deliverable extends the review to April 2022. Other activities of Future Regional Outlook (e.g. impact simulations, impact validation) fell outside the scope of two previous reviews and so will be covered for the first time in this deliverable.

[1] https://polirural.eu/pilots

[2] https://polirural.eu/resources/reports/

[3] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021DC0345

[4] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

[5] https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy_en

D1.12 also covers stage three Mission Oriented Innovation, but only to an extent, because some of its activities are still in progress (mission design), some were implemented only partially (impact assessment), and some have yet to start (mission roll-out). In PoliRural, regional missions are codified in the foresight package consisting of a vision, an action plan and a roadmap. As mission implementation can be a long and laborious process, running for 5-10 years or more, mission outcomes are not going to manifest themselves during the project's lifetime. This will be a task for the monitoring committee, to be set up by each region while the project is still running, to ensure that missions are on track and that appropriate corrective action is taken in the case of deviation or underperformance.

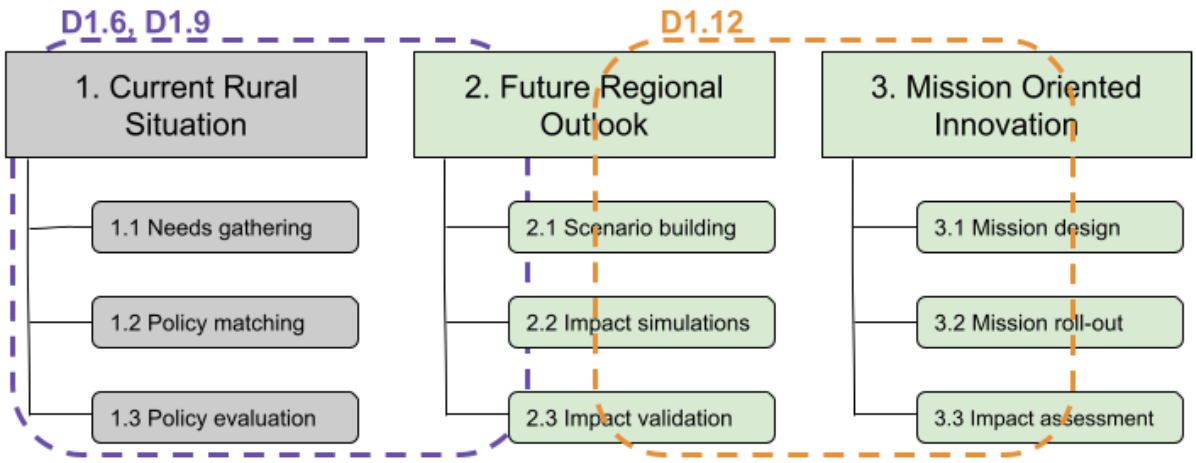

Figure 1. PoliRural framework and reviews

The deliverable will proceed as follows. Stages two and three will be described in turn. When reviewing their constituent parts, we will first outline our initial thinking about a particular workstream, before presenting what actually happened in the project. One caveat we would like to add at this stage is that, when preparing D1.12, many work streams were still in progress. A complete set of results on which to base a thorough review was therefore missing. Nevertheless, for tasks that are incomplete or whose start date is in the future, we cross-examined methodological steps and reviewed available results from some pilots, to get a sense of the overall alignment with and/or deviation from the framework. The identified differences between plans and achievements are captured in concluding remarks of each chapter. In conclusion, we reflect on the main findings and alert readers to the upcoming webinar series where concepts and results discussed in the deliverable will be presented.

Future Regional Outlook

Scenario building

DoA is short on details regarding the substance and process of scenario building, mentioning only that it should be 'model-assisted' and should integrate diverse information sources and perspectives. This multidisciplinary and multi-method approach is meant to critically inform the formulation of new policies in all participating regions, coalescing stakeholders around an optimal set of measures whose efficacy is borne out by SDM results that, in turn, command a high degree of trust (usefulness 70%, accuracy 90%).

Such a broad framework for scenario building allowed SDM and foresight experts to adapt the process to the needs of PoliRural pilots, starting with the definition. What is meant by a scenario?

In general, a scenario is a narrative about possible futures. There is no absolutely correct way to approach scenario building. In PoliRural, we avoided highly abstract, qualitative scenarios with little practical value. So, when regional teams were asked to develop scenarios, they had to develop *policy* scenarios or policy options that they can then use to address policy challenges and achieve the vision of their region at some distant point in time.

