



# REPORT

## NEW TOOLS FOR MONITORING AND EVALUATION: INSIGHTS FROM THE EVALUATION KNOWLEDGE BANK

GOOD PRACTICE WORKSHOP  
ONLINE, 20-21 OCTOBER 2021

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The Evaluation Helpdesk is responsible for the evaluation function within the European Network for Rural Development (ENRD) by providing guidance on the evaluation of RDPs and policies falling under the remit and guidance of DG AGRI's Unit C.4 'Monitoring and Evaluation' of the European Commission (EC). In order to improve the evaluation of EU rural development policy the Evaluation Helpdesk supports all evaluation stakeholders, in particular DG AGRI, national authorities, RDP managing authorities and evaluators, through the development and dissemination of appropriate methodologies and tools; the collection and exchange of good practices; capacity building, and communicating with network members on evaluation related topics.

Additional information about the activities of European Evaluation Helpdesk for Rural Development is available on the Internet through the Europa server (<http://enrd.ec.europa.eu>).

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## LIST OF ACRONYMS

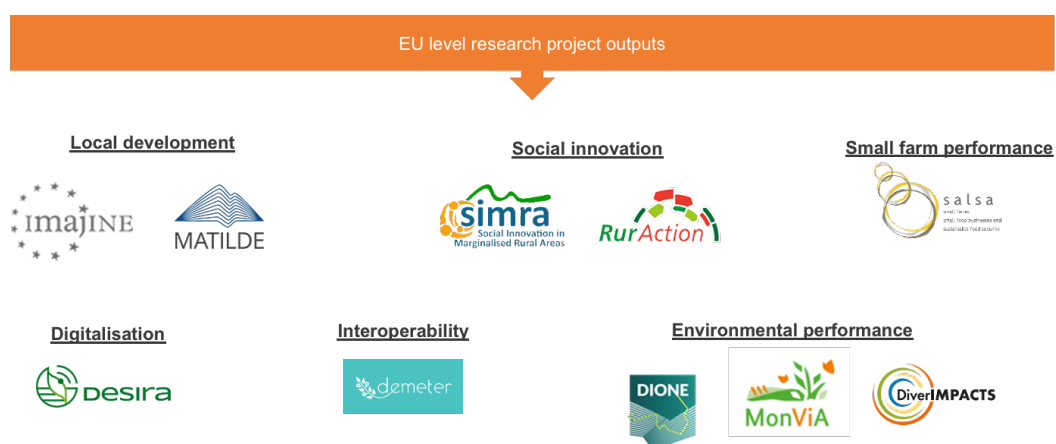
AI	Artificial Intelligence
AIM	Agricultural Information Model
AROPE	At risk of poverty or social exclusion
CAP	Common Agricultural Policy
EAFRD	European Agricultural Fund for Rural Development
EFA	Ecological Focus Area
EKB	Evaluation Knowledge Bank
ENRD	European Network for Rural Development
EO	Earth Observations
EU	European Union
FADN	Farm Accountancy Data Network
GDPR	General Data Protection Regulation
ICT	Information and Communication Technology
IT	Information Technology
LAGs	Local Action Groups
MA	Managing Authority
MS	Member State
NGO	Non-governmental Organisation
NRN	National Rural Network
NUTS	Nomenclature of Territorial Units for Statistics
PA	Paying Agency
RDP	Rural Development Programme
WP	Work Package

## EXECUTIVE SUMMARY

The 18th Good Practice Workshop of the Evaluation Helpdesk, 'New tools for monitoring and evaluation: insights from the Evaluation Knowledge Bank', took place online on 20-21 October 2021. It brought together 127 participants from 21 different EU Member States, as well as participants from the UK and Serbia. These participants included RDP Managing Authorities, evaluators, European Commission representatives, researchers, National Rural Networks, and other evaluation stakeholders. The overall objective of the workshop was to build evaluation knowledge based on the innovative outputs of EU level research projects in relation to data management systems and tools.

Outputs from a total of 10 EU level projects were presented (some including online demonstrations) during the two-day workshop, covering the topics of local development, social innovation, digitalisation, interoperability, small farm performance and environmental performance. The presented outputs can serve the needs of CAP evaluation stakeholders by providing new indicators, new data and methodologies that may help answer evaluation questions or get inspiration for new ones, obtain data and information for existing or new indicators as well as offer insights and inspiration in relation to methodological approaches and tools.

The presentations together with the outcomes of the discussions between researchers and evaluation stakeholders, provided insights in relation to the relevance of outputs produced by EU level research projects for monitoring and evaluations of the CAP.



## 1 SETTING THE FRAME

### 1.1. Introduction

Data management is a core element for evaluations. Good data infrastructure systems, efficient data collection and monitoring frameworks and tools contribute to produce robust and evidence-based evaluations, whose results can then inform better policy implementation and future policy design.

