



# UNISECO

## UNDERSTANDING & IMPROVING THE SUSTAINABILITY OF AGRO-ECOLOGICAL FARMING SYSTEMS IN THE EU

### Deliverable Report D5.4

### Annex 1 - Case Study Summaries

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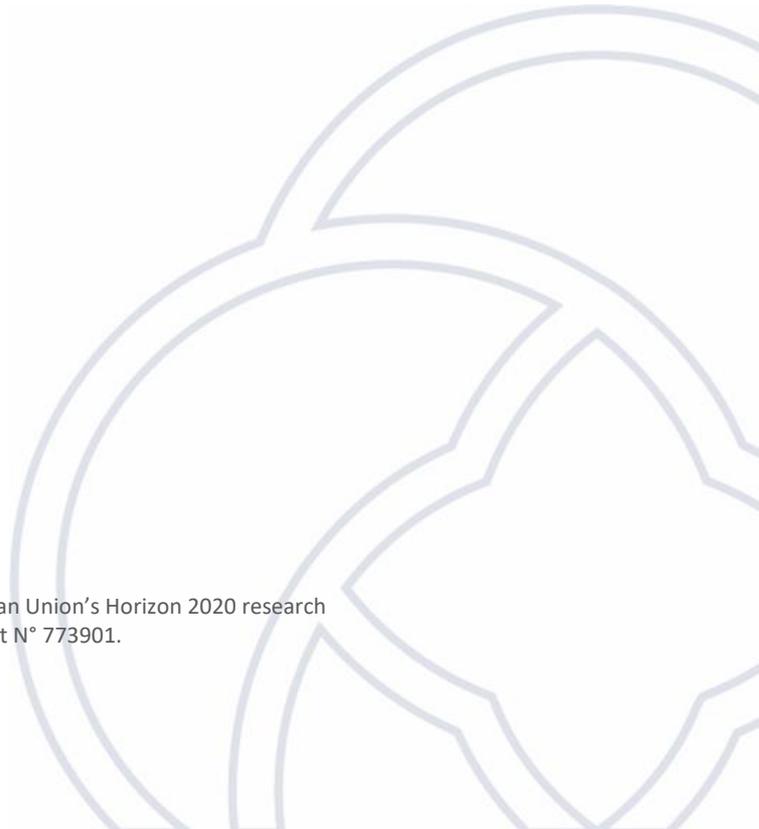


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## CASE STUDY SUMMARIES

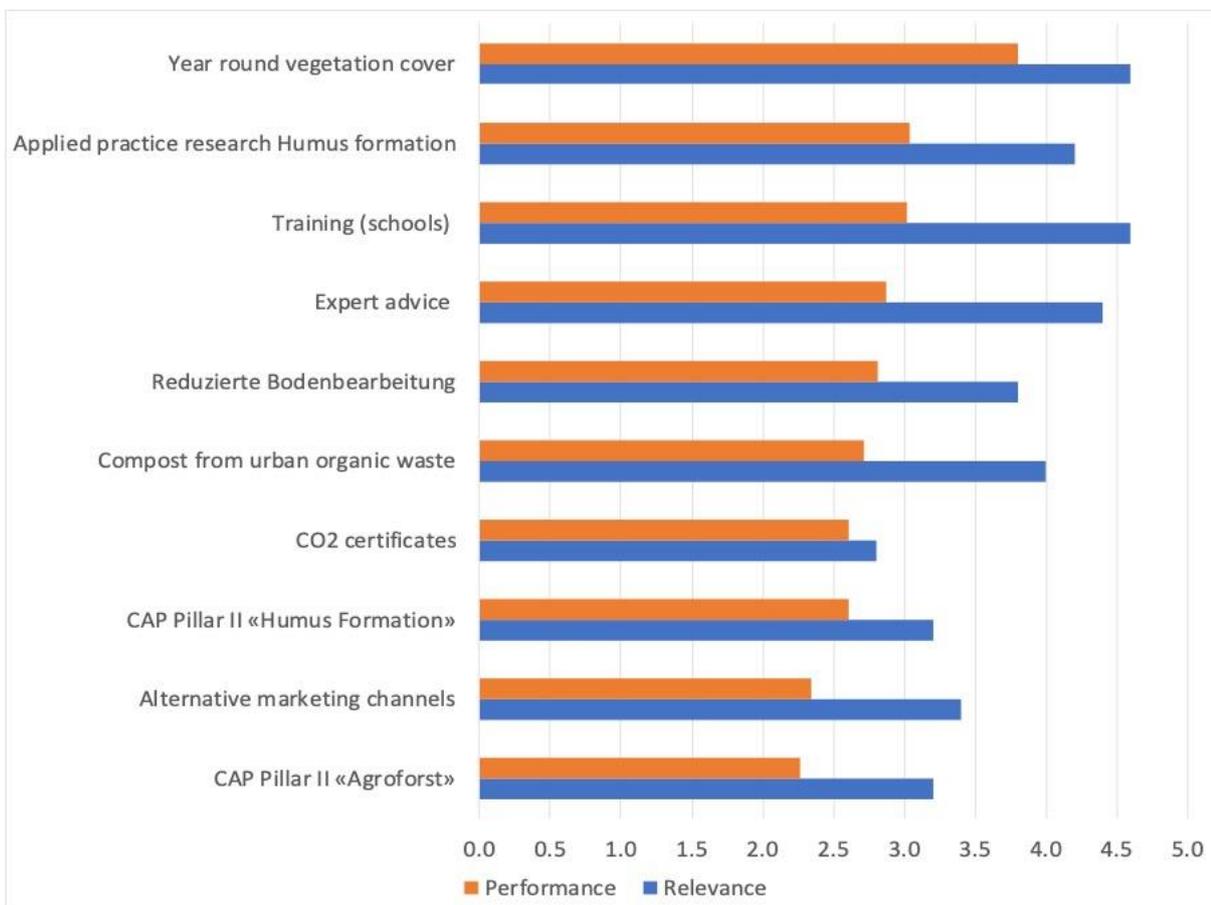
Deliverable D5.4 reports on the participatory evaluation of innovative market and policy instruments (MPIs) to support agro-ecological transitions in the 15 UNISECO case studies. This document (Annex 1 of Deliverable D5.4) provides concise overview of the results of the multicriteria assessment and qualitative analysis of MPIs done in each case study.



# 1. MITIGATION OF CLIMATE CHANGE BY HUMUS FORMATION IN ARABLE FARMING (ÖKOREGION KAINDORF, AUSTRIA)

**KEY DILEMMA:** HOW TO TACKLE IMPACTS FROM CLIMATE CHANGE (E.G., INCREASING WATER STRESS), INCREASE CARBON SEQUESTRATION IN SOILS, PREVENT SOIL DEGRADATION AND REDUCE SOIL FERTILITY LOSS FROM ARABLE LAND WHILE MAINTAINING OR IMPROVING THE FARM'S SOCIAL AND ECONOMIC SUSTAINABILITY AND CONTRIBUTING TO CLIMATE CHANGE MITIGATION.

**Performance and relevance of MPis** – The MPI “Year-round vegetation cover” peaks with a clearly positive rating in terms of performance (Figure 1). Regarding relevance, there seems to be absolute agreement about the urgent redesign of medium to long-term local, state or EU policy strategies that have direct and indirect effects on AE systems and farm economics, such as the development of highly specified CAP Pillar 2 measures “humus formation” and “agroforestry” as well as either private or state-operated CO<sub>2</sub> certificates.



**FIGURE 1 – MPI RANKING OF THE AUSTRIAN CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

**Potential for innovation** – Many of the on-field MPis are partly implemented but can be implemented additionally quickly and have a high level of efficiency and accuracy regarding the

objectives presented here. In addition, there are many synergies regarding other sustainability goals, such as water and climate protection. However, especially with winter greenery, there can be considerable trade-offs if the measures lead to a higher use of pesticides. For some of the experts interviewed, the on-field measures are not effective but very relevant to implement quickly and across the board to achieve an economically sustainable, environmentally friendly, and climate-resilient agriculture.

**Governance and implementation challenges** – A combination of these discussed measures is also necessary, but possibly not yet sufficient for agro-ecological and climate-resilient agriculture in eastern Austria. In addition to improving the subject-specific training and providing systemic agro-ecological advice, there are also incentives that can be set by politics. This can be accompanied and flanked by subsidies for on-field practices, even more targeted measures in Pillar 2 (ÖPUL), tax increases and decreases, AE innovation programs, higher minimum standards, and a change in the price policy for agri-ecological food and much more. The CAP Pillar 1, which is barely going beyond minimum standards, is repeatedly mentioned as a fundamental challenge to gain widespread AE systems. Market mechanisms such as CO<sub>2</sub> certificates can also eliminate potentially high effectiveness, but they are viewed and assessed very controversially. A CO<sub>2</sub> pricing seems to be even easier among the experts - for all methodological questions that arise. Compared with CO<sub>2</sub> certificates, CO<sub>2</sub> pricing seems to be even easier to implement among the experts. Regarding the prices of food, the prices of those that have been produced organically and agro-ecologically should become cheaper.

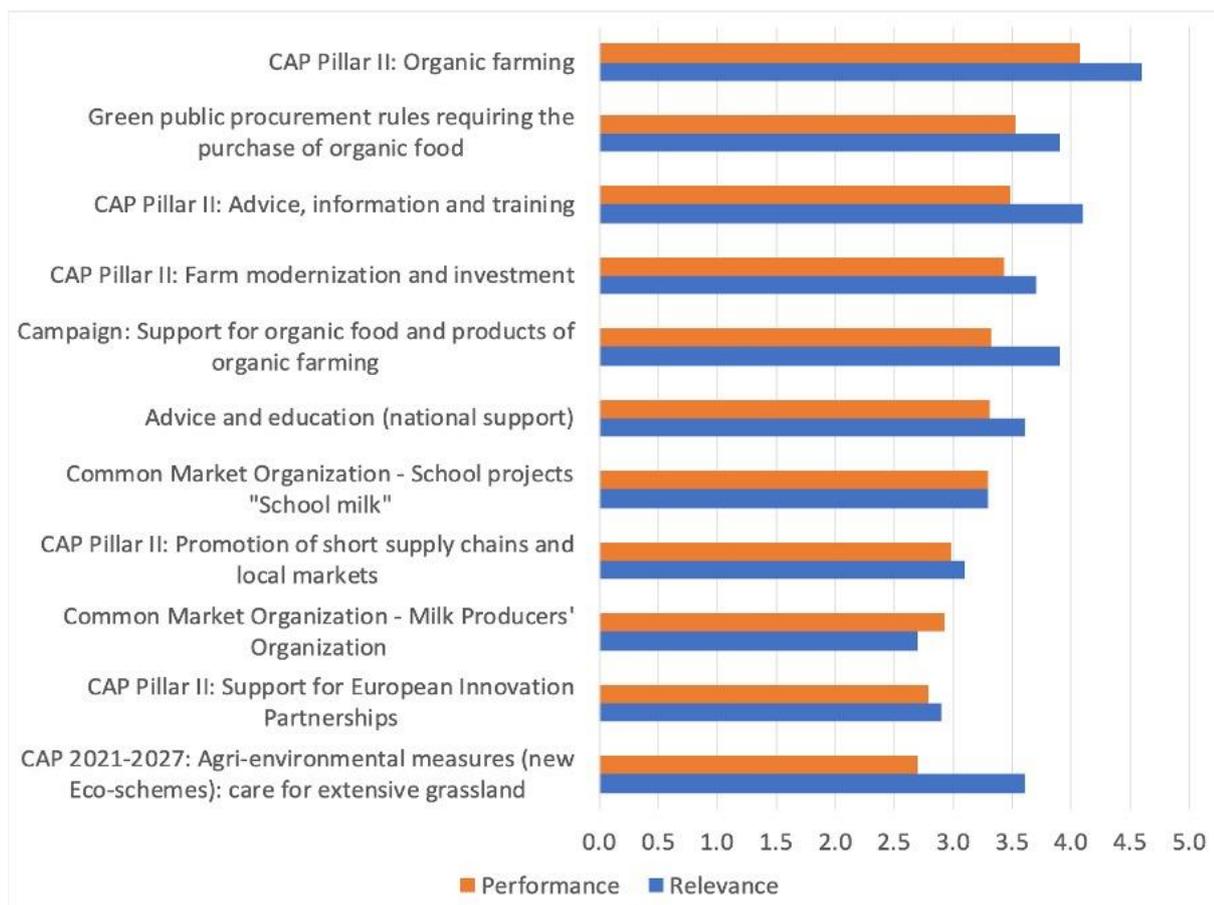
**Key opportunities brought by future policies** – All respondents agreed that the CAP could offer opportunities to address soil degradation and economic pressure on farmers. The EU's Green Deal, the Farm to Fork and biodiversity strategy are rated positively. These visionary strategies could help convert agriculture to more agroecological practices, reduce pesticides and improve biodiversity. The respondents agreed that a transfer of knowledge and experience is necessary. In addition to improving specific training and systemic agroecological advice, there are also incentives that can be set by politicians. These incentives include subsidies on-field practices, even more targeted measures in the CAP pillar 2 (ÖPUL), agroecological innovation programs, higher minimum standards, and a change in the price policy for food.