Following the guidance provided in D1.8 Future Outlooks Methodology,[6] foresight teams[7] had to make choices about which options are most appropriate for their region, including by testing them for impact using SDM. SDM is therefore an enabler of the model-assisted scenario planning promised in DoA. In addition, given its mix of quantitative and qualitative characteristics, SDM has offered a means to integrate diverse information sources and perspectives in policy co-design. For the most part of scenario building, foresight teams collected data and acted as a conduit of information between regional stakeholders and the SDM team. This process of knowledge acquisition and knowledge sharing ensured that the overall SDM model was well-adapted to the needs of each region, always considering the template model as the basis for modifications and within the possibilities and resources available, and that each regional model was ultimately conducive to effective scenario planning. The only exception to his scheme of work was Flanders. Due to the differences between the assumptions of the model and the local reality of the area, a brand new small model was agreed on to address specifically the land use issue.

[6] https://polirural.eu/wp-content/uploads/2022/02/D1.8..pdf

[7] These are PoliRural partners who manage the regional pilots in cooperation with their stakeholders

The end result is a model with a dual property. On the one hand, the model is quantitative to the extent that it uses statistical input to generate visuals in the form of charts and tables. On the other hand, it provides qualitative insights on local reality, showing how it might evolve under different policies and drivers of change.

Almost all regions benefited from an SDM model. The only exception is the Mazowieckie pilot in Poland, for which the model could not be built due to lack of data. As to the usefulness and accuracy of 11 models, this information was still being collected at the time of writing. An upcoming deliverable D5.5 A Dynamic Rural Development Model should fill this gap by presenting stakeholder feedback on SDM results. We, for our part, will just cross-examine methodologies for collecting user feedback (those that were planned against those that were implemented) at the end of the chapter. As to next steps, before reviewing how impact simulations were conducted, we would like to spend some time discussing new elements of scenario building that weren't part of the original framework, but which were added as part of general guidance intended to help pilots prepare for SDM trials. The two elements concern 1) the creation of a statement of expectations regarding SDM, and 2) operationalisation of policy scenarios in terms of control and performance parameters.

Statement of expectations

Before SDM trials could start, SDM experts wanted to get a sense of how pilots intend to use the newly built SDM web tool (SDT).[8] This was done to assess whether SDT meets user requirements and to advise pilots on how to extract maximum value from the planned SDM experiment. In addition, the purpose of collecting expectations before the trial is to compare them with the results ex post to determine if the trial was successful overall. A standard data collection form was sent to all pilots except Poland, with questions about the

- ***Model:*** Are there any difficulties in understanding the model? Does the regional model require any modifications? What datasets are needed to run the model?
- ***SDM trial:*** What do pilots expect to get from the trial? What policy challenges do they intend to explore? How will stakeholders be involved?

At a high level, SDM models are generally well understood. However some teams have expressed concerns about the underlying rules influencing system dynamics in the base model. They worry about the potential bias in the way model variables were selected and the fact that, for some variables, good quality data may be hard to obtain. Apulia, for example, reported that due to lack of data, the model was unable to provide a clear picture of the regional socioeconomic dynamics and how they might play out in the future. The team in HAME pointed out that rules governing system dynamics were set based on a

[8] https://polirural-sdm.avinet.no/client/login

subjective assessment of the situation, and therefore carried a potential bias. The team in Vidzem, for its part, expressed concerns that links between data and assumptions in the base model were not always clear. For instance, what made graph lines go up and down? When and how were different trends and factors taken into account e.g. legislation, global events?

To address these concerns, SDM experts organised additional sessions with the regional teams to better explain the model and help them find a solution to the problem of missing data e.g. by using proxy datasets and imputation techniques. In general, datasets used to run the models are socioeconomic in nature and come from a variety of sources e.g. national and regional statistical offices, open data portals, websites of organisations specialising in rural and regional development. Some data powering the model is based on experts' opinions. This is especially the case with variables for which no statistical information exists or can easily be found e.g. rural retention capacity.

Many pilots proceeded with the trial without requesting any changes to the model. But some did. The Flemish pilot, for example, requested that the baseline model be recalibrated according to agricultural land use dynamics, as opposed to the socio-economic dynamics that had been included originally, because of the pilot's focus on landscape revitalisation. The Finnish pilot asked for a new age group to be added (21-40 year olds) as this was their priority demographic for policy scenarios.

The foresight pilots see SDM trial as an opportunity to better understand the regional system and how it works from within. By revealing linkages between different system modules, between inputs and outputs, there is an expectation that SDM will provide a powerful insight into the way the system operates and the way it can be influenced through endogenous and exogenous drivers of change. SDM results are expected to lead to improved action plans, whose implementation can, in turn, make rural regions more resilient and prosperous. In addition, some teams think SDM can make rural policy-making more data driven, and some believe it's a useful tool for comparing regions that have similar challenges/goals.