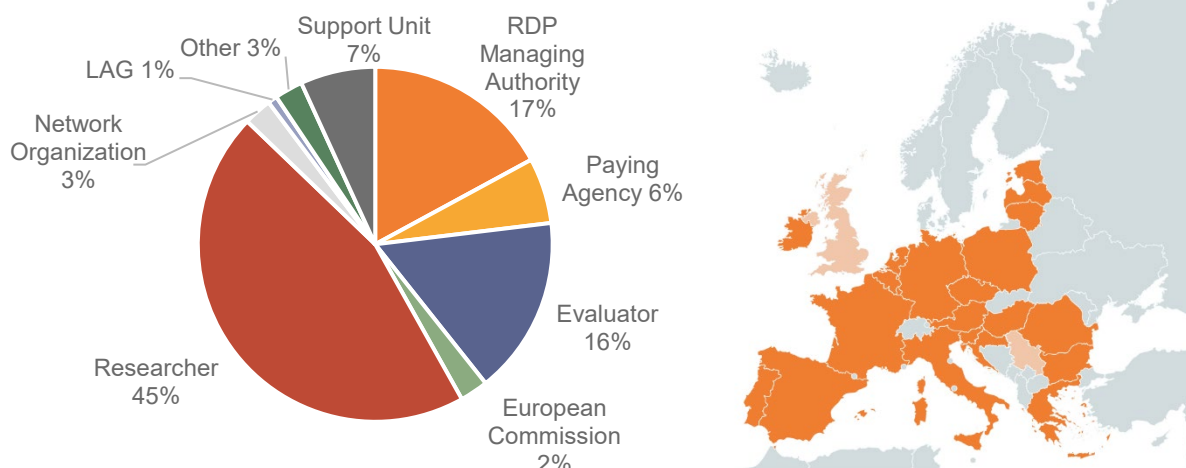
The Evaluation Helpdesk has put data management at the centre of its agenda in 2021 through its good practice workshops and its thematic working group 'Taking stock of the EU-level initiatives and projects for improving data management and information systems for the purpose of monitoring and evaluation' activities. The result of these activities has been an [Evaluation Knowledge Bank](#) which provides insights into various outputs developed in the context of projects at EU and Member States levels concerning data infrastructures and data use. The Evaluation Knowledge Bank takes stock of recently completed and currently running research projects' experiences that include innovative and state of the art systems and tools for better data collection, management and monitoring. It further explores the relevance of these systems and tools for monitoring and evaluation of the CAP.

This knowledge bank is particularly relevant as Member States are approaching the end of the programming period, which paves the way for planning the ex post and is also marked by the preparation of the CAP Strategic Plans post-2020. Its content has been validated by dedicated Task Forces composed of experts, researchers and practitioners that are involved in producing or using these outputs.

Against this background, the overall objective of the Good Practice Workshop (GPW) No 18 was to **build evaluation knowledge based on the innovative outputs of EU level research projects in relation to data management systems and tools**. It specifically aimed at: exchanging and sharing experiences from existing outputs of EU level research projects/studies and data management practices that can be used for evaluations of the CAP; discussing specific issues that can facilitate or hamper the incorporation of identified [data collection, management and monitoring] outputs into evaluation at Member State level; and identifying needs for further support, principally for Managing Authorities (MAs), Paying Agencies (PAs) and evaluators, as well as for data providers, in relation to using research project outputs for future CAP evaluations.

127 participants from 21 different EU Member States, as well as participants from the UK and Serbia, attended the online event, including RDP Managing Authorities, evaluators, European Commission representatives, researchers, National Rural Networks, and other evaluation stakeholders.

**Figure 1. Participants of the Good Practice Workshop per role and Member State**



## 2 SHARING EXPERIENCES

### 2.1 Day 1

Mr Valdis Kudins (Evaluation Helpdesk) opened the workshop with an overview of why and how EU level research can be useful for CAP evaluations. He described the rationale of the Evaluation Knowledge Bank (EKB), the process of building it and the method for populating it with EU and national level research project outputs. Mr Kudins guided participants through an online demonstration of the EKB, its key features, how to use it and its relevance for future CAP evaluations.

#### 2.1.1 Topic: Local development

Ms Parissaki (Evaluation Helpdesk) introduced the topic and the IMAJINE and MATILDE outputs, which provide indicators that can be used for measuring the contribution of CAP interventions to local development and to employment and social inclusion, including of third country nationals. They also provide new data that can be used for the calculation of context indicators or for indicators on growth and poverty rate in rural areas. Finally, MATILDE also offers a mixed method that could be used to evaluate the CAP impact on social inclusion of third country nationals and contribute to social inclusion result indicators.