## 2. ARABLE LAND MANAGEMENT ON ORGANIC DAIRY FARMS (VYSOČINA REGION, CZECHIA)

**KEY DILEMMA: HOW TO MAINTAIN THE GOOD PERFORMANCE OF ARABLE LAND MANAGEMENT IN ORGANIC DAIRY FARMS IN VYSOČINA REGION TO REDUCE ARABLE SOIL DEGRADATION AND WATER POLLUTION BY PESTICIDES WHILE ENSURING ECONOMIC VIABILITY.**

**Performance and relevance of MPIs (ranking)** – From performance point of view Organic farming (OF) area support appeared to be the best MPI, followed by Green public procurement (GPP), Advice, information and training and Investment support. The least performing MPIs were EIP support and Agri-environmental measure (especially care for extensive grassland). The relevance of each MPI followed similar pattern - OF support, Advice, information and training and GPP were on top (Figure 2).



**FIGURE 2 – MPI RANKING OF THE CZECH CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

The AECM (care for extensive grassland) showed higher relevance than performance. A higher difference between relevance and performance was also noted for Advice, information and training support, Campaign and OF area support, indicating the potential for improving the conditions and implementation of these MPIs.

**Potential for innovation** – The most innovative MPIs were regarded advisory service which is going to be newly supported under RDP and Green public procurement. Support of advice provision under RDP (envisaged) is seen as innovative because it is going to be newly implemented with different governance (newly designed certification system) and with new schemes (e.g., whole farm plan design for conversion to OF). Green public procurement is a completely new tool in CZ, which (if adopted) will require mandatory purchase of 5 % of organic food from 2023.

**Governance and implementation challenges** – Support of advice provision under RDP (envisaged): to have effective measure the administration should be acceptable (e.g., simple accreditation process) and newly built whole delivery system (new measure). There should be a system ensuring the quality of advice provision and the measure should be well targeted. What is crucial is to have sufficient advisors available and advisory tools. The whole advisory system should be built from scratch because it is not sufficient just to provide money, there is just a few advisors, and they are poorly organised. There should be established channels for the knowledge flows. There should be involved key actors including NGOs in the building the advisory system. Farmers do not recognise what they need and do not demand advice sufficiently. There should be support for design and development of advisory tools.

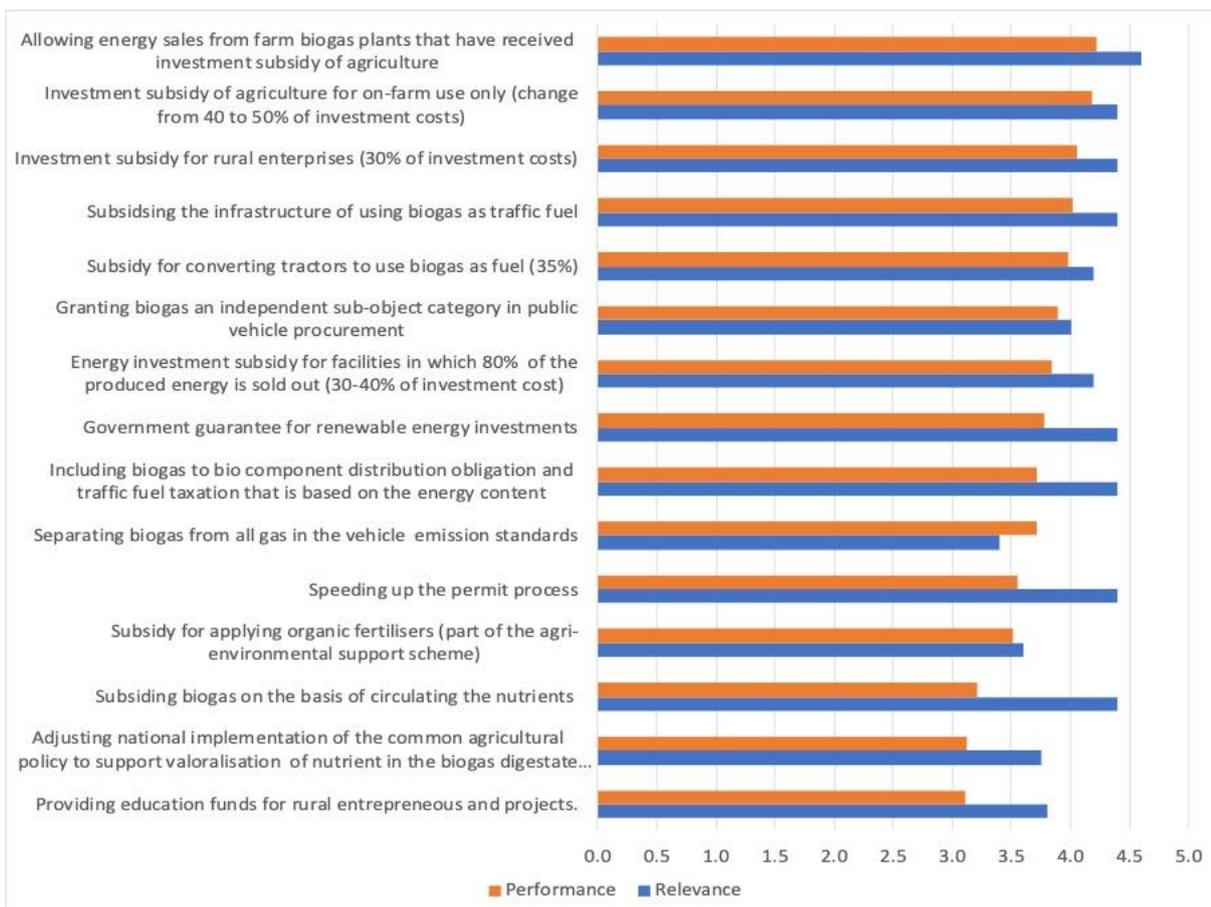
Green public procurement implementation needs amendments of different acts and decrees and great political will (under negotiations). Another condition is to transfer sufficient knowledge to canteens. The successful supply of produce to canteens needs cooperation of several actors to ensure stability/quality of supply and viable contracts behind. In addition, new control system is needed proving the compliance with the set of new criteria ensuring effectiveness of the measure. The new system would need relevant strategy supported by Ministry of Agriculture. Of course, sufficient budget is necessary to support whole implementation process.

**Key opportunities brought by future policies** – All interviewees agreed the CAP provides opportunities to deal with the dilemma. Provided subsidiarity gives large space to Member state for manoeuvre and it is likely on national level it will not be utilised in its full potential. But at least new strategies (e.g., F2F and Biodiversity strategy) triggered a lot of discussion and also it empowered NGOs to require some actions from Ministry of Agriculture. In the long term these strategies are promising because the EU level is the engine of these policy changes in favour of environment.

### 3. PLANNING A DAIRY SECTOR DRIVEN BIO-PRODUCT PLANT (NIVALA, FINLAND)

**KEY DILEMMA: HOW TO REDUCE HARMFUL CLIMATE, SOIL AND WATER IMPACTS OF DAIRY FARMING IN NIVALA REGION WITHOUT SACRIFICING ECONOMIC VIABILITY OF THE DAIRY SECTOR, BY MEANS OF ENVISIONING AND IMPLEMENTING A MULTIPURPOSE BIO-PRODUCT PLANT ALONG THE LINES OF CIRCULAR BIOECONOMY, WITH THE AIM OF PRODUCING BIOENERGY AND ORGANIC FERTILIZERS FROM MANURE.**

**Performance and relevance of MPis** – On a general level, MPI with high performances were accompanied by a high relevance score, except with a few exceptions (Figure 3). Most stakeholders agreed that the most effective and relevant MPI is to allow energy sales from farm biogas plants that have received investment subsidy of agriculture. This supports one of the case study key findings, where the electricity sale restrictions in the Finnish market were identified to be one of the main barriers for biogas investment and development.



**FIGURE 3 – MPI RANKING OF THE FINNISH CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

The participants also identified a set of subsidy measures of high relevance and performance that could enhance the biogas industry in the Finnish agriculture. By increasing the investment cost subsidy from 40 to 50% for on-farm biogas plants, more farmers would be attracted to biogas business. However, the established 30% investment subsidy for rural enterprises, which is targeted

non-farm biogas (towards limited liability companies and allows energy sales), was also considered to perform well.

**Potential for innovation** – The list of the most innovative policies (Appendix) corresponds with the short-list of important policies to a large degree. The policies directly favouring the emerging technologies for biofertilizer production were scoring very low in the poll for identifying the innovative policies. There is a wide variety of new policies in the pipeline affecting the biogas sector. It seems that the stakeholders want to prioritise the measures that have already been agreed at the national level and not to introduce new ones.

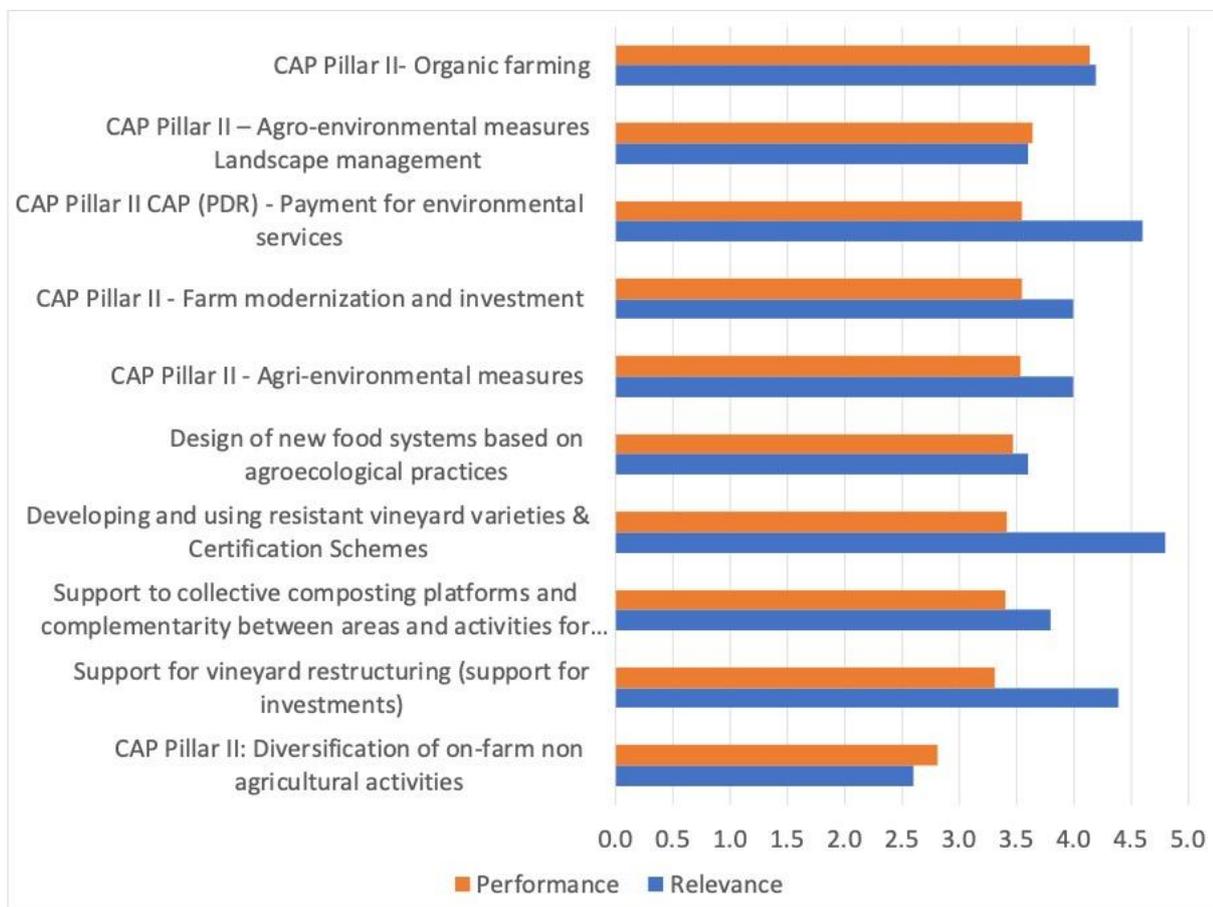
**Governance and implementation challenges** – The output market (both for biogas as traffic fuel and for biofertilizer) is still developing and highly dependent on political decisions on both the national and EU level. While several Finnish governments have been keen to support biogas, interpretation of some EU directives has been seen as a barrier limiting the national possibilities to increase the country's biogas production capacity. There are several measures in the biogas programme that are delayed, which is a sign of underlying difficulties in re-organising the economic incentives.