Although policy challenges vary from pilot to pilot, the need to attract and retain young talent is a common thread found in almost all regions. The only exception is Flanders, whose focus on natural capital led to a particular choice of issues to be addressed e.g. landscape fragmentation, soil sealing, biodiversity loss. Everywhere else, however, youth issues are usually considered alongside other needs e.g. the need to improve inter-LAG cooperation (Italy), the need to improve policy support for rural innovations (North Macedonia), the need to implement the SMART concept (Czech Republic).

Stakeholder participation in SDM trials was meant to happen over several iterations, with different events foreseen for scenario development, SDT training and results validation. Participants provided input throughout the whole process, but as regards SDM results, these were assessed using a special set of questions at workshops conducted in April 2022. Stakeholder feedback regarding impact was still being processed when this deliverable was being prepared. So, for that reason, we'll just compare the overall approach to impact validation, by reviewing DoA ideas with actual questions asked during workshops (see the final section 'impact validation' of this chapter). Readers looking to find out more about actual results should wait until June 2022, which is when D5.5 will be published.

Operationalising policy scenarios

Before pilots could use SDT to simulate policy scenarios, the latter had to be operationalised in terms of control and performance parameters. Control parameters are input variables whose values can be adjusted to stimulate desired changes in the system. Performance parameters are output variables that reflect these changes through a range of indicators (social, natural, economic). Foresight pilots had to select a dozen or so parameters to explore policy issues and select an optimal policy mix to address them. We will illustrate these scenarios with a few examples before turning our attention to the web environment in which they were simulated.

- ***North Macedonia:*** The pilot in Gevgelija-Strumica has several goals, one of them is to improve financial support for entrepreneurship. Measures that may help achieve that include supporting economic operations of the rural youth and increasing subsidies for young farmers. This is expected to lead to new agricultural start-ups, more rural jobs, and more beneficiaries of income support.
- ***Finland:*** The pilot in Hame wants to increase the number of working young adults (those aged 21-40) in the Hame region. To that end, a policy mix was proposed comprising measures aimed at increasing the number of vocational training students, university students and remote workers, as well as measures focusing on targeted business development. If successful, this would lead to i) more people living, studying and working in the rural regions of Hame, ii) more employees in key sectors of the regional economy, including food production, bioeconomy, circular economy, digital innovation, health and well-being, and tourism, and iii) a greater share of the workforce in the overall working age population.
- ***Italy:*** The pilot in Apulia wants to make the region more attractive for young people and new entrants. Its policy mix includes measures aimed at boosting the number of remote workers, VET students and university graduates. The expected outcome is an increase in the number of young people living and studying in the region, a more vibrant tourism sector, and a higher rate of labour force participation.

After the pilots a) defined their scenarios in accordance with the vision and policy challenges outlined in the foresight package and b) operationalised them in terms of control and performance parameters, the SDM team made some adjustments to SDT to prepare it for impact simulations.

Impact simulations

According to DoA, the impact of policy scenarios had to be simulated in a web environment that offers advanced modelling capability but at the same time is easy for non-experts to use. PoliRural is not meant to create a new SDM tool that would rival existing market leaders e.g. Stella, Vensim, NetLogo. Instead, the goal is to reuse and leverage existing solutions as much as possible, to minimise development effort and keep the main focus on rural foresight. In addition, PoliRural's SDT must support pilots at a special stage in Future Regional Outlook yet be broad enough to be conducive to exploitation by new actors in different contexts post-project.

The tool that was ultimately built is based on the PoliRural SDM edition 4 and its different pilot-specific variations i.e. Local Customised Models. The base model reproduces the main dynamics of a generic rural area in Europe. It is made up of eight modules that, between them, contain roughly 300 parameters on population, education, quality of life, agriculture, natural capital, employment, rural attractiveness, and rural retention capacity. The base model therefore serves as a useful template for adapting pilot models to the local reality. Both base and customised models were authored in Stella but eventually transferred to an open source framework to meet exploitation requirements.