#### IMAJINE project outputs

Mr Michael Woods (IMAJINE Project, Aberystwyth University) presented two outputs from the IMAJINE project: the local level database for socio-economic indicators and the composite indicator for local development. These outputs offer new data and new indicators for local development. The database includes estimated local level data for indicators of socio-economic inequalities modelled through the disaggregation of NUTS2/NUTS3 level data using spatial data estimation techniques. It can be used for identifying baseline indicators for evaluation and for assessing geographical impacts relative to local patterns of inequality. The composite indicator is an experimental construction of a multi-dimensional indicator of levels of local development and indicator, showing overall index and identifying the most significant factor explaining inequalities between local territories. It can be used for connecting the evaluation of programme outcomes to drivers of geographical inequalities at the local scale.

**Link to the presentation:** [New data and new indicators for local development \(IMAJINE\)](#)

#### MATILDE project outputs

Mr Andrea Membretti (MATILDE Scientific Head, University of Eastern Finland) and Mr Tobias Weidinger (University of Erlangen-Nuremberg, Germany) presented three outputs of the MATILDE project: the MATILDE mapping, which is a visual, cartographic representation of the regions under study focusing on their territorial, socio-economic and socio-demographic characteristics; the MATILDE Matrix, which is a mixed method data collection framework to comprehensively assess the impact of third country nationals on rural and mountain areas; and the MATILDE Toolbox, which is a set of techniques for quantitative and qualitative data collection and analysis that can be used for the assessment of impacts of migration on local development.


**Link to the presentation:** [Data collection framework and methodologies for migration impacts \(MATILDE\)](#)

For more information on IMAJINE and MATILDE:

- <https://matilde-migration.eu>
- <http://imajine-project.eu>



After the presentations, participants posed the following questions to the presenters:

 <p><b>Regarding data reliability and accuracy in IMAJINE project outputs:</b> many of the sources of the data are limited. Also, there are no estimates of the data quality, nor in terms of the timeliness of the information. Have these issues been tested to address the reliability, or to quantify the accuracy of indicators? The expectations (and opportunities) of Open data and Open Science increase. It may be appropriate to consider the types of accuracy or reliability statements of the data shared, as it may be needed in the metadata of data made available for open use.</p>	<p><i>Mr Woods clarified that the project used the data available at regional level through Eurostat, which was disaggregated according to other data coming from the national statistics institute. There is confidence on the quality of the data. An estimation cannot be sure 100%. There are gaps in the sources which may leave some open room to problems.</i></p>
<p><b>How was the participation and engagement of the municipalities motivated in the MATILDE project?</b></p>	<p><i>Mr Weidinger explained that municipalities are interested to know more and to have statistics on the topic of third country nationals. Mr Membretti highlighted that using a participatory research approach facilitates the involvement of research partners. Municipalities thus understand the usefulness of the research for their own development. A consortium was created, where all partners were at the same level and had the same opportunity.</i></p>
<p><b>Is MATILDE project considering including 'leisure migration' e.g., after retirement?</b></p>	<p><i>Mr Weidinger clarified that MATILDE is so far only interested in migration coming from third countries. Mr Membretti explained that the research covers regions which have been experiencing, in the last 20 years, some reversal trends in terms of internal migration, retired people, middle class people for teleworking, etc. Since impact happens within a mixed population, this mix of population must be considered as a driver for social innovation and local development.</i></p>
<p><b>Will the synthesised datasets, based on official sources, that MATILDE project has been working on, be openly available?</b></p>	<p><i>Mr Membretti clarified that, following the indication from the EU, some datasets are already available in the MATILDE repository, and all of them will be available by the end of the project.</i></p>

### 2.1.2 Topic: Social innovation

Ms Parissaki (Evaluation Helpdesk) introduced the topic and the SIMRA and RurAction outputs, which offer new data and methodologies that can be relevant for answering evaluation questions related to the contribution of social innovation to increased participation or increased sales or competitiveness or local development. The methodologies can offer additional qualitative and quantitative information for evaluating innovation, especially social innovation. They may also address Local Action Group (LAG) needs, e.g. on how to assess the impact of social innovation projects.

### SIMRA project outputs

Ms Laura Secco (Dept. Territorio e Sistemi Agro-Forestali TESAF, University of Padova, in Italy), presented two outputs in relation to "the Evaluation of social innovation in rural areas: a novel method developed by SIMRA H2020 project". The first output is a database of examples of social innovation and the second is an *ad hoc* developed methodology for evaluating social innovation in marginalised rural areas. The methodology consists of an evaluation framework, a set of integrated quantitative and qualitative tools for data collection and analysis and guidance through an Evaluation Manual. The evaluation framework proposed by SIMRA is based on the project's experience gained by empirically testing the method on a significant number of cases, and critically reviewing an exhaustive number of previously existing evaluation frameworks. SIMRA proposes a rapid evaluation approach to recognize if an initiative is a social innovation (e.g. for eligibility purposes), a detailed approach to deepen the understanding of key elements of the social innovation (e.g. features of actors' networks), and a conventional approach to measure relevance, efficiency, effectiveness, impact, and sustainability. All are based on quantitative indicators, aggregated into composite indexes when useful.