**Key opportunities brought by future policies** – The measures highlighted from the government biogas programme offer some insights on the connections of the case study to the EU level policies. Companies that receive significant subsidies from the national government gain an advantage, which EU controls by setting limits on how the companies can be subsidised. Also, the fuel use of biogas is subsidised since it is free from fuel taxes in Finland. In the Finnish biogas programme, biogas tax will be introduced, but on a lower level than fossil fuels due to exemption from CO<sub>2</sub> emission-based tax component. This is also a form of state aid subject to EU regulations and its implementation requires announcement to the EU commission. Since also the imported biogas can be exempt, the policy does not seem as distortive. Introducing taxes is presented as a measure paving the way for the inclusion of biogas to distribution obligation, which besides the state aid legislation is connected to the revision of the renewable energy directive (REDII). In the Finnish biocomponent market the dominant feedstock now is likely a palm-oil by-product. Its share is regarded as legally protected trade secret. While Finland is increasing the minimum amount of biocomponent to 34% to 40%, the implications on biogas demand depend on the production costs of competing biocomponents. Furthermore, the eligibility of the palm oil by-products as sustainable biofuels depends on the revision of the directive. Finland's neighbouring countries, Sweden and Norway, have now reversed their national stance on the sustainability of this palm oil by product, and the topic will be likely debated in EU. The implications on the domestic biogas demand could be very significant but drawing conclusions would require further information on the actual share palm oil derives, as well as, on prices of other competing biocomponents compared to biogas production costs.

## 4. CUMAS TO FOSTER THE ADOPTION OF AGRO-ECOLOGICAL PRACTICES FOR VITICULTURE (AUVERGNE-RHÔNE ALPES, FRANCE)

**KEY DILEMMA:** HOW TO REDUCE DEPENDENCY ON EXTERNAL FERTILISERS AND TO REDUCE PESTICIDES USE (ESPECIALLY GLYPHOSATE) THROUGH AGRO-ECOLOGICAL PRACTICES INCREASING SOIL ECOLOGICAL SERVICES (SOIL BIOLOGY) WHILE MAINTAINING THE ECONOMIC PROFITABILITY OF FARMS?

**Performance and relevance of MPis** - Figure 4 shows that organic farming maintenance payment is assessed by interviewees as being the instrument with the best performance in this case study, involving several French farm machinery cooperatives (CUMAs). This high score is related to the organic production rules that forbid the use of chemical inputs in the parcels and thus guarantee a limited impact on the environment. Relevance of the organic farming maintenance payment is also quite high.



**FIGURE 4 – MPI RANKING OF THE FRENCH CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

The other instruments having a high-performance score are the other CAP 2nd pillar instruments: the agri-environmental measures, including those targeting landscape management with a collective dimension, the payment for environmental services and the support for farm

modernisation and investments. Amongst these, the payment for environmental services gets the highest relevance score.

**Potential for innovation** – According to the interviewees, the most innovative measures are the Payment for environmental services, agro-environmental measures for landscape management, the support to circular economy. Payments for environmental services are considered as innovative as they offer a new payment mechanism compared to the current agri-environmental measures and put farmers in a different position. They are seen as offering new payment possibilities and more flexibility to remunerate general services provided by farmers and farming. Agri-environmental measures for landscape and support to circular economy are considered as innovative because of their collective dimension. Both require collective action, amongst farmers for the first one and between farmers and non-agricultural stakeholders for the second one.

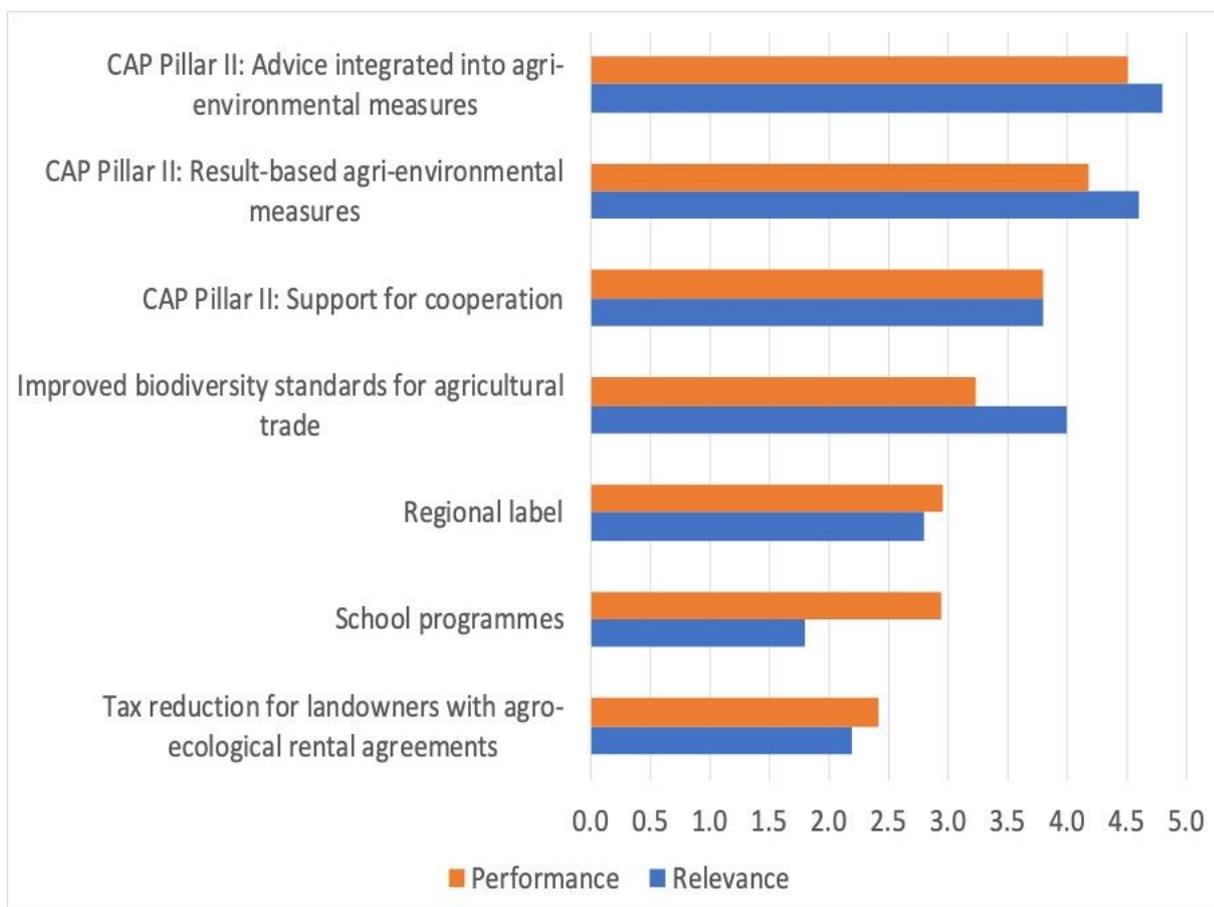
**Governance and implementation challenges** – Extension services have been identified by several interviewees as being a key actor being able to either foster or hinder the transition towards agri-environmental practices. Some underlined that mainstream agricultural extension service do not play a sufficiently active role in pushing for the transition yet. Setting the agroecological transition as the priority for all agricultural extension services and especially the semi-public ones would be an important mean to push for the uptake of environmentally friendly practices. The internal governance of these extension services itself should probably be reformed to enable a wider representation of the diversity of viewpoints on the future of agriculture and food at both national and local levels.

**Key opportunities brought by future policies** – The EU Green Deal, the Farm to Fork Strategy and Biodiversity strategy set ambitious goals which are positive signals sent to member states and stakeholders as for the need to foster the transition in agriculture. The quantified targets set for the development of organic farming, the reduction of pesticides (and for antibiotics) use are important milestones. However, interviewees formulated doubts on the concrete impacts that these strategies can have. The doubts are due to different factors. While the design of eco-schemes is still ongoing, a large-scale transition towards agro-ecology would require setting ambitious measures within the eco-schemes regime. In the second pillar, innovative measures fostering farmers' collective action and engagement could be tested

## 5. DEVELOPING STRATEGIES FOR AGRO-ECOLOGICAL TRANSITIONS IN ARABLE FARMING SYSTEMS (NIENBURG COUNTY, LOWER SAXONY, GERMANY)

**KEY DILEMMA: HOW TO INTEGRATE AGRO-ECOLOGICAL PRACTICES ON ARABLE LAND (CONVENTIONAL AND ORGANIC) IN HIGHLY MARKET-ORIENTED FARMING SYSTEMS TO REDUCE BIODIVERSITY LOSS AND WATER POLLUTION THREATS WITHOUT SIGNIFICANT NEGATIVE IMPACTS ON THE ECONOMIC VIABILITY OF FARMS?**

**Performance and relevance of MPis** - Overall, the results of the scoring exercise of the MCA (Figure 5) suggest that participants are more convinced of the potential of enhanced RDP support to promote agro-ecological transitions compared to the identified new policy instruments (e.g., tax reductions for landowners with agro-ecological leases) and market instruments (e.g., regional label and school programmes).



**FIGURE 5 – MPI RANKING OF THE GERMAN CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

This is shown in higher scores both for performance and relevance, which are also based on a higher degree of confidence in the allocated scores. The higher relevance scores also indicate a higher urgency for improving existing policy instruments to promote agro-ecological transitions in the short

term. But different views on the relevance of the MPIs can be observed, as indicated by the critical values for divergence of responses for the market and new policy instruments.

**Potential for innovation** – All the assessed MPIs have innovative aspects that have the potential to support processes to overcome the identified key barriers of agro-ecological transitions. Several participants indicated the innovative character of the new MPIs such as the tax reduction for landowners and emphasised that such a MPI would merit further exploration and analysis.

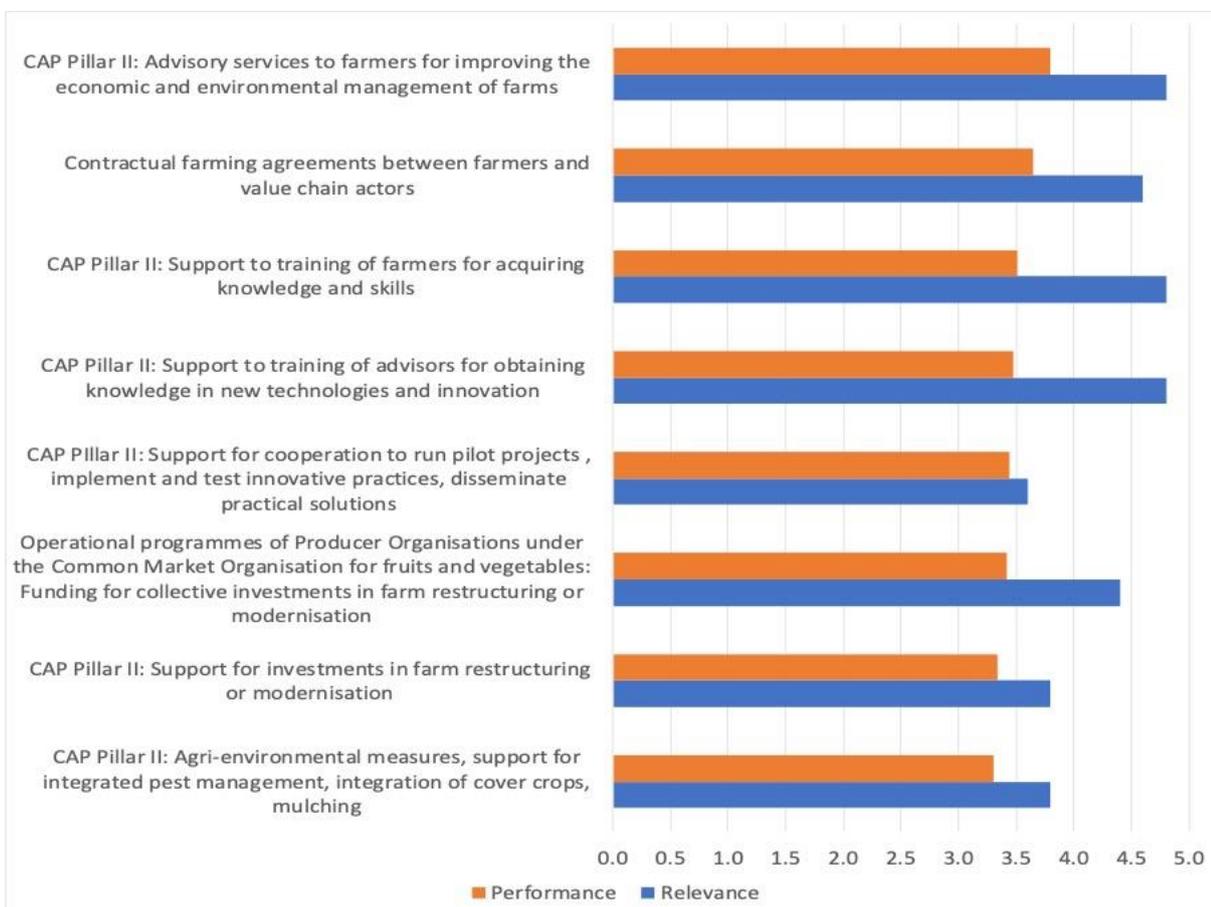
**Governance and implementation challenges** – Networking and capacity building activities are important to increase trust between different actors as a basis to strengthen their cooperation in addressing barriers of agro-ecological transitions. Food policy councils were highlighted as one of those trust-building activities that has the potential to reconnect producers and consumers as a basis to strengthen regional value chains and resulting in added value for farmers. Innovative and new MPIs might face more challenges and require a long-term strategy for successful implementation. But different views and priorities were expressed in the discussion. Some participants argued that legislative changes regarding new biodiversity standards are needed quickly as an improved basis for changes in other MPIs. Others have emphasised that experiences with existing agri-environmental and advisory measures would facilitate the implementation of the revised RDP related MPIs. Then subsequently the development of new market instruments could build on the effects of the revised policy measures.