When foresight teams simulate policy scenarios, they do so based on a model that has been customised to absorb the specifics of their region, as this yields more accurate results and representations of local dynamics. Using the SDT tool, foresight teams can see how general trends may play out locally. They can correct unwanted trends or achieve desired ones by tweaking policy interventions until an optimal mix is reached. Control and performance parameters selected during scenario building were made available in SDT to help foresight teams determine which policy mixes deliver best results for their rural area and people. As partners in these teams generally have no prior knowledge of SDM, special training sessions were provided by SDM experts Avinet and 22Sistema in April 2022. Having completed the training, local teams started working with the customised model, first alone and then together with rural stakeholders, to explore different policy options and select those with the best potential to improve a region's performance.

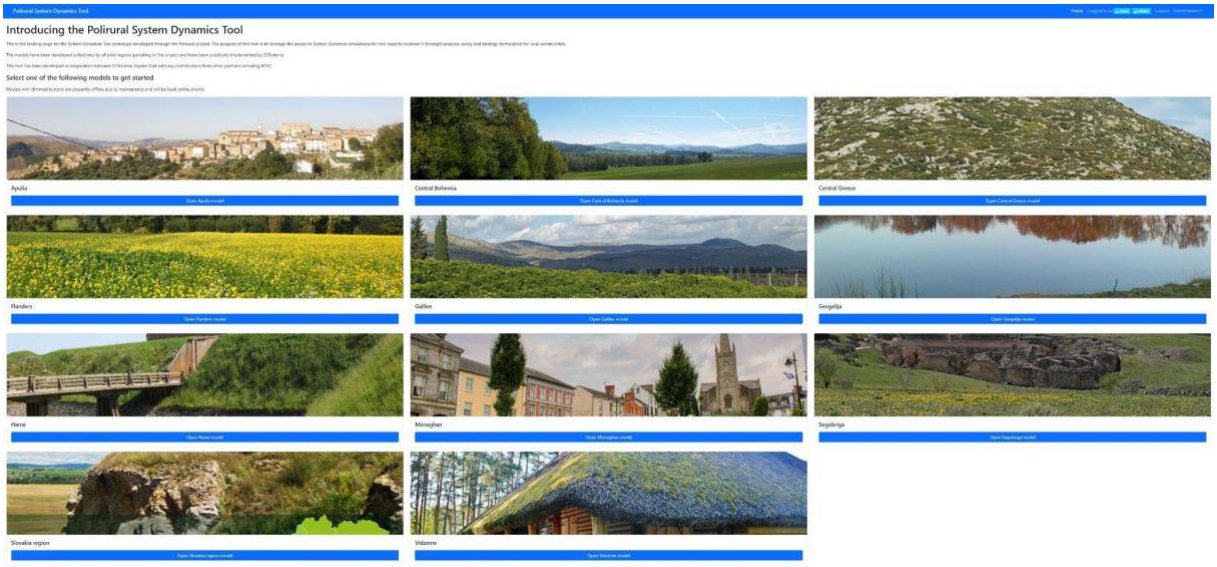

Figure 2. SDT landing page with 11 customised models

In the web user interface for the SDT, users can build simplified profiles on top of their system dynamics models that allow the end-user to modify a curated subset of more than 300 parameters that the model uses for its simulation. The selected parameters should reflect policy, regulatory and investment measures that the rural authority can realistically have an impact on and that is within their mandate.

Once this has been done, the simulation can be run using different scenarios for future policy measures, investments etc. In the case of Vidzeme, for example, user configurable parameters to the simulation include the implementation of CAP eco-schemes, investment in entrepreneurship, the number of university and VET students, the number of newcomers, and broadband coverage. The next step is to run the model to see how inputs affect performance indicators e.g. working age population, total rural population, jobs in agriculture, industry, services and tourism.

The results are displayed in a visual (line chart) and tabular format. The table provides absolute numerical values associated with each performance indicator for each time step (the model outputs data quarterly from 2022 to 2040), and can be downloaded in Excel format for further processing. The line charts depict trends over time, distinguishing between the ‘current’ scenario (the result of the simulation using the current user-specified parameters)) and the ‘comparison’ scenario (the baseline scenario, i.e. business as usual).