**Link to the presentation:** [Evaluation of social innovation in rural areas: a novel method developed by SIMRA H2020 project - Overview](#)

### RurAction project outputs

Ms Marina Novikova (PhD candidate in Sociology, ISCTE-IUL, Portugal) presented the RurAction methodological framework for assessing the impact of social innovation, including the background of this framework, the dimensions of impacts of social innovation and the mixed method approach for data collection. The proposed methodology takes into account the complex reality of rural regions. She concluded with some challenges for impact assessment of social innovations including the lack a commonly agreed set of indicators for social innovation, the intangible character of some social innovations and their impacts or the difficulties to assess causality of social innovation projects.

**Link to the presentation:** [Social innovation and \(social\) impacts: an exploratory study for assessing the impacts of social innovation](#)

For more information on SIMRA and RurAction:

- <http://www.simra-h2020.eu>
- <https://ruraction.eu>

*No questions were asked after the presentations, participants discussed issues in the group discussions.*

#### 2.1.3 Topic: Environmental performance

Mr Dimitris Skouras (Evaluation Helpdesk) introduced the topic and the DIONE project which addresses environmental issues with very innovative solutions offering data that may be of interest for evaluators. It uses a mix of many different technologies that advance and refine the results of previous projects, while using a lot of complementary data from external data sources. Thus, the conventional earth observation technology is complemented by drones, geotagged photos, field sensors that provide high resolution and timely data.

### DIONE project outputs

Mr Valantis Tsiakos (I-SENSE Group, Institute of Communication & Computer Systems) presented the integrated earth-observations (EO) based toolbox for modernizing CAP area-based compliance checks and assessing respective environmental impact. The DIONE outputs relevant for evaluation include: the earth observation based area monitoring system, which combines free and open Sentinel data with high resolution drone and commercial data; the geotagged photos and soil property maps, which


improve location accuracy and rely on direct communication with PAs; the environmental performance tool whose indicators can be used to show progress towards fulfilling the EU standards on good agricultural and environmental condition of land.

**Link to the presentation:** [DIONE: an integrated EO-based toolbox for modernizing CAP area-based compliance checks and assessing respective environmental impact](#)

For more information on DIONE:

- <https://dione-project.eu>

*After the presentations, participants posed the following question to the presenter:*

 <p><b>Will data collected be available at some stage?</b></p>	<p><i>Mr Tsiakos explained that the plan is to create spatial data infrastructure, including a catalogue, which can be used in a practical way.</i></p>
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## 2.2 Day 2


### 2.2.1 Policy and evaluation framework

DG AGRI Unit B.2 (Research and Innovation) opened Day 2 with an overview of the Common European Agriculture Data Space and related initiatives as well as their indicative timing and their possible contribution to and/ or relevance for policy monitoring and evaluation efforts. The presentation showed the background and perspectives of the Common European Agriculture Data Space and the framing legal initiatives (the Data Governance Act, the Data Act, the Implementing Act on High Value Data Sets and the Digital Markets Act). Insights into Horizon Europe and examples of relevant calls that support the digital transformation of agriculture, rural communities and policy systems were also provided, as well as information on the development of the proposal of the Horizon Europe candidate partnership “Agriculture of Data”, which is to support sustainable agricultural production and policy monitoring and evaluation capacities through the use of data technologies and earth observations.

**Link to the presentation:** [The common European agriculture data space and related initiatives](#)

Mr Dimitris Skuras (Evaluation Helpdesk) complemented the presentation by stressing that evaluators in the past have encountered issues related not only to the fragmentation of data sources but also to the low level of data reuse. Legal and technical barriers have also been frequent due to imperfect and unclear data governance (who has the data, who can use it, and for what purpose). Nowadays, new technologies that generate massive amounts of data potentially useful to evaluators can address all these issues. Earth observations, the internet of farming, with all the technological equipment that monitor the product and the environmental sustainability of the production methods, the health and safety of the consumer, and the welfare of the animals. Sharing and pooling private and public data for monitoring and evaluation has a great potential to facilitate the work of evaluators.

*After the presentation, participants posed the following questions to the presenter:*

 <p><b>How was the broad issue of human ethics being built into the evolution of the programme been dealt with? For example, qualitative data relating to agriculture and related topics.</b></p>	<p><i>DG AGRI Unit B.2 highlighted that this is an important point especially when going one step beyond the use of the data and data technologies that are applied. More important than GDPR specifications is the question of what the application of the data technologies is, and in which way they are used. Participants were invited to follow the development of the legal discussions on the matter, particularly on the Act on</i></p>
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*AI, which is intended to apply to all sectors. For all cross-sectoral legislation in the field of data, data governance, and digitalisation, it is indeed challenging for legislators to propose solutions suiting all sectors, and it would be important that all relevant stakeholders proactively follow the development of such legal acts.*

### 2.2.1. Topic: Digitalisation

Ms Marili Parissaki (Evaluation Helpdesk) introduced the topic and the DESIRA outputs. The DESIRA inventory of digital tools offers new data useful for raising awareness on technological innovations, what they are, how many, where they are used and if they are supported by policy. It also offers additional information on use of ICT in rural areas. The DESIRA model of broadband access impact on economic growth may help assess impact of interventions that aim to digitalise rural areas at NUTS3 level. It may also help measure the Farm to Fork objective 'to accelerate the roll-out of fast broadband internet in rural areas to achieve the objective of 100% access by 2025'.