**Key opportunities brought by future policies** – In 2020 a new unique agreement between agriculture, nature conservation and politics was approved, the so-called “Lower Saxony Way”. The agreement includes commitments to implement concrete measures for improved nature, species, and water protection. As part of the Lower Saxony Way the budget of the LAGE programme will be increased and more support for advisory services including a network coordinator through biodiversity advisors is discussed as part implementing the “Lower Saxony Path”. This policy development provides the opportunity to fund and set up pilot networks county level, e.g., the county Nienburg, which would fit well with the case study and the multi-actor platform set up in UNISECO.

## 6. COLLECTIVE IMPLEMENTATION OF ALTERNATIVE PLANT PROTECTION PRACTICES IN PEACH TREES (IMATHIA, GREECE)

**KEY DILEMMA:** HOW TO SUSTAIN THE LONG-TERM ECONOMIC VIABILITY OF FARMS WHILST PROTECTING THE NATURAL RESOURCES? HOW TO PROTECT BIODIVERSITY AND WATER QUALITY IN ORCHARDS WHILST ALSO IMPROVING COMPETITIVENESS AND MARKET ACCESS?

**Performance and relevance of MPIs** – All the instruments seem to get similar mean scores for the performance assessment dimension (Figure 6). This seems to highlight the positive role of advisory services to farmers in facilitating the transition towards sustainability as information provision and training, strengthen capacity of farmers to understand innovations and adapt to changing conditions.



**FIGURE 6 – MPI RANKING OF THE GREEK CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

On the other hand, when scored against relevance, results revealed divergence among MPIs. Based on the responses, the support for farm advisory services provided to farmers is considered the most relevant instrument, while the lowest mean score is for the establishment of cooperation groups

indicating that the instrument is of lower urgency, thus other instruments should be implemented first to address the key barriers to agro-ecological transition.

**Potential for innovation** – Measures enhancing collaboration is considered a driver for innovation. Collaboration between representatives of farmers, value chain actors, advisory services, universities, and research institutes are meant to build relationships and trust among actors, communicate innovative ideas, adapt methods and techniques to local context, carry out pilot projects, demonstrate results, raise awareness, and diffuse knowledge. The establishment of communication channels and research findings are considered as prerequisites, to promote the long-term sustainability of innovation providing evidence of its effectiveness. Moreover, investments in farm restructuring and modernisation under RDP and CMO for fruit and vegetables are innovative if funding is based on a multiannual management plan according to the needs that arise each production year and collective action is enhanced.

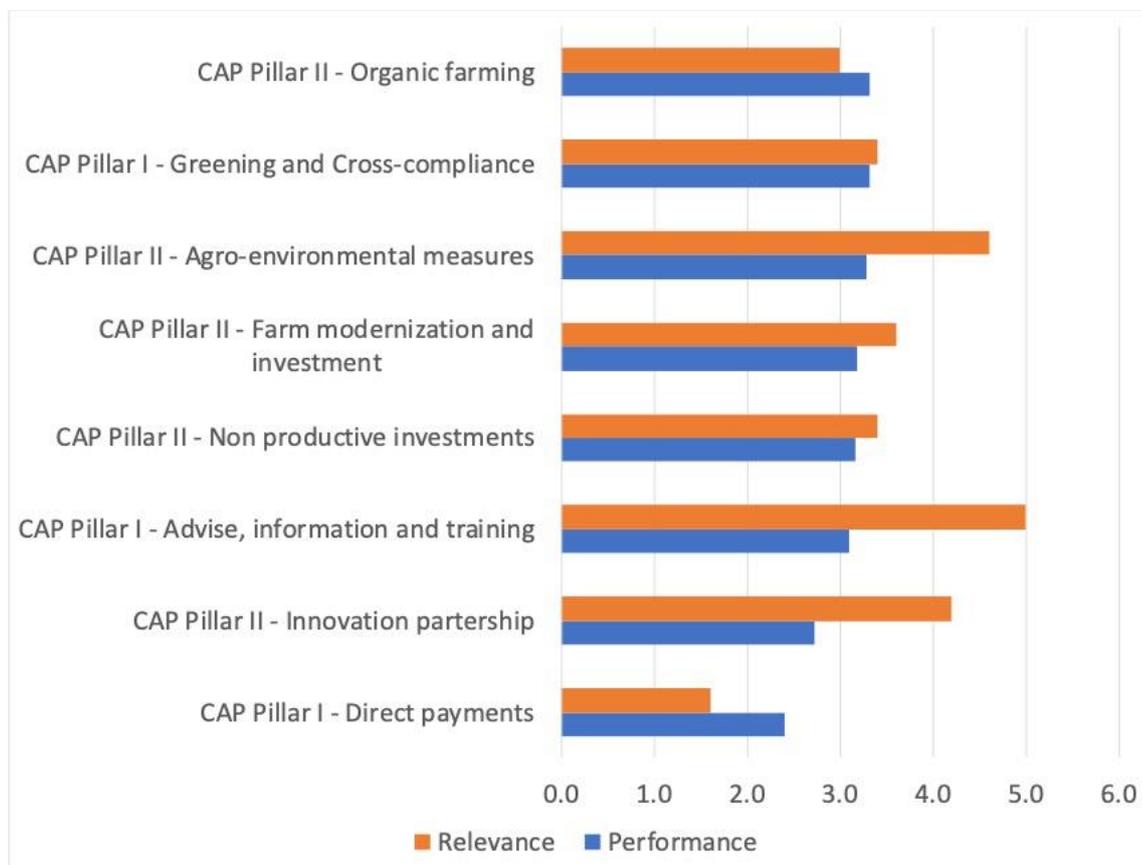
**Governance and implementation challenges** – When investments are planned and supported collectively through operational programmes of POs, efforts are better structured and effectively adjusted, minimising risks and uncertainties. Thus, board and leaders of the cooperatives/POs should be trustful to manage mutual funds with transparency and fairness, enhancing thus confidence between the members. They should be open to innovation, changing their attitude towards environmentally friendly agriculture and food quality to be competitive in the marketplace. To this end, actions that stimulate horizontal and vertical collaboration seem to be of crucial importance. Providing only theoretical advice to farmers is considered pointless, since they will be eventually convinced when they observe the results in practice through demonstration activities and farm visits to pioneer farmers who were willing to adopt innovation first. Thus, innovation should be based on tangible results which are demonstrable and observable, highlighting, in turn, the need for farmers' training and advisory service.

**Key opportunities brought by future policies** – The new European framework may serve as a turning point for the national strategies in Greece to protect natural resources, safeguard biodiversity and improve economic viability of farming. These goals should be included in the national design for rural development, a strategic plan focusing on lifelong provision of education and training to farmers, effective coordination and operation of Agricultural Knowledge and Information System (AKIS), opportunities for collaboration and support of joint actions.

## 7. SOIL CONSERVATION FARMING (HUNGARY)

**KEY DILEMMA: HOW TO INTEGRATE AGRO-ECOLOGICAL PRACTICES ON ARABLE LAND IN HIGHLY MARKET-ORIENTED ARABLE FARMING SYSTEMS TO MAINTAIN AND IMPROVE SOIL QUALITY WITHOUT SIGNIFICANT NEGATIVE IMPACTS ON THE ECONOMIC VIABILITY OF FARMS?**

**Performance and relevance of MPIs – CAP II Pillar –** Advice, information and training has the absolute highest relevance score to promoting the uptake of soil conservation farming practices (Figure 7). The least relevant MPI for promoting soil conservation farming is CAP I pillar direct payment, and interestingly it is also the least performing one. Currently it does not tackle any transition and is rather relevant to maintain the status of the system aiming at increasing the economic efficiency of agriculture. The performance of selected MPIs to help solving the case study challenge in general are considered medium. Of the most relevant three MPIs, Agro-environmental measure is considered to perform the best, and the other two are slightly worse.



**FIGURE 7 – MPI RANKING OF THE HUNGARIAN CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

**Potential for innovation –** Innovative design changes to existing rural development measures have the potential to successfully promote transitions to soil conservation farming if accompanied by measures of research and advisory development, raising public awareness and demand for crops produced this way. Agri-environmental-climate measures have a large potential in relation to tackle the transition to soil conservation farming. A re-design of AECMs are needed, new types of service contracts that either favour environmental results over management prescriptions giving farmers

freedom to implement multi-year site-specific farming practices (e.g. management commitments to increase soil water retention capacity, management commitment for intercropping, sequential cropping, management commitments for anti-erosion landscape features, or collective actions at landscape level (e.g. collective actions for land use planning based on land suitability maps).

**Governance and implementation challenges** – Adopting soil conservation farming practices are considered as a first step for market oriented arable farming systems towards transition to agro-ecological farming systems. Farmers, however, need knowledge and advisory support to accompany them along the systemic change, as well as scientific evidence to underpin the economic viability of such practices. It is necessary to promote a change of attitude, increase knowledge transfer through demonstration farms and real-scale experiments. In addition, unbiased research and advice should be developed to support the agro-ecological transition, and to support the modernization of agricultural vocational education. The development of an agro-ecological advisory system requires primarily the intention of policy makers, but obviously also requires financial and infrastructural interventions, as this type of expert advice cannot be implemented on a market basis. Professional knowledge is basically available, although relevant human resources need to be expanded. This also requires a strengthening of the link between farmers and non-market-based consultants. The financial conditions for technology transition must be ensured through investment programs. Targeted strategies and policies should encourage the adoption of soil conservation practices. Many actors in the agri-food system are relevant to assist farmers to bring the widespread adoption of soil conservation farming practices to a success. At the level of the food system, it would be necessary to initiate innovative market measures, and an awareness campaign on the overall importance of soil. Cooperation could be facilitated through organizing field days and the creation of a professional platform at the national level.

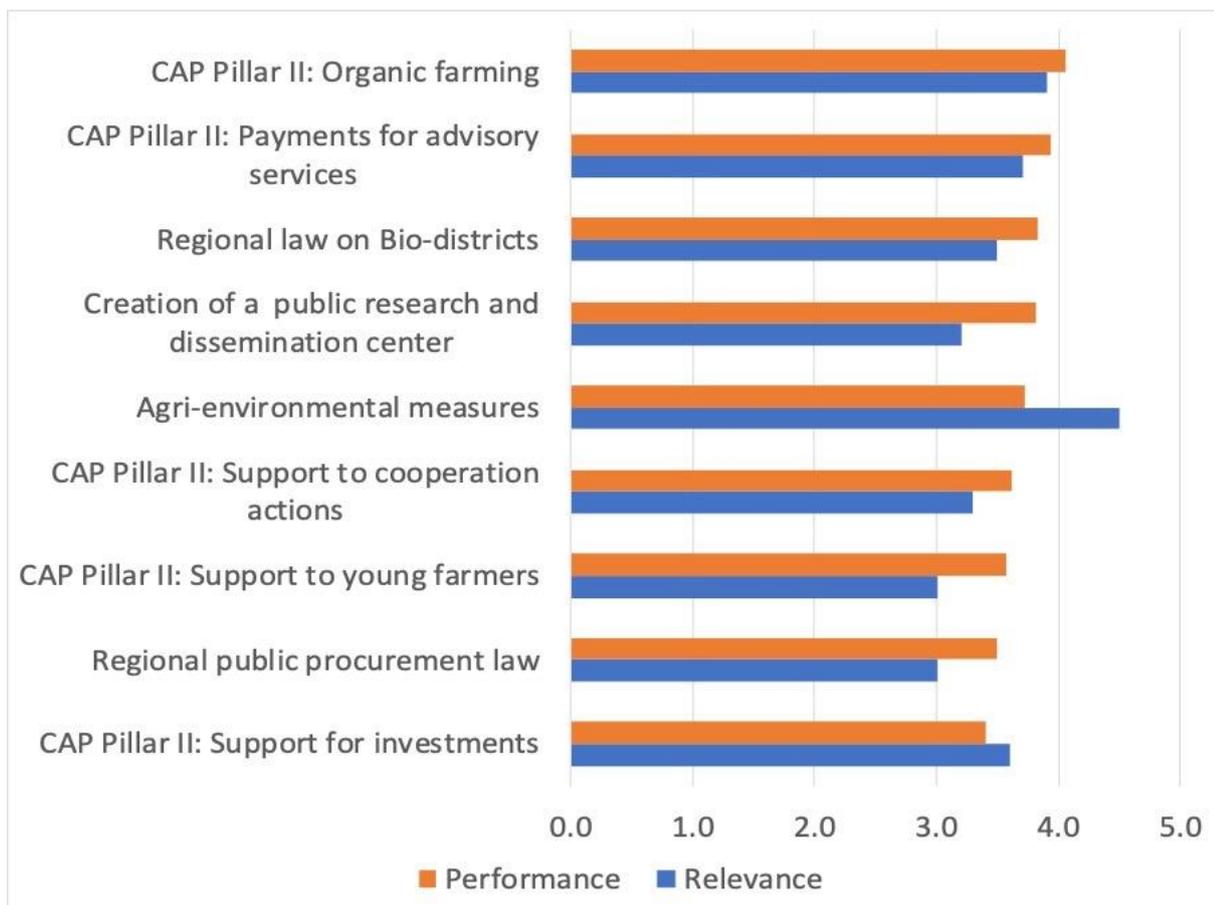
**Key opportunities brought by future policies** – The current barriers and inducing cooperation of different actors from the practice-science-policy domain are expected to be resolved by governmental initiative on national level. Farmers need to be educated about innovations and move in the direction of positive change. Sustaining the country's self-sufficiency in agricultural products and fostering local economic cooperation is a step forward. Already during the Covid pandemic, local producer and trade collaborations have intensified, and producers are also becoming more open to direct contact with consumers for greater profit, avoiding intermediaries that make products unnecessarily expensive. In the light of the Green Deal and Farm to Fork Strategy of the EU the environmental and climatic expectations are expected to increase in the next cycle of the CAP, therefore the topic of soil conservation farming is justified to be a priority and requires getting prepared for the development of appropriate interventions in the national CAP Strategic Plan. In this process, it is essential to raise environmental awareness among national stakeholders the environmental impact of CAP implementation programs is strongly dependent on current policy decisions throughout their implementation.