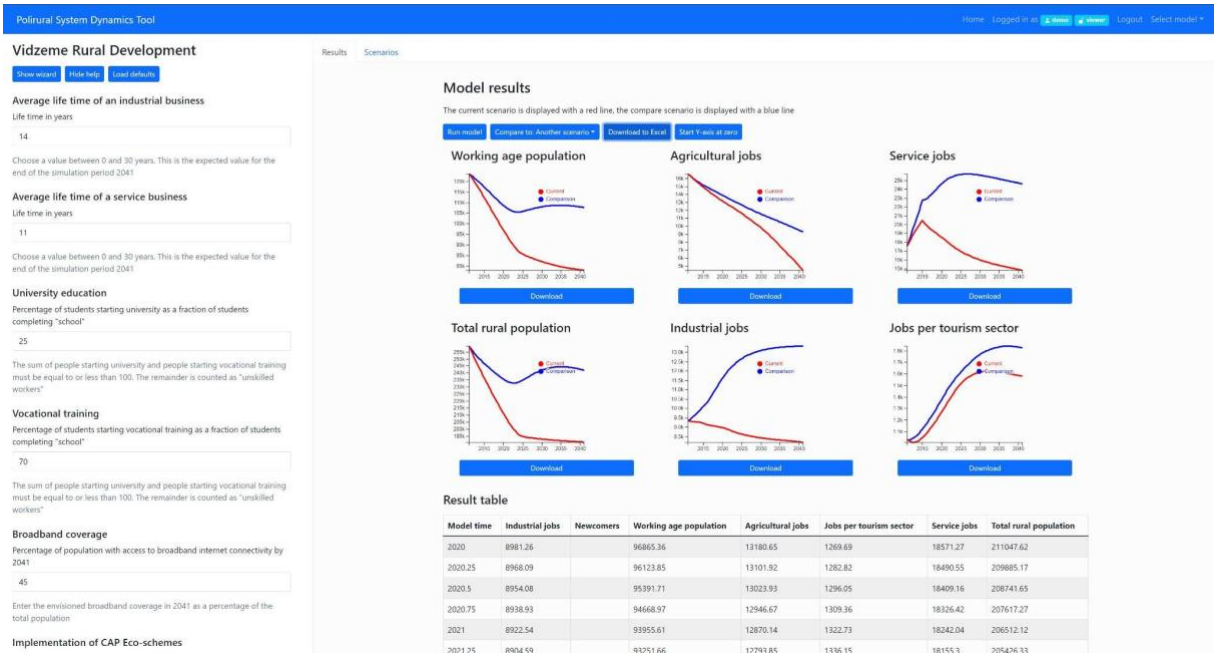

Figure 3. Simulation results for the Vidzeme region

The SDT is not a very complex application to use. That being said, the SDT is an entirely new entrant in the toolchest of collaborative policy development. The training sessions provided to pilots have facilitated the introduction of the tool into their mindsets and working processes and the pilots will play an important role as ambassadors for the tool's further uptake by users external to the project.

It is our assessment that the SDT has a tangible potential to support non-experts involved in foresight analysis, as well as policy and strategy formulation for rural communities. There is strong sustainability potential, too. The use of open standards means that SDT can be integrated with third-party systems and services (e.g. GIS) to unlock additional insights from data. The base model can be customised to meet the requirements of new rural regions. The technology and know-how developed/gained during the project can be leveraged to offer training services to introduce planners and analysts in fields other than rural foresight to the logic and benefits of SDM. All these pathways will be elaborated in the upcoming business plan deliverable (D7.11), by which point we will know if, after trials, people deemed the tool 70% useful and 90% accurate. As these results are still being compiled, the next section will just review the methodology for impact validation against the initial framework conditions.

Impact validation

The main requirement for impact validation in the context of SDM is that SDT outputs have to be evaluated in cooperation with stakeholders. In other words, it's not enough for local teams managing the foresight pilots to give their opinion. They should also seek opinions

from people outside the consortium (i.e. stakeholders) to assess validity, accuracy and usefulness of policy simulations. This type of output validation was proposed in the framework due to the highly multidisciplinary nature of PoliRural's SDM models and process. Typically, dynamic simulation models are output validated by comparing modelling results with past trends for selected variables. But given the complexity of the base model and the way customised models were built, such output validation would be extremely difficult to achieve. The framework therefore reduced the question of validation to whether SDM results are credible/adequate for intended use.

In the project, this was achieved by documenting SDM results in a trial report. These reports are currently in progress, but will contain two parts. One is a reflection from the pilot team on the conducted experiment, another is a summary of feedback from stakeholders that partook in the process.

Feedback from the pilot team covers these questions:

- Were trials carried out as planned? If not, what changed compared to the initial expectations?
- How many people took part in the end?
- What did participants learn from the trial?
- What changes can help improve the model and SDT?

Feedback from local stakeholders was collected by way of a questionnaire circulated at the end of the validation workshop. The aim was to find out if, and to what extent, SDT results capture the complexity of rural dynamics, promote dialogue among stakeholders, identify threats and opportunities, and enable policy actors to make informed decisions by providing actionable insights. Questions to establish that include:

- Did participants find the exercise useful and the tool easy to use?
- Was the customised model easy to understand?
- What kind of new insights, if any, were gained from working with the model?
- Did use of the model and tool have any impact on people's perception of challenges, on their decision making with respect to policy options or policy mixes?
- What advice or recommendations do stakeholders have for the future development of the model and tool?