#### DESIRA project outputs

The coordinator of DESIRA project (researcher from the University of Pisa UNIPI) offered an overview of the DESIRA project conceptual framework and its outputs with relevance for evaluation, notably, the inventory of digital tools and the model for measuring broadband access impact on economic growth. Digital technologies can be used in different application scenarios (agriculture, forestry, rural areas) and produce economic, environment, governance and social impacts. Modelling broadband impact included and analysis at NUTS3 level of broadband distribution and an analysis of its impact on growth in rural areas.

**Link to the presentation:** [DESIRA: an overview](#)

For more information on DESIRA:

- <https://desira2020.eu>
- Link to the Gnomee tool (inventory of digital tools): <https://www.gnomee.eu/>

*No questions were asked after the presentation, participants discussed issues in the group discussions.*

### 2.2.2. Topic: Interoperability

Mr Dimitris Skuras (Evaluation Helpdesk) introduced the topic and the DEMETER outputs. He stressed that interoperability helps consolidate the fragmented databases and offer data that match evaluation objectives. New datasets, private and public data, may become available to evaluators, facilitate the estimation of result and impact indicators, and answer evaluation questions.

*'Interoperability is the gate to the evaluator's paradise of data and DEMETER promises to be the gatekeeper'*

#### DEMETER project outputs

Ms Ioanna Roussaki (Assistant Professor, National Technical University of Athens, Greece, Institute of Communications & Computer Systems -ICCS) offered an overview of the DEMETER concepts and objectives, starting from the sectoral challenges that research and innovation are trying to address. Against this background DEMETER aims, amongst others, to enhance existing information models and to deliver an Interoperability Space for the agri-food domain and use a core set of open standards coupled with security and privacy protection mechanisms. The Agricultural Information Model (AIM) is a response to data interoperability challenges. It uses a large variety of data types, both generic and specific to the agri-food domain. The model consists of five parts: a core meta model, a cross-domain

ontology, domain-specific ontologies (e.g., agriCrop, agriProduct, etc.), and pilot-specific ontologies (e.g., field operations) nutrient monitor, etc.) and a metadata schema.

**Link to the presentation:** [DEMETER: Data Driven Innovation in the Agrifood sector](#)

For more information on DEMETER:

- <https://h2020-demeter.eu>

*No questions were asked after the presentation, participants discussed issues in the group discussions.*

### 2.2.3. Topic: Small farm performance

Ms Marili Parissaki (Evaluation Helpdesk) introduced SALSA and its outputs. Crop type area **and crop production estimation for small farms and crop type maps** offer new data on production volumes that could be used to calculate impact indicators and assess the potential impact of CAP interventions on small farm production capabilities. SALSA also offers methodologies (e.g., mapping the distribution of small farms in Europe, quantification of the contribution of small farms to local food systems and food and nutritional security) that may offer additional information for triangulation or help assess the effectiveness of interventions in small farms for contributing to food security.

#### **SALSA project outputs**

Ms Teresa Pinto Correia (Coordinator, University of Evora) presented the SALSA approach and conceptual framework and some of the specific outputs such as the crop type maps which were created for 20 NUTS3 regions and were used to estimate the crop production in these regions. The methodology used combined satellite data and field work. The small farm capacity to cover regional consumption was also estimated, relating production estimates from SALSA to consumption estimates from public data sets. A survey with direct interviews to 800 small farms in 25 regions in Europe led to the creation of a new typology of small farms in Europe, which demonstrates that all small farms connect to the market but the extent of their market orientation is a differentiating factor. The project has also produced 25 regional reports for European regions that describe the contribution of small farms to local food systems using a methodology that combined statistics and participatory approaches (interviews and focus groups). This methodology may be useful to understand the intervention logic of interventions related to farm resilience and how policy is designed to address the needs of small farms.

**Link to the presentation:** [SALSA: Small farms, small food businesses and sustainable food and nutrition security](#)

For more information on SALSA:

- <http://www.salsa.uevora.pt>

*No questions were asked after the presentation, participants discussed issues in the group discussions.*

### 2.2.4. Topic: Environmental performance

Mr Dimitris Skuras (Evaluation Helpdesk) introduced the topic and the outputs of two projects (MonVia and DiverIMPACTS). He started by highlighting the difficulties in evaluating biodiversity. It is not about the Farm Bird Index but how to organise an integrated and coherent evaluation that will capture all the different effects of RDP measures on biodiversity. MonVia shows how biodiversity monitoring is designed and implemented in Germany as a complement to existing approaches. At the same time, diversification was the primary environmental strategy of Pillar 1, and DiverIMPACTS gives many ideas of when diversification strategies are evaluated.