## 8. DIVERSIFYING SPECIALIZED WINEGROWING AREAS (CHIANTI BIODISTRICT, ITALY)

**KEY DILEMMA:** HOW TO PROMOTE CROPPING SYSTEM DIVERSIFICATION IN A HIGHLY SPECIALISED AND MARKET-ORIENTED WINEGROWING AREA VIA THE ADOPTION OF AGRO-ECOLOGICAL PRACTICES, TO INCREASE BIODIVERSITY AND IMPROVE LANDSCAPE MANAGEMENT WHILE MAINTAINING THE PROFITABILITY OF FARMING THROUGH LOCAL VALUE CHAINS.

**Performance and relevance of MPis** – Agri-environmental measures show the highest relevance, followed by organic farming (Figure 8). To achieve the desired results, economic support should be subject to the adoption of more sustainable practices during maintenance. The ranking for agri-climatic-environmental payments differs greatly from that in terms of performance, indicating that the urgency of intervention does not go hand in hand with the ability of this measure to achieve the desired results. These payments are considered relevant to the strategy but the proposed changes to improve its performance are not considered to be entirely adequate, especially by missing additional rewards for organic farmers.



**FIGURE 8 – MPI RANKING OF THE ITALIAN CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

**Potential for innovation** – The creation of a regional centre for agricultural experimentation and dissemination is essential to raise the level of specific knowledge for the dissemination of agroecological technology by technicians, farmers and local administrations. Support for

cooperation for the development of innovation creates a system of connections between the project partners, to solve the critical issues of small and large Chianti producers. The potential for the diffusion of innovation can increase if cooperation succeeds in triggering collaboration between large and small farms and between farms and other actors in the supply chain. The Regional Law on public procurement could create strengthened feedback loops to trigger new job opportunities and a more sustainable and resilient use of agricultural land. The innovativeness of the Regional Law on Organic Districts lies in the aggregation of farms, food chain firms and local administrations to exploit synergies between different tools. In Chianti, organic farming is becoming a basic requirement to support the competitiveness of farms, especially wine and olive farms.

**Governance and implementation challenges** – Given the general individualism of Chianti farmers, cooperation is an organizational innovation and as such requires an attitude towards change that could perhaps occur because of generational renewal. The reduced investment capacity of individuals, especially if small, can limit interventions to mitigate the effects of extreme events (e.g., related to climate change) and unexpected events (for example the COVID19 pandemic) that can put a strain on agriculture in Chianti. In the Operational Groups, it would be important to work on continuing cooperation beyond the end of the project and on extending the partnership, to scale the results to a wider territorial level. The Chianti Bio-district project includes the actions to be implemented, stems from the collaboration between stakeholders of different types of interest; this is possible if the administrations involved are sufficiently motivated to bring together different stakeholders and put the actions together. In addition, administrations can play a key role in promoting the district, to entice companies to approach the biological method and join the district.

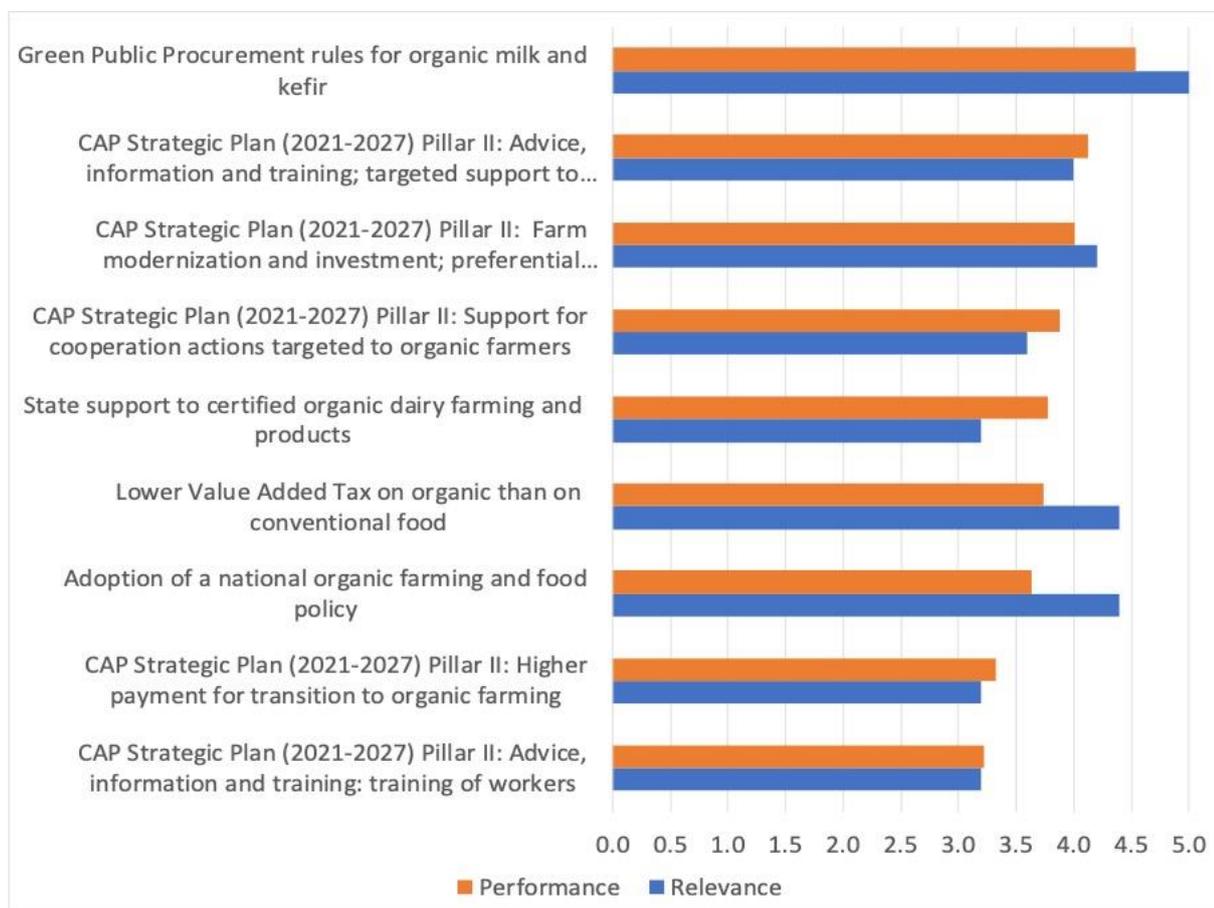
**Key opportunities brought by future policies** – Compared to the national and European political framework, the "Farm-to-fork " strategy offers the greatest opportunities for the spread of agroecology in Chianti, by supporting small companies and short supply chains. Other opportunities are linked to the novelties of the CAP post-2020, such as, e.g., support for collective actions, and the proposal for a single national strategic plan, with less fragmentation of funds.



## 9. ORGANIC DAIRY FARMING (LATVIA)

**KEY DILEMMA:** HOW TO INCREASE THE ECONOMIC VIABILITY OF CONVENTIONAL AND ORGANIC, LARGELY GRASS-BASED, DAIRY FARMS WHILE PRESERVING BIODIVERSITY IN GRASSLANDS AND WATER RESOURCE QUALITY? HOW TO ENSURE THAT ALL ORGANIC MILK IS PROCESSED INTO ORGANIC DAIRY PRODUCTS?

**Performance and relevance of MPIs** - Results from the MCA (Figure 9) show high values both in terms of Relevance and Performance for the instruments Organic Public Procurement, Farm Modernization and Investments and Advice, Information and Training on AEF Practices; high values in terms of Relevance and low value in term of Performance for the instruments Reduced VAT on Organic Dairy Products and National Organic Farming and Food Policy, mainly due to a lack of political commitment for implementation (feasibility is found being the most influencing performance criteria).



**FIGURE 9 – MPI RANKING OF THE LITHUANIAN CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

**Potential for innovation** – Results from the qualitative assessment show that the above instruments should be implemented together to make the envisaged changes happen. Strengthening advisory services is essential to address existing challenges but not sufficient. This action should be accompanied with support for investments to address financial barriers and with the other actions

on the demand side both to increase the size of the market for organic dairy products and the price of organic milk that guarantee the maintenance of sustainable farming over time.

**Governance and implementation challenges** – The *National Organic Farming and Food Policy* is considered the overarching strategy that should coordinate and guide the implementation of other instruments to guarantee their synergies. The CAP support without a strategic plan for agroecology does not incentivize farmers to increase operational efficiency and economic viability with the results that any changes are temporary and limited to the time of use of subsidies. This is especially true for organic farming, where payments are not differentiated according to the degree of complexity of the organic farming system. In addition to the identified instruments, the introduction of polluter-pays instruments targeted at conventional dairy farmers is considered an important instrument to persuade farmers to reduce or give up certain environmentally harmful practices, such as the use of chemical plant protection products. However, the implementation of instruments supporting the organic farming and organic food sector is contingent on political will and priorities in the Ministry of Agriculture. The conventional farm lobby representing mainly large farming operations continues to hold much influence over the priorities set by the Ministry of Agriculture. Changes in administration and control procedures are necessary to guarantee the correct implementation of the actions supported by the identified instruments. Increasing coordination between the Ministry of Agriculture, Ministry of Welfare and the Rural Consultation and Training Centre in the training and re-training of dairy farming support staff is seen as one of the most important governance issues to be addressed. Increasing cooperation between actors in the organic milk value chain is also of great importance for the development of the sector.

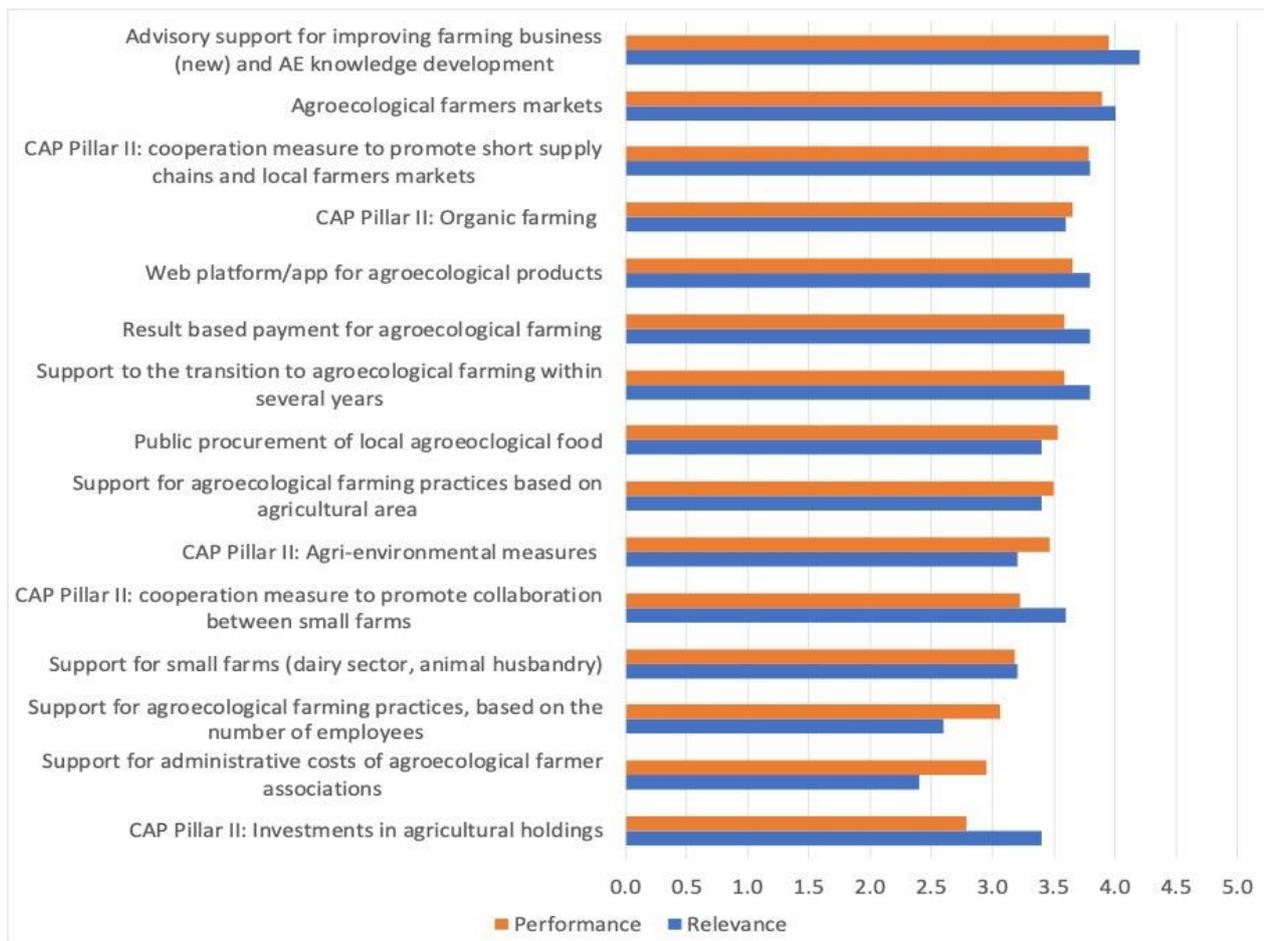
**Key opportunities brought by future policies** – Future EU policies and strategies will help to increase the sustainability of farming practices and the production and processing of organic products in MS. Greater harmonization of product labelling across the EU would support growth of organic and agro-ecological farming practices and products. In Latvia, the National CAP Strategic Plan (2021-2027) is expected to continue support for the development of the organic dairy sector. In addition, the recent adoption of mandatory public procurement criteria for organic milk and kefir is a positive signal in the right direction.