Table 1. Review of Future Regional Outlook

Original framework	**Actual implementation**
• Scenario not defined	• Scenario defined as a policy scenario

• SDM trial not defined • 12 SDM models available • SDT Open Source and sustainable • SDM usefulness 70% • SDM accuracy 90%	• SDM trial requires statement of expectations and operationalisation of policy scenarios • 11 SDM models available (N/A for Poland) • SDT OS and has several exploitation pathways • Usefulness results N/A • Accuracy results N/A

Mission Oriented Innovation

Mission design

The framework describes missions as mission-oriented policies that PoliRural foresight pilots would design in order to make rural regions more attractive. The framework does not specify which missions the policies should be oriented towards, only stating that missions should be bold and ambitious, and focus on a well-defined problem or challenge. The framework is also ambiguous on the kind of policies needed to support mission oriented innovation. Depending on a challenge being addressed, different instruments can be considered, from research and innovation projects to legislative interventions.

When the Mission Oriented Innovation stage started (WP6), PoliRural had to decide what missions the pilots should focus on in their action plans. After some deliberation, partners agreed on the following four:

- Achieving a just transition to net zero by 2050 (the European Green Deal)
- Recovering from the pandemic and improving the resilience of the regions
- Implementing a new model of agriculture in Europe (post-carbon, CAP reform)
- Implementing a biodiversity-based model of sustainability

These four missions are related to the five Horizon missions, but are not the same. 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. So, missions used to align pilots' action plans are not Horizon missions but high-level policy missions linked to major legislative instruments and strategies.

These four policy missions are closely related and have been formulated at EU level. They are implemented by member states, with each country following its own strategy. It is not clear how these missions will be implemented at regional level. Arguably more progress has been made at city level, but not for rural regions. This is a challenge and at the same time an

opportunity for PoliRural to add rural meaning to high-level EU missions. So, after the foresight pilots examined how the four missions cascade to the national and regional level, the next step was to integrate the rural interpretation of these missions into the foresight package, and in so doing demonstrate a clear link between the action plan and the EU's priority areas.

In January 2022 the first iteration of the foresight package was prepared. There, pilots described which EU missions they plan to influence through local/regional measures, and how. The table below shows how many action plans (out of 12) mention specific missions, and how many of these action plans credibly describe the means to do so.

Table 2. Pilot contributions to EU missions

EU mission	Number of APs claiming to contribute to the mission	Number of APs able to describe how exactly they will contribute
Green Deal	11	7
Covid-19	9	5
CAP reform	7	3
Biodiversity	10	6

As can be seen from the breakdown, pilots weren't always able to demonstrate how exactly they intend to contribute to the selected mission. In many cases, these were just declarative statements not substantiated with any specific measures. Furthermore, few teams acknowledged unforeseen risks and challenges (e.g. difference in scale between EU missions and interventions they were planning locally) that may hamper design of mission-oriented policies and their subsequent implementation.

To address these shortcomings, a list of general recommendations was issued by VPR. This was followed by a one-on-one coaching session with CKA. The sessions focused on general improvements to the action plan, including how to improve alignment with EU missions. The main recommendation is that rather than trying to influence all missions at once, pilots should narrow the focus on those missions that have the best fit with their vision and action plan, and that can be realistically addressed taking into account institutional capacity, funding opportunities, and regional specialisation. In addition, pilots need to provide a more thorough analysis and description of pathways through which they plan to influence a selected mission. To support them in this endeavour, several internal and official deliverables were produced in recent months. These include a collection of deep-dive guides

(on CAP reform, Covid-19, Green Deal) and an official deliverable D1.10 Regional Recommendations.

A deep-dive guide on CAP reform: This guide is designed to help PoliRural pilots address the issue of CAP reform based on specific needs of their region. It starts with an overview of CAP objectives, concepts and changes that will come into effect post-2023. The guide then delves deeper into three specific issues that merit a closer examination by each regional team: farmers' income, farmers' position in the value chain, and vitality of rural economies. Crucially, the guide encourages regions to play a more proactive role in the formulation of CAP policy, making sure that their interests are adequately represented in the national strategic plans, and that all options for financing of initiatives that are in their interest are adequately explored and exploited.