#### **MonViA project outputs (Petra Dieker)**

Ms Petra Dieker presented MonViA's approach for monitoring of biological diversity in agricultural landscapes in Germany. The emphasis of her presentation was wild bee monitoring, for which a

database will be created on the status and development of wild bees in agricultural landscapes (at national level, agricultural landscape units) by integrating volunteers in monitoring activities using non-lethal sampling approaches and reporting results through a national wild bee indicator. Ms Dieker also stressed the potential of citizen science-based methods for monitoring and evaluation.

**Link to the presentation:** [MonViA: Monitoring of biological diversity in agricultural landscapes in Germany](#)

### **DiverIMPACTS project outputs**

Mr Antoine Messéan presented the DiverIMPACTS approach that offers new experimental data on eight categories of expected impacts of crop diversification including lower environmental impact of diversified cropping systems and improved delivery of ecosystem services and biodiversity. After describing the indicators used in field experiments and the structure of the field experiment database, Mr Messéan discussed the relevance of this database to support monitoring and evaluation, notably by providing information on the possible impacts of diversification through a range of indicators. Although field experiments are not representative of all possible cropping systems and all regions or countries, they can be used as references. He also stressed that these data should be used in combination with multicriteria and multiscale assessment tools.

**Link to the presentation:** [Diversification through Rotation, Intercropping, Multiple cropping. Promoted with Actors and value Chains Towards Sustainability \(2017 2022\)](#)

For more information on MonVia and DiverIMPACTS:

- <https://www.agrarmonitoring-monvia.de/en/>
- <https://www.diverimpacts.net/index.html>

*No questions were asked after the presentation, participants discussed issues in the group discussions.*



### 3 CONCLUDING REMARKS

The outcomes of the discussions on the different project outputs presented at the workshop, their practical application and expert input, together with the group discussions, provided insights on their relevance for CAP evaluations. The detailed outcomes of the group discussions are included in the **Annex**.

#### Relevance of IMAJINE and MATILDE outputs for evaluations of CAP interventions in the field of local development

- The provision of new indicators such as, '[IMAJINE composite indicator for local development](#)' and the '[MATILDE indicators](#)' for capturing the social dimension of third country national's participation to local life or the economic impacts of migration at the local level, may help connect programme outcomes to drivers of geographic inequalities at the local scale.
- These new indicators can also help measure the contribution of CAP interventions to local development and to employment and social inclusion, including for specific target groups that may represent an important share of the rural populations in the future, such as migrants.
- The [IMAJINE local level database](#) offers a proxy for income, i.e. useful for calculating the rural GDP indicator of the CAP, but goes also beyond that to collect more data at the local level to analyse the spatial distribution of inequality. This is relevant for LAG's local development strategies, since it is important to have local level data in order to develop local-based policies and then evaluate them using this data.
- The [MATILDE Toolbox](#) provides a list of tools (quantitative and qualitative mix methods) for the assessment of the impacts of migration, especially in rural remote mountainous regions.

#### Relevance of SIMRA and RurAction outputs for the evaluation of CAP interventions in the field of social innovation

- The [SIMRA database of social innovations in marginalised rural areas](#) can help answer questions on how, why and under what circumstances and on the basis of which factors has social innovation increased participation, or sales or supported competitiveness or improved environmental resources.
- It is also an example of how to identify social innovation, even when it is in its initial phases of the process, and what data to collect or what types of information to seek.
- Both the [SIMRA](#) and [RurAction](#) methodologies for evaluating social innovation in rural areas and their impacts can help answer evaluation questions directly or indirectly related to local development (e.g. 'how and to which extent has a social innovation responded to societal challenges?' or 'how does it engage civil society?').
- Social innovation can cross different policy areas and both the projects' outputs stress the importance of recognising social innovation, raising awareness, and making it measurable. The methodologies offered by the EU level projects can help evaluators assess how social innovation contributes to macro targets, such as the Green Deal targets, or at a micro level, what are the impacts of individual social innovation projects/interventions in a certain context.
- The methodological approaches created by SIMRA/RurAction projects can serve as a benchmark for evaluations of social innovation in rural areas and what is delivered. However, a working definition of social innovation has to be clearly stated when applying any of these approaches, e.g. using those provided by the projects, to guarantee a correct application of the methodology and interpretation of the results.

### Relevance of SALSA outputs for evaluations of CAP interventions targeting small farms

- Small farms and small farm businesses constitute a significant source of sustainable food production within many regional food systems. They also contribute significantly to the diversity of food systems, and hence their resilience and stability. For these reasons, the SALSA '[Methodology for mapping the distribution of small farms in Europe](#)' output can help one to understand the intervention logic of CAP interventions related to farm resilience and food sustainability.
- SALSA is valuable for its capacity to make small farms visible, which are often not in official statistics. The [crop area and crop production estimation of small farms](#) and the [crop type maps](#) provide additional, remote sensing and accurate data which complements FADN. Crop types, area extent or yield estimates are examples of data for small farms that may be used for CAP indicators related to farm productivity.
- The '[methodology for quantification of the contribution of small farms to local food systems and food and nutritional security](#)' output offers a mixed approach combining official statistics, interviews and focus groups and various data/information sources that can help assess the effectiveness of interventions in small farms for contributing to food security.