## 10. SMALL SCALE DAIRY FARMERS AND CHEESEMAKERS (LITHUANIA)

**KEY DILEMMA: HOW TO MAINTAIN AND ENCOURAGE EXTENSIVE MANAGEMENT (GRAZING) OF GRASSLAND HABITATS? HOW TO BECOME (OR REMAIN) COMPETITIVE IN THE MARKET WITHOUT INTENSIFYING THE FARMING PRACTICE?**

**Performance and relevance of MPIs** - The strongest performing MPI was innovative Advisory Support for Improving Farming Business and AE Knowledge for Farmers (Figure 10). The second-best performing measure was also innovative measure AE Farmers Markets which could be organized via cooperation of farmers and have a possibility to store farmers' goods and in that way ease logistical burden for farmers. In terms of relevance criteria, most shortlisted MPIs were evaluated positively. Just like with performance criteria, the best evaluated MPIs were proposed innovative measures called Advisory Support for Improving Farming Business and AE Knowledge and AE farmers markets. Other well-evaluated measures were innovative MPIs such as Support for Total Farm Redesign to AE and Result-based payment, also already existing MPIs such as Web platform for AE products and RDP cooperation measure: Promotion of Short Supply Chains.



**FIGURE 10 – MPI RANKING OF THE LITHUANIAN CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

**Potential for innovation** – The measure “Support for farmers to hire consultants” could become a game changer if developed well and focused on sustainable farming. Such a measure should also not be overly burdensome to apply for (e.g., there are support opportunities through EIP (European Innovation Partnership but are hardly used by farmers). Additionally, it should help ensure that high-level professionals (consultants) are reached. Other innovative measures are “support for AE farming practices, based on the number of employees”, “result-based payments for agroecological farming”, “support for administrative costs of AE farmer associations”, and “support to the transition to agroecological farming within several years”

**Governance and implementation challenges** – Overall challenges include socio-political issues such as lack of investment in research and higher education of agriculture related sciences. In the last years, the number of students in agriculture related programmes such as zootechnology, agricultural engineering sciences, etc., was very low. Some programmes had no students. This issue is a threat to the long-term agricultural knowledge base in the country, lack of consultants in the future and slowed scientific/ technological/ biotechnological (incl. revival of traditional produce) progress. What is more, it has been stated that the level of scientific and technological/ biotechnological advancement of the dairy sector is lagging behind other countries in Europe. Thus again, the importance of proper expertise and ability to consult farmers is reiterated. It is very important that farmers not only have support opportunities, but also means/ tools/ help to implement innovations and advance their state of play.

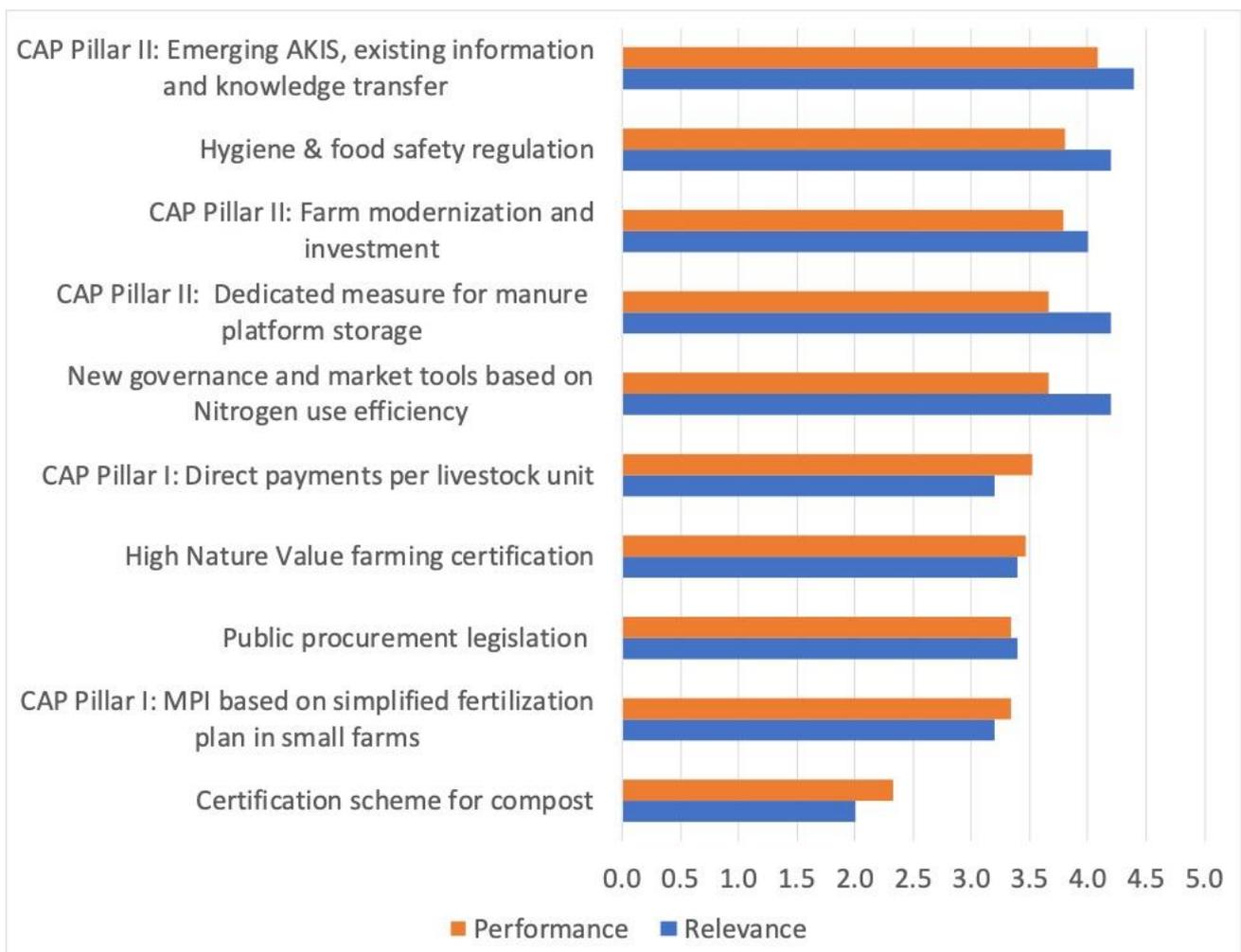
**Key opportunities brought by future policies** – EU level strategies such as EC Biodiversity for 2030 strategy, Farm to Fork strategy go hand in hand with the transition to agroecology as well as do some of the new CAP funding period green ambitions. An incentive for member states to transition to greener agriculture is there. For Lithuanian case study, it sounds promising if the underlying goals of the new strategies are implemented well in Lithuania. Another aspect of the new EU developments is the importance of sustainability of the food chain. EU Farm to Fork strategy, among other things, sets a goal to reduce the environmental footprint of the food chain through use of local and more sustainable produce while also aims to ensure that local and sustainable food is both available and affordable. This is very much in line with the assessed market related MPIs.



## 11. HOTSPOTS OF BIODIVERSITY AND HEALTHY FOOD (TRANSYLVANIA, ROMANIA)

**KEY DILEMMA: HOW TO INCREASE THE ECONOMIC VIABILITY OF SMALL-SCALE FARMING WHILE PRESERVING THE CULTURAL LANDSCAPE AND BIODIVERSITY?**

**Performance and relevance of MPIs** - The average scores for both the performance and relevance dimensions are quite similar for all MPIs and there aren't any significant discrepancies amongst them, except for the "New certification scheme for compost" which is being seen as the least performing and relevant MPI on the list (Figure 11).



**FIGURE 11 – MPI RANKING OF THE ROMANIAN CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

The best performing and the most relevant MPI is perceived to be the one around the emerging AKIS, signalling once again the need for, and the added-value of a functional, reliable, well-rounded AKIS system which should necessarily offer access to information and advice regarding agro-ecological practices including those which have been shortlisted for discussions under the project MAP engagements.

**Potential for innovation** – Instruments considered to be innovative are: the MPI about Nitrogen use efficiency – CAP Pillar 1 (a possible eco-scheme); the knowledge transfer measures incorporated into the future AKIS with a layered structure, from local to regional and national, and based on the needs of each layer; a new IT tool/application for nutrient management, with automatic integration of data from different sources, which would also incorporate fertilization plans and be used by farmers through phones; a certification for products from traditional orchard meadows (mixed farms) and extensive grazing systems.

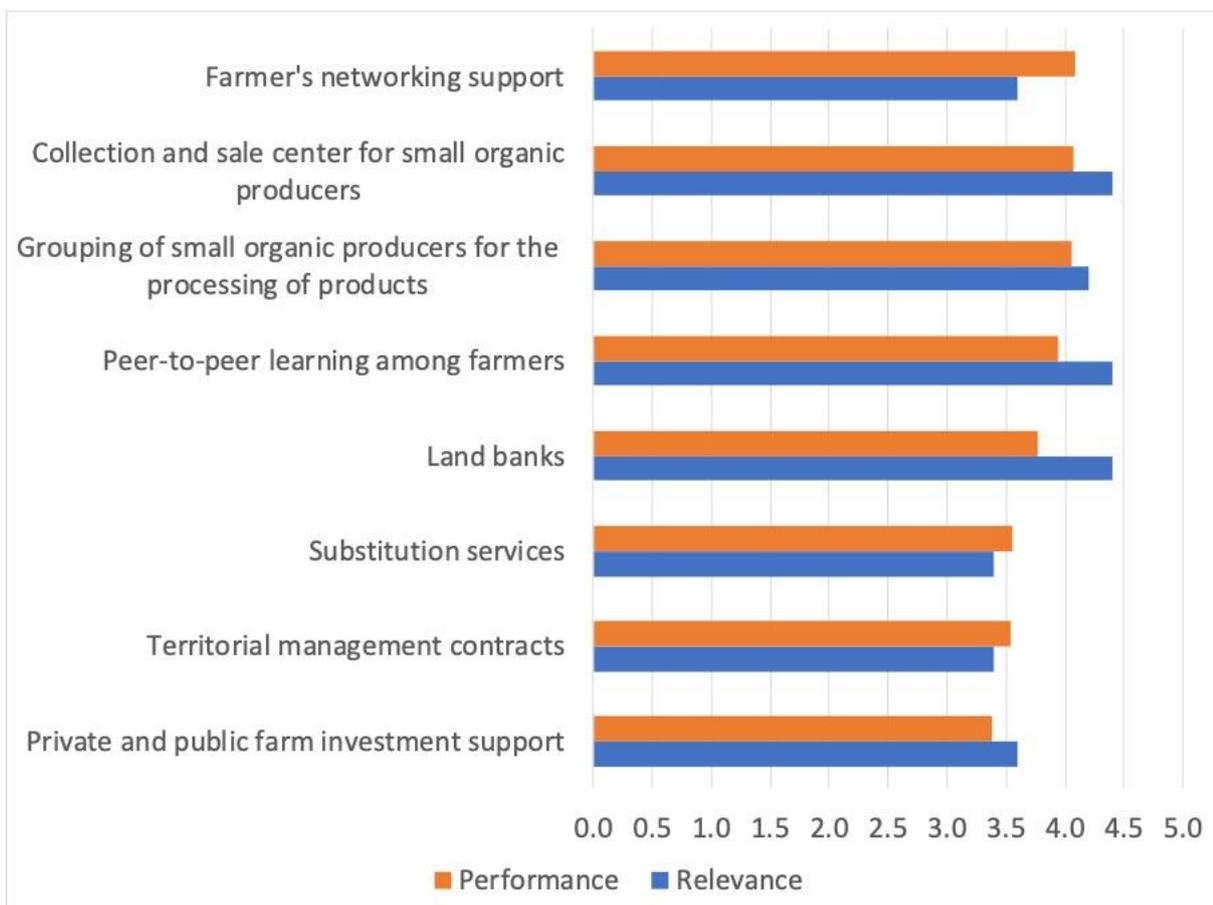
**Governance and implementation challenges** – Innovation can be done through AKIS and by encouraging clusters between researchers, farmers, farmer organizations and farmer networks, advisors, suppliers/buyers and other technical services, agricultural education and training providers, NGOs. This includes building closer links between research and practice through the method of applied research; delivering information according to the needs of farmers; developing stronger farm advisory services with better resources, better knowledge/skills and new approaches to the organization and delivery of advice; fostering and disseminating innovation and supporting the uptake of digital tools by farmers and advisers. The AKIS development needs to be discussed at the national level and at the level of individual farmers, farm businesses or farming families – a so-called micro-AKIS. Therefore, there is a need for openness from the Ministry of Agriculture and a new mindset for change and a correlation and coherence with other national strategies and the new European strategies, with a clear, consistent link to financial instruments.