A deep-dive guide on Covid-19: The document was the first in a series of four guides on key issues and policy developments that are unfolding in Europe and that rural regions must address if they are to achieve a desirable level of prosperity in the future. The document first explains the main principles and steps of the deep dive methodology, before highlighting key impacts linked to the pandemic that warrant closer examination by each region. These include territorial readiness for disruption and recovery; Covid-19's impact on individual health and daily life; impact on public services, work and employment; impact on personal budgets and household incomes; impact on sectors, businesses, cooperatives and the self-employed; and a myriad of changes ushered in by the pandemic, some of which are temporary, some permanent, some structural. This guide, as well as other guides, were used by pilots to explore how specific issues affect their region, and what the best response strategy might be.

A deep-dive guide on the Green Deal: The guide sets the general context for the Green Deal by providing an overview of key milestones, objectives, action areas, supporting mechanisms, funding opportunities, and grassroot adaptations of the Green Deal, the so-called Local Green Deals (LGDs). Ways to get started on LGDs are illustrated with concrete examples from energy, building renovation, and transport. The guide concludes with a brief overview of funding mechanisms, most of which are elaborated in the Sources of Finance deliverable.

D1.10 Regional Recommendations: This is an official deliverable prepared with a clear goal of helping regional teams align their action plans with high-level missions pursued by the EU. After critically examining the concept of mission orientation, it turns 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). The report concludes with a set of recommendations that are really an invitation for PoliRural teams 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 rollout

The framework does not say when or how mission oriented policies should be rolled out. The main requirement is that by the end of the project at least 12 new measures are considered for implementation in participating regions. In PoliRural, 'mission rollout' will be regulated by an element of the foresight package known as roadmap. The role of a roadmap is to indicate the phasing of measures, assign responsibility for ensuring their delivery, and provide a good basis for monitoring progress over time. The roadmap is closely linked to other elements of the foresight package and includes

- List of measures to be implemented
- Sources of funding to be tapped
- Parties responsible for implementation
- A timeline for implementation

It's trite but true that different policy challenges will require a different set of measures that will need to be phased in at different stages. In Hame, for example, measures aimed at securing RDI funding for rural businesses in bio and circular economy are foreseen for 2022-2027, those at developing a data-based visualisation system for policy monitoring are foreseen for 2025-2027, those at updating stakeholder roles in rural governance are foreseen for 2027-2034. In Latvia, measures to develop clusters and thematic networks in Vidzeme RIS3 areas will commence in 2022 with a planned end date of 2029; measures to create a list of NGO-public sector cooperation initiatives will commence in 2023 with a planned end date of 2027.

One important consideration linked to the mission rollout is monitoring. By the end of the project (September 2022), each pilot is expected to have a functioning monitoring body to track the implementation of mission oriented policies. This body will have clearly defined roles and responsibilities as regards data collection, management, analysis and dissemination. Once the monitoring body becomes operational, its activities may expand beyond the original scope. So, as well as tracking progress, it may help identify emerging trends or areas of concern to a rural area that warrant attention. Eventually, it may help with the formulation of new or revised actions to address policy issues that need to be tackled in order to achieve EU missions.

At the time of writing this deliverable, monitoring committees were still being formed and no measures had been introduced as part of Mission Oriented Innovation. This has implications for impact assessments envisaged by the framework.

Impact assessment

The framework foresees two impact assessment exercises during the project: ex ante (D6.1) and ex durante (D6.3). The idea of measuring impact twice, according to DoA, is to identify possible positive changes in the performance of rural areas that may be attributed to the project. This is an ambitious goal given that policy impact normally takes many years to accrue, while the gap between D6.1 and D6.3 is just eight months. Moreover, it's unlikely that any pilot will be able to 'roll out a mission' by the time ex durante assessment is due, so from the perspective of impact assessment, the second evaluation exercise is a bit pointless as there will be no new policies nor will there be any impact to measure. To address this issue, D6.3 needs to be reinterpreted, from an exercise that tries to evaluate action plan measures introduced during the project (a highly unlikely scenario), to the third iteration of action plan development that started with D6.1 and evolved through D6.2 and D6.3.

From a pilot perspective, ex durante should be seen as an opportunity to further improve their action plans before the post-funding phase kicks-in, using the same framework as in D6.1. In the short time that foresight teams have until D6.3, priority should be given to weak spots identified by an ex ante evaluation. The main ones concern human resources, financial resources, and target values for performance indicators.

Human resources: Sometimes, when describing the required human resources necessary for implementing an action plan, pilots only provided the institution's name, the profile of the institution (e.g. ministry) or a thematic group e.g. educational institutions. And sometimes there was no information at all about the required human resources. Pilots should clarify who will do specific tasks, who will oversee them, and how much time and personnel is needed for each one, to make their action plans more credible.