### Relevance of DESIRA outputs for CAP evaluations in relation to digitalisation

- The '[Inventory of digital tools](#)' output is a collection of around 700 digital tools (software applications, adverse sensors, etc.) that can be used in agriculture, forestry and rural areas. The inventory can raise awareness on technological innovations, what they are, how many, where and if they are supported by policy. It also offers additional information on the use of ICTs in rural areas. To better link these digital tools to evaluation, the project coordinators will classify them according to their relevance for evaluation. For instance, there are tools that can offer data on irrigation, air quality monitoring and tourism.
- DESIRA offers a [quantitative \(econometric\) model](#) that measures the impact of broadband access on economic growth. The novelty is doing so at regional level, because previously it was only achievable at the national level. In this way, it opens a new door to impact assessment at NUTS 3 level where many interventions are implemented. It can help assess impacts of interventions that aim to digitalise rural areas or measure the Farm to Fork objective 'to accelerate the roll-out of fast broadband internet in rural areas to achieve the objective of 100% access by 2025'.

### Relevance of the DEMETER model for interoperability in CAP evaluations

- The [DEMETER 'Agricultural Information Model'](#) (AIM) expands interoperability of information among, but not restricted to, several data domains, including farm crop data, earth observation data, livestock data and traceability of products, meteorological and open spatial data including weather data, agricultural machinery data, data on farmers' preferences including farmers' needs related to cost optimisation and production issues, disease monitoring, yield analysis, animal welfare tracking and much more.
- In this way, this tool offers a vast amount of data to support impact and result indicators that are difficult to estimate. It can also support the calculation of new result and impact indicators, especially concerning the resilience of agriculture, environmental sustainability, and climate action.



## Relevance of DIONE, MonVia and DiverIMPACTS outputs for CAP evaluations of environmental performance

- The DIONE [maps of crop-types and non-productive EFAs](#) offer data on crop type maps and maps of permanent pastures and non-productive EFAs (fallow land, hedges, trees, buffer strips, ponds, ditches, and other landscape features). Due to their resolution, the maps can provide a detailed spatial allocation of crops more finely and precisely than CORINE for all farmers in an area, including beneficiaries and non-beneficiaries of various measures.
- These crop type maps and the [soil property maps](#) constructed by field sensors offer very high resolution, accurate and timely data.
- The DIONE Artificial Intelligence (AI) based '[Environmental Performance Tool](#)' output provides layered maps that integrate multiple monitoring sources. It also includes an 'environmental scoreboard', which is the consolidation of nine environmental indicators through AI methods that can be used to evaluate the environmental effects of the CAP at a regional scale.
- The MonVia '[trend monitoring on biodiversity in agricultural landscapes](#)' output offers data on the diversity of habitats and functional groups (e.g. pollinators) and other organism groups relevant for agroecological systems. It can help assess the impacts of CAP interventions on pollination.
- The MonVia 'Question-based monitoring approaches at the scale of agricultural landscape units' output can be used to assess the effectiveness of agri-environmental measures on biodiversity. More specifically, [citizen-science based monitoring](#) is an innovative solution relying on a network of volunteers that can help sustain data collection for monitoring and evaluation in the long term.
- The [DiverIMPACTS database of field experiments](#) offers evaluators information on the possible impacts of diversification and, where possible, quantifies the criteria of expected impacts which can be used for estimating various indicators. However, monitoring data on birds or any other kind of indicator, needs to be complemented with an analysis of farm practices to make it more relevant for evaluators.

## ANNEX

The presentations of both days were followed by group discussions where participants had the opportunity to ask detailed and technical questions to the presenters, discuss and exchange with other project representatives and project members who tested or used the outputs as well as see live demonstrations of some of the outputs presented in the plenary. The outcomes of the group discussions are summarised in the following tables.