**Key opportunities brought by future policies** – These strategies - Farm to Fork, New Green Deal, Biodiversity Strategy - are seen as offering opportunities if they are linked to financial support and opportunities. The National Strategic Plan is regarded as an essential tool in this sense, in the next budget period, and described as a compromise between the European objectives and the needs of each Member State. And that's because European targets need to be translated and adapted to the national context, depending on where each state currently stands on key indicators such as the surface of protected areas, the surface of organic farmland, the level of usage of chemical inputs, etc. So long as these targets are set on the foundation of existing progress, then the framework is being regarded as balanced. The need for transparency in setting and monitoring targets was also mentioned as an important aspect in the process of transposing European strategies and objectives in national plans and programmes.

## 12. AGRO-ECOLOGICAL FARMING SYSTEMS (BASQUE COUNTRY AND NAVARRA, SPAIN)

**KEY DILEMMA: HOW TO REDUCE THE FRAGILITY OF AGRO-ECOLOGICAL FARMS WHILE MAINTAINING THE SOCIAL, ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY?**

**Performance and relevance of MPIs** - In general terms, all the initiatives were positively evaluated both in their performance and relevance (Figure 12). In terms of performance to overcome the barriers that impede the transition, the 4 best valued initiatives were the “farmer’s networking support”, the “collection and sale centre for small organic producers”, the “grouping of small organic producers for the processing of products” and the “peer-to-peer learning among farmers”. In terms of relevance, the 4 instruments considered most relevant (urgent and priority) were the “collection and sale centre for small organic producers”, the “peer-to-peer learning among farmers”, the “land banks” and the “grouping of small organic producers for the processing of products”. In contrast, the least scored in both criteria were the “substitution services”, the “territorial management contracts” and the “private and public farm investment support”. Therefore, we found a match in the best and worst rated instruments in both criteria.



**FIGURE 12 – MPI RANKING OF THE SPANISH CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

**Potential for innovation** – The land bank is an initiative that would respond directly to that need of the land sector, especially for the first installation of people who have not inherited any exploitation. However, creating a land bank at the regional level has legal or administrative barriers. Each municipality has its own land bank ("communal lands") and manages them with its own rules. Collective post-harvest initiatives continue to be an innovative model, little developed, and necessary to solve the problems of the sector, such as the lack of infrastructure and machinery both to store and transform the products. Territorial contracts grant a lot of legitimacy in front of society to the possible future payments that could be made to farmers from public resources. They would have been a way of recognizing the work that producers are doing for the future and the following generations who want to continue producing in a sustainable way. Substitution or replacement services could be an innovative measure to solve the political-social problem that exists within the agroecological movement, which is the lack of spaces for decision-making or participation of producers in those forums.

**Governance and implementation challenges** – The main challenge of AE transition is that it requires a paradigm shift. The current economic and trading system is based on principles or rules of competition. While agroecology needs a basis of cooperation or collaboration (or, at least, a combination of collaboration and competition). For this reason, all the measures proposed here have an implicit principle of collaboration. The transition requires more knowledge and support throughout the entire production system (not only for producers to produce in one way, but also for industry and consumers). Flexibilization of regulations and creation of ad hoc regulations for transformation facilities located on family farms. Producers' complaints are very frequent in the sector when starting small processing facilities, because the sanitary requirements are quite strict, and the same conditions apply as for a large agri-food company. Finally, all actors involved -farmers, associations and Administrations- must work towards the same objectives. For this, they must also share the same values and the political perspective behind agroecological projects

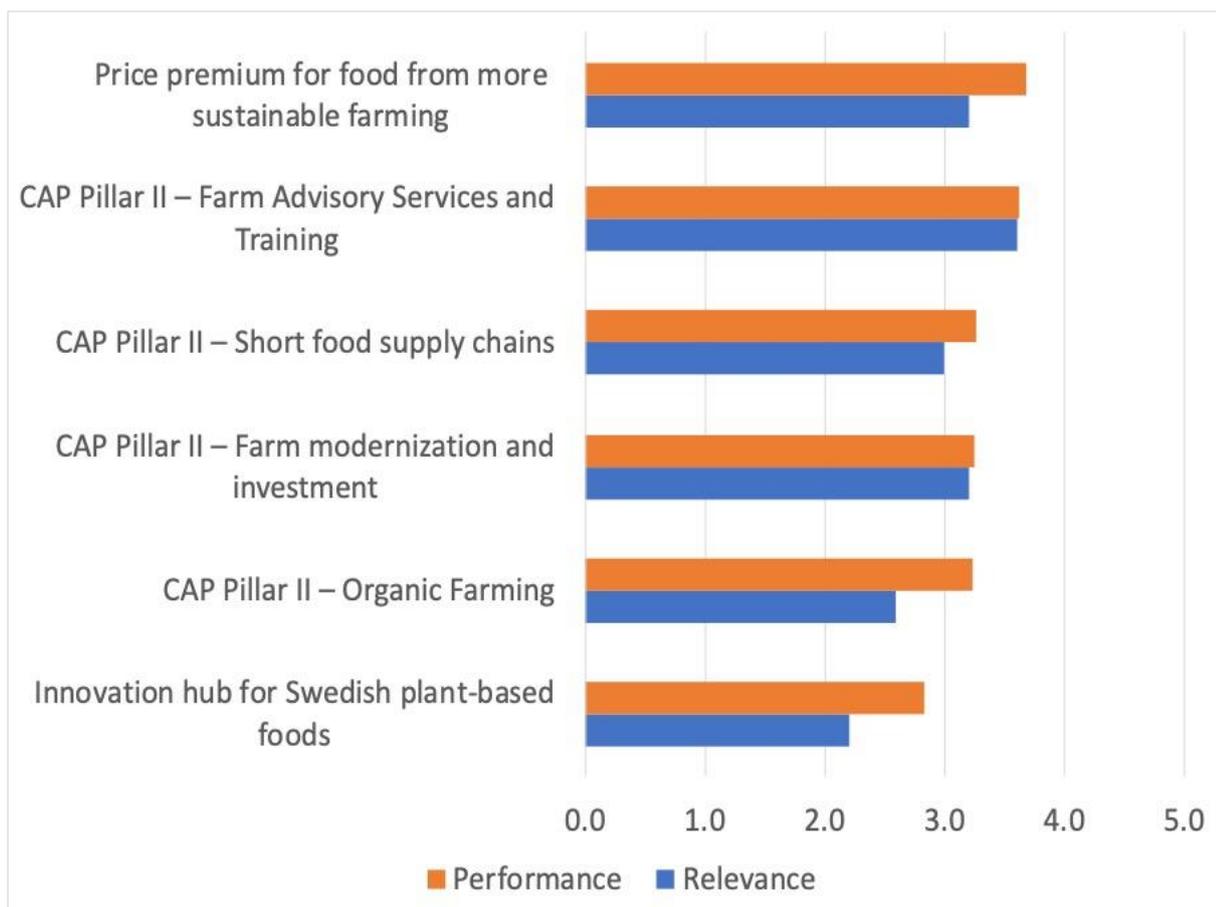
**Key opportunities brought by future policies** – About the Green Deal and the Farm to Fork Strategy, the interviewees valued them positively. They considered these instruments should represent an important change in such a way as to allow the agri-food sector to guarantee the supply of healthy food, produced in a fair and sustainable way to the entire European population. The Green Deal and the Farm-to-Fork Strategy have been a great advance, but it has to be incorporated into a environmentally ambitious CAP without forgetting the economic and social sustainability of the sector. It is a key moment for actors committed to the agroecological transition. There is an opportunity for them to boost the transition. And farmers must be who lead this ecological transition in the European primary sector.



## 13. MORE FOOD FOR RUMINANT FARMS (SWEDEN)

**KEY DILEMMA:** WHAT ARE THE CHALLENGES AND POSSIBILITIES TO DIVERSIFY SPECIALISED RUMINANT FARMS (CONVENTIONAL AND ORGANIC) TO INCLUDE MORE CROPS FOR DIRECT HUMAN CONSUMPTION WHILE SIMULTANEOUSLY INTEGRATING MORE AGRO-ECOLOGICAL PRINCIPLES TO ENHANCE SUSTAINABILITY PERFORMANCE IN AN ECONOMICALLY STRAINED PRODUCTION SECTOR?

**Performance and relevance of MPis** – The results (Figure 13) show that the two most relevant and performing incentives are “price premiums for food from more sustainable farming” and “Farm Advisory Services and Training”. Respondents believe that price premiums would give farmers the security that companies will buy their sustainable products for a fair price. Farm Advisory Services in Sweden are also rated positively, as they provide many free services and trainings, such as courses and farm assessments to improve environmental performance. In addition, they could advise farmers on how to start producing new crops, as well as give market advice on investments that might help farmers to diversify.



**FIGURE 13 – MPI RANKING OF THE SWEDISH CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

**Potential for innovation** – The price premium was considered to be the most innovative MPI by most respondents. This instrument would encourage the food industry to think about the food system that they want to support and how they want to support it, and it would lead to the creation

of some specific criteria for receiving the premiums which would guide farmers towards improved sustainability. Premiums were suggested to be practice-based. This will help farm profitability and sustainability, but it is not certain how much the environmental performance would increase. Another important innovative MPI is the innovation hub; innovation hubs are not common in Sweden and they would be needed. Another participant pointed out that hubs have the highest potential for innovation, as they can support new practices and ideas.