Financial resources: Although most pilots provided information on sources of finance, there are a lot of oversimplifications, assumptions, and rough estimates. This is fine for the first iteration, when incomplete information can still be useful to stimulate a discussion with stakeholders, on the basis of which budgets can be scaled up or down, new sources identified, and existing ones explored in more detail. But in the final iteration, all sources and amounts should be as specific as possible. One useful internal deliverable to consider in this regard is the *Sources of Finance.* It covers more than 40 funding instruments for regional actors to explore when trying to mobilise funds for different policy initiatives. Documented

are programs at regional, national and European levels that support a vast array of activities, from feasibility studies, to training, to capital-intensive projects.

Target values for performance indicators: A common issue encountered in the first iteration is the lack of justification for choosing future target values. It is unclear why pilots determined a particular increase or decrease compared to the baseline values. Often there is little or no context provided as to why a particular value was chosen e.g. how does this value correlate with the national or EU average? Is this value chosen cautiously or very ambitiously? There is a clear need for more methodological support to help pilots develop a more robust set of indicators for the third iteration. This will be the focus of discussions between the evaluation, foresight and SDM teams over the coming weeks.

Table 3. Review of Mission Oriented Innovation

Original framework	Actual implementation
• EU missions not defined • No specific guidance on how to align policies with missions • Rollout of MO policies expected by end of project • Ex ante evaluation should capture impact, however small, in rural performance that can be attributed to the project	• 4 EU missions selected: CAP reform, Green Deal, Biodiversity, recovery from Covid-19 • Guidance provided in the form of deep dive guides and official project deliverables • MO policies unlikely to be rolled out by end of project in participating regions • Ex ante evaluation reinterpreted and now means 3rd iteration of AP development that will address previous shortcomings regarding resources and KPIs

Conclusion

This deliverable reviewed developments in stages two and three of the PoliRural framework: Future Regional Outlook and Mission Oriented Innovation. Overall, activities implemented since the last review are broadly in line with activities outlined in DoA. In some works streams (e.g. scenario building), new elements were added to fill gaps and make general guidance provided in the framework more concrete. In others, old elements (e.g. ex durante) had to be reinterpreted taking into account the current state of play.

Progress in all work streams was ongoing at the time of writing D1.12. This means that some results were still being collected and therefore couldn't be used to assess whether a particular task met the objectives set out in DoA. Though not included in this deliverable, interested readers will still be able to learn about these results from upcoming deliverables D5.5, D6.2 and D6.3.

In the next few months, work will proceed on multiple fronts. Pilots will continue refining their action plans, addressing weak points identified in the first evaluation (i.e. issues related to human resources, financial resources, and KPIs) and any new recommendations to come out of D5.5 and D6.2. The SDM team will continue supporting pilots as they experiment with the tool to select an optimal set of measures for their mission-oriented policies. The evaluation team, for its part, will continue supporting pilots right until the ex durante assessment, to ensure that policy mixes introduced in the final version of the action plan are rigorous enough to be conducive to a successful rollout post-project.

All the changes that took place and have yet to take place allow us to make adjustments to the foresight framework piloted by PoliRural, making it more robust, apt and relevant. The framework is not just an academic concept described on paper; our foresight approach has been tested over several iterations in 12 regions from different geographic, political and socioeconomic contexts.

Foresight pilots act as an experimentation space for trialling analytical tools like SDM that so far have been underused in rural policy making. PoliRural's web tool and the base model on which it is built may not be perfect, but they represent an important starting point for a new discussion among rural stakeholders about their region, its needs and assets, aspirations for the future and ways to get there. Thus, SDM plays an important role in the creation of rural outlooks. These are visions of the future that each of the 12 pilots will try to achieve by implementing mission-oriented policies in line with priorities set at regional, national and EU levels.

SDM has huge potential to revolutionise rural policy making. But as our experience has shown, data needed to power the models is often missing or incomplete. A rural observatory to be set up by the European Commission as part of the Long-Term Vision for Rural Areas can address the existing information gap and help the model-assisted scenario planning for rural areas become mainstream.

Finally, PoliRural's foresight framework, SDM tool and mission oriented approach will be explained in detail in a series of webinars scheduled for June and July 2022. Presenting at these events will subject matter experts that have guided the project through all three stages, and pilot teams that followed this guidance to effect rural change on the ground. More information on the upcoming events will be published on the PoliRural website (https://polirural.eu/).