### GROUP DISCUSSIONS: Day 1

#### Local development (IMAJINE and MATILDE outputs)

Project representatives present in the group discussions:

	Coordinator	Partners/project members
IMAJINE	Michael Woods (coordinator)	Ana Viñuela (University of Oviedo)
MATILDE	Andrea Membretti (coordinator)	Tobias Weidinger Mia Scotti

Summary of discussions	
<b><i>Relevance for CAP indicators</i></b>	<p>Greece raised the question as to whether IMAJINE provides data for social indicators used to evaluate the social aspects of the CAP: rural employment, rural poverty and rural GDP.</p> <p>IMAJINE analysed rural inequalities by collecting local data going beyond NUTS3 regions, LAU 2 regions or LAU 1 regions, covering the full country. Inequality was measured with GDP (urban as well as rural), for 2011.</p> <p>However, GDP is not an exclusive way of measuring inequality. There is a need to go beyond the GDP and consider spatial aspects, so IMAJINE considered also the spatial distribution of inequality. It looked at the 'winning driver', which refers to the variable which is most important in explaining the inequalities at a local level.</p> <p>Data collected: poverty rate (AROPE), information on employment, on immigrant population, regarding demographic and socio economic figures and a proxy for income.</p> <p>With this data, a composite indicator was developed which is useful for evaluating inequalities at local level.</p>
<b><i>Relevance for developing local based policies</i></b>	<p>It is important to have data at local level to develop local-based policies. Also, to evaluate at this level, local data is needed. Without this, the only way to understand what is really happening is through case studies, but it is impossible to cover all regions in all countries via case studies.</p> <p>The situation differs between countries. For example, Germany did not provide micro census data of their citizens at local level, due to transparency and privacy issues. They only provided data on the region (lander).</p>

<b>Assessing the impacts of migration</b>	<p>MATILDE is looking at rural remote mountainous regions and why they receive an important flow of immigrants. Motivations may include job offers or other motivations, dispersal policies for asylum seekers/resettled refugees.</p> <p>Quantitative information on irregular migration is scarce, but phenomenon may be captured in the local case studies, e.g. by means of qualitative methods.</p> <p>IMAJINE analyses the relationship between migration and inequality, based on a <a href="#">qualitative analysis</a>.</p>
<b>Further references suggested</b>	<p>MATILDE Manifesto, the Renaissance of Remote Places: <a href="https://matilde-migration.eu/blog/matilde-manifesto-the-renaissance-of-remote-places/">https://matilde-migration.eu/blog/matilde-manifesto-the-renaissance-of-remote-places/</a></p> <p>Spatial Disaggregation of Social Indicators: An Info-Metrics Approach Esteban Fernandez-Vazquez, Alberto Diaz Dapena, Fernando Rubiera-Morollon &amp; Ana Viñuela Social Indicators Research volume 152, pages809–821 (2020).</p>

### Social innovation (SIMRA and RurAction outputs)

Project representatives present in the group discussions:

	<b>Coordinator</b>	<b>Partners/project members</b>
SIMRA	Laura Secco Elena Pisani David Miller	Elena Gorriz Krizstina Dobay (external user of SIMRA)
RurAction	Marina Novikova	Clara Lourenco

Summary of discussions	
<b>Defining social innovation</b>	<p>The first step is to use a common working definition of social innovation.</p> <p>Social innovation goes across different policy areas. A common working definition helped identify what is common across these areas which may have been overlooked if the projects had looked at initiatives with usual lens.</p>
<b>Evaluating social innovation</b>	<p>The first step here was to create a database of social innovations as well as a method for evaluating them. The database can offer examples of social innovations that can be used as benchmarks and peer learning across different contexts, in particular in relation to drivers in the Green Deal. Validation and quality control of the database is required.</p> <p>The presence of a solid framework for evaluating social innovation is crucial. There are three components of social innovation to be evaluated: the process (the interaction of actors, the birth of a new idea), the project (putting the idea into practice through the interaction of different actors) and the effects of the social innovation implementation.</p>

	<p>Both micro and macro level evaluations of social innovation are necessary. For instance, macro level evaluations would look at the contributions of social innovations to broader policy targets such as the Green Deal.</p> <p>The examples created by SIMRA/RurAction can serve as benchmark for evaluations of social innovation and what is delivered.</p> <p>Evaluations over a longer time period of time would allow comparable impacts, which reflect changes in the contexts of communities.</p> <p>SIMRA provides a robust theoretical model to link social innovation with quantitative indicators and qualitative analysis, while cases serve as benchmark to disclose the theoretical model to practitioners and make recognizable what they do.</p>
<b><i>Raising awareness on social innovation</i></b>	<p>It is important to recognise social innovation, create awareness and make it measurable.</p> <p>There are two levels on which awareness can be raised: first, for the implementers of social innovation initiatives who are often not aware that they actually do social innovation; second, demonstrate to others the value of what is being done in the territory and the use of the results of evaluations can help raise awareness to this end.</p>

### Environmental performance (DIONE outputs)

Project representatives present in the group discussions:

	<b>Coordinator</b>	<b>Partners/project members</b>	<b>Demo</b>
DIONE	Valantis Tsiakos	George Galanis and colleagues	Nejc Vesel, Georgios Gkotsis (maps and environmental performance tool) and colleagues

Summary of discussions	
<b>Project's Features</b>	DIONE estimates soil properties (e.g. pH, electrical conductivity, etc.) and the Soil Organic Carbon by the construction of spatially explicit indicators which will be made available through a Database Management System, and used by the environmental performance tool.
<b>Innovativeness</b>	The soil property map based on the analysis