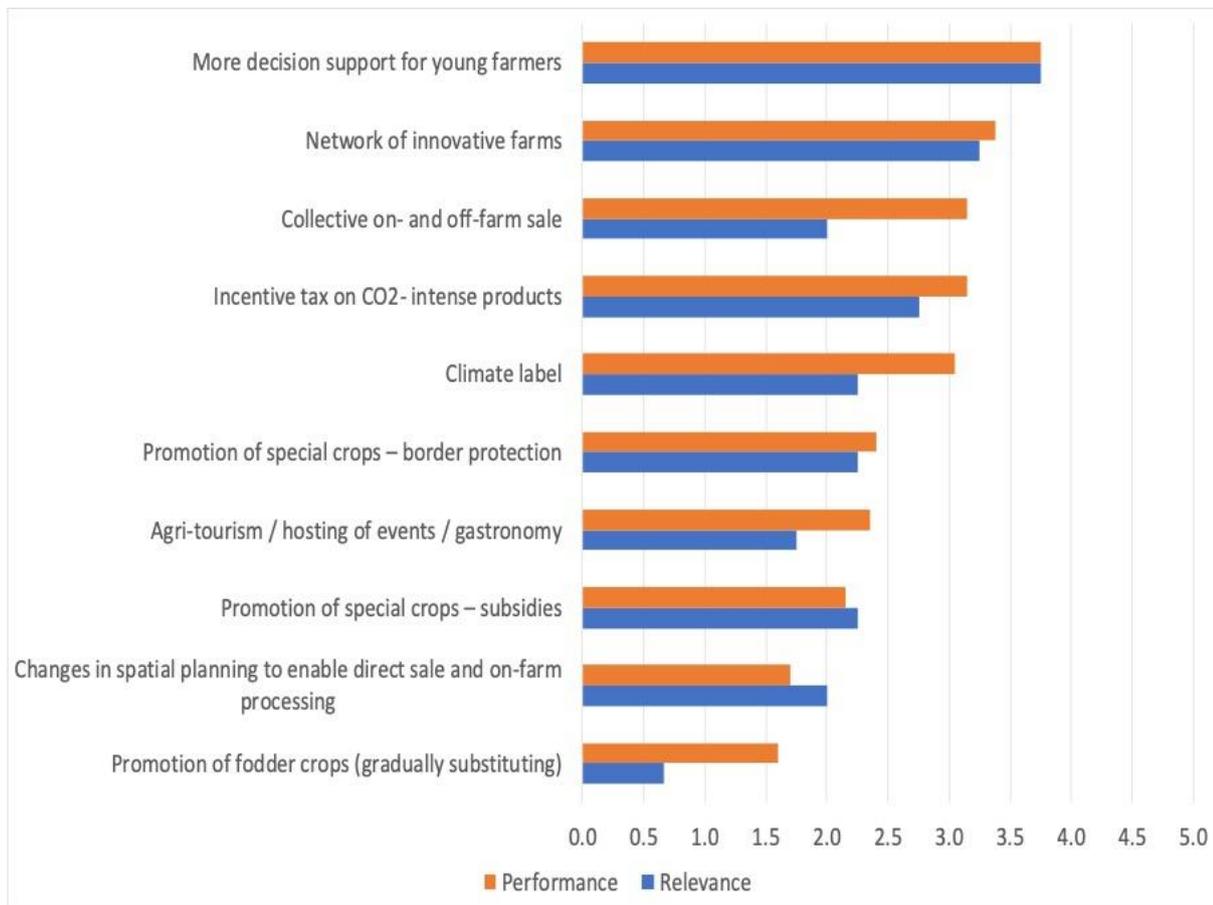
**Governance and implementation challenges** – The main challenges identified for the implementation of price premiums were the low prices of food in general and consumers’ limited willingness to buy more expensive products. Other relevant issues are the lack of interest and limited interest span of companies. Industries, especially those who are in the middle of the food chain, are often not interested in these products, or might support these projects only for a limited period. To test and implement new practices at a farm however takes a long time, which is often not understood by actors in the value-chain. The main challenge for the implementation of the innovation hub would be to have a central figure or committee that could commit to organizing and directing the hub, especially if there are not ample financial resources. In addition, there is the need to inform farmers about the existence and the benefits of this initiative; particular importance is to be given to livestock farmers, as they might feel left out and even feel “attacked” by a hub that solely focuses on plant-based foods. Financial resources were not considered as important by most respondents as the costs to set it up and run it were not considered very high compared to the potential benefits. Funding is required to pay for expertise, as sourcing experts when they are needed would make the innovation hub more flexible and creative.

**Key opportunities brought by future policies** – The National Food Policy for Sweden prioritizes ruminants over crops, and will continue to do so because ruminants, and especially milk production, are deemed to fulfil the goals of competitiveness, increased environmental performance by keeping the landscape open, as well as job creation. The National Food Strategy for Sweden also includes an increased support for organic farming, which can help the MPI organic farming. The Farm to Fork strategy, which sets ambitious goals that can guide the objectives of the eco-schemes. Interviewees envisaged that Sweden (and other countries) might still try to convert eco-schemes into “hidden” production support, but it would be up to the EU to catch these attempts.

## 14. INTENSIVE ANIMAL FARMING (LUCERNE CENTRAL LAKES REGION, SWITZERLAND)

**KEY DILEMMA:** HOW TO REDUCE THE HIGH ANIMAL DENSITIES AND AT THE SAME TIME REMAINING PROFITABLE AGAINST THE BACKDROP OF IMPORTANT PATH DEPENDENCIES (BARN CONSTRUCTIONS, DEPTHS, UP- AND DOWNSTREAM MARKET, KNOWLEDGE SYSTEM).

**Performance and relevance of MPIs** - As shown in Figure 14, none of the instruments performed exhibited a high overall performance score. The interviewees rated the MPI collective on- and off-farm marketing, the network of innovative farms, incentives related to CO<sub>2</sub> emissions, as well as more decision support for you farmers as most performant. When it comes to the assessed relevance of the MPI, two of the incentives mentioned above are also rated as relevant: the network of innovative farms and the increased decision support for young farmers. This might be because these measures can be implemented on a regional scale (not national) and that they comprise new ideas compared to other regional measures.



**FIGURE 14 – MPI RANKING OF THE SWISS CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

**Potential for innovation** – The most innovative policies are: “Innovation network” (mentioned twice); “Decision support for young farmers” (mentioned twice); “Promotion of arable crops by additional financial support”; “Promotion of arable crops by border protection”; “Climate tax”.

**Governance and implementation challenges** – The innovation network needs to consider the fodder, barn construction and food industry, to avoid that private advisory services counteract in a parallel process the envisaged innovations. It should also be built on mutual trust and needs to emphasise on economic aspects as well. One challenge mentioned in association with the decision support of young farmers was to not only focus on single investments or advisory but also try to provide the whole context of the key dilemma in the region. Key pre-requisites for implementing the new MPIs are: financial resources for additional advisory services in the case of decision support for young farmers; farmers need to be treated as partners (and paid accordingly) in innovation networks; Personal resources in advisory services: it is not easy to find the right personal with enough practical experience and soft skills such as being able to learn from and listen to farmers; Less advisory services by the fodder, barn construction and food industry with counteracting messages. New advisory services need to be built on trust and be low-threshold. Being low threshold is a key attribute for future advisory services with the impact to stimulate innovation (e.g., testing new special crops).

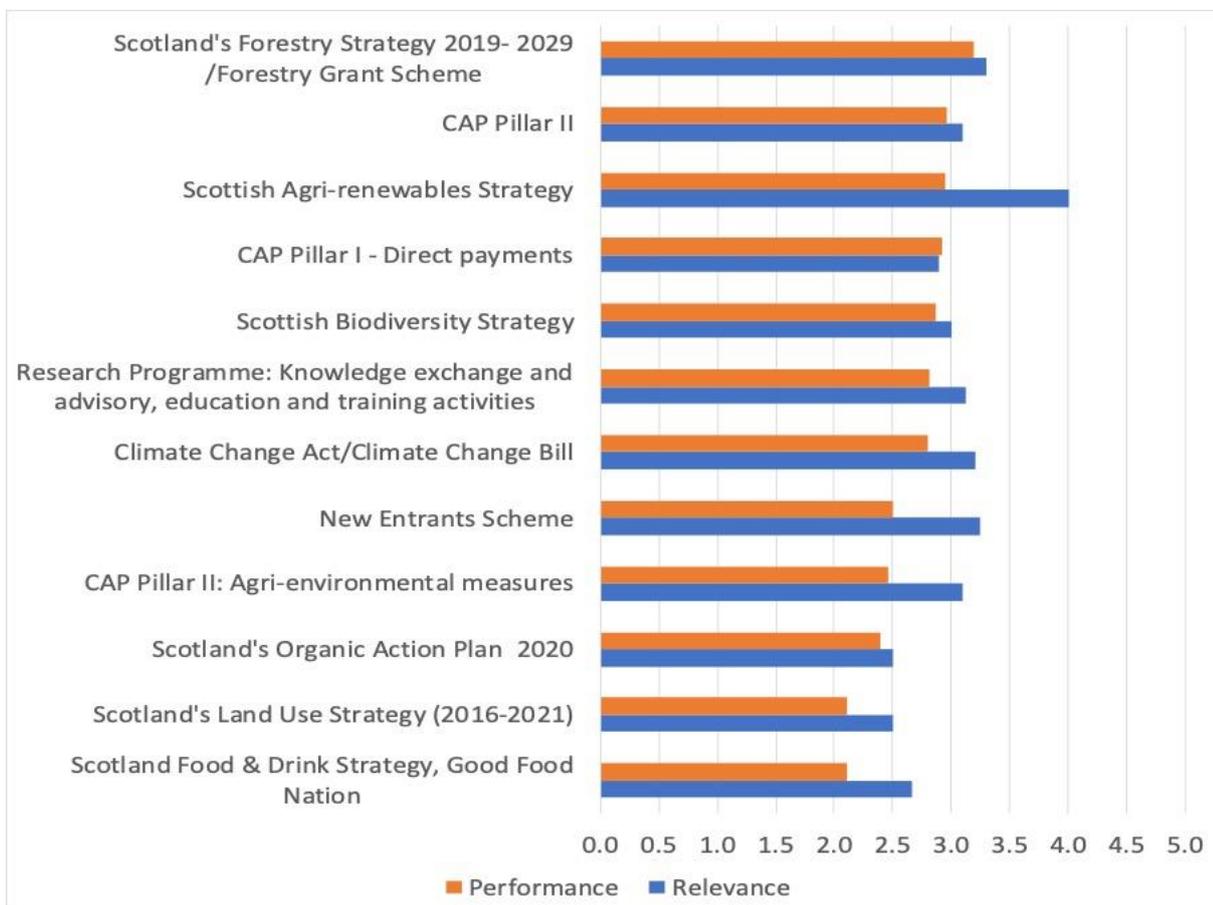
**Key opportunities brought by future policies** – On the societal scale, public perception of animal welfare will most likely change further and promote a transition in the region towards more extensive systems. There is also a popular vote scheduled on the national level to make organic welfare standards mandatory for all productions systems in Switzerland. Related to that, two other popular votes scheduled on the national level aim to ban the use of synthetic pesticides and one of them demands that animals kept on the farm should be fed exclusively with fodder grown on the farm (Trinkwasserinitiative).



## 15. MIXED FARMING AND GENERAL CROPPING (NORTH-EAST SCOTLAND, UNITED KINGDOM)

**KEY DILEMMA:** PRODUCING PUBLIC GOODS WHILST MAINTAINING VIABLE PRODUCTION OF PRIVATE GOODS AND SECURING ECONOMIC AND SOCIAL SUSTAINABILITY AT A FARM LEVEL.

**Performance and relevance of MPis** – Figure 15 illustrates the rankings of the 12 MPis. The highest mean score for performance was given to the Scottish Forestry Strategy (2019-2029) and Forestry Grant Scheme, followed by the Scottish Rural Development Programme (2016-2021). The lowest mean score for performance were given to the Food and Drink Strategy (and associated initiatives), and the Land Use Strategy (2016-2021). The highest mean score for relevance was given to the Scottish Agri-renewables Strategy, followed by Scotland’s Forestry Strategy (2019-2029) and the New Entrants Scheme. The lowest mean scores for relevance were for Scotland’s Organic Action Plan (2016-2020) and the Land Use Strategy (2016-2021).



**FIGURE 15 – MPI RANKING OF THE SCOTTISH CASE STUDY BASED ON PERFORMANCE AND RELEVANCE CRITERIA.**

**Potential for innovation** – Most of the market and policy instruments listed have been in existence for some time, so not innovative in terms of novelty. However, some instruments facilitate or support innovations (e.g., Rural Innovation Support Service for Scotland) which themselves are

novel (e.g. technologically), or are services providing knowledge and information rather than funding (e.g. Scottish Farm Advisory Service), research (e.g. Strategic Research Programme) and demonstration (e.g. Monitor Farms etc.) which generate innovations in processes and their uptake (e.g. farm practices). Two instruments which were new in the Scottish Rural Development Programme (2014-21) are those of the Agri-environment Climate Scheme, and those targeting New Entrants. Feedback on those instruments was mixed, with weaknesses reported in both, and a longer time period required for good quality evidence to become available on the impacts of each.

**Governance and implementation challenges** – A key challenge is to make new knowledge available to all relevant actors. The process of exchanging knowledge of findings from research and innovation needs to be effective if it is to create impacts that benefit all actors in the value chains. Amongst issues of significance, consideration requires to be given to: i) demands on the time and so the availability of contributors (e.g., farmers, advisors, researcher, policy); ii) the cost of access to and use of information; iii) accessing producers who might be less efficient, or have lower capacity for absorbing and implementing new and best practices. Without tackling such issues, the effectiveness of measures can be adversely affected. Currently, extensive opportunities are available for the provision of advice and co-learning. Information is provided through several different channels in different formats. Investment in the creation and exchange of new knowledge remains one important need. A key principle should be that no set of actors should be disadvantaged by lack of access to knowledge and information. With increased policy interest in nature-based solutions, there are emerging requirements for various actor groups of ‘nature skills’, about which discussions are taking place between public agencies and research groups. Opportunities could be created to pay for mechanisms of collaboration and cooperation between actors. The long-term impact sought would be the development of informal structures with strong peer support and enhanced social capital in an area. Changes in governance may be required, or could evolve, to lead to such increases in participation. Depending upon the remits and authority of the new Regional Land Use Partnerships in Scotland, they could contribute to new forms of relationships between actors with the potential to influence the relative power of different actor groups.

**Key opportunities brought by future policies** – The withdrawal of the UK from the European Union means that the Scottish (and UK) Governments are expected to have considerable scope to shape the future direction and content of policies and instruments relating to environment, agriculture and land use. The opportunity afforded could be taken to design mechanisms that increase the adoption of agro-ecological farming practices which are more closely tailored to Scottish conditions, and better reflect the diversity of Scottish farming systems. It also creates an opportunity to move away from blanket schemes to ones which are more specific to the needs and types of resources of different areas. The EU, UK and Scottish Governments have all commissioned recommendations or have emerging plans for supporting a Green Recovery from COVID-19. This combination of European and Scottish public policies sets a context for the transition to agro-ecological farming systems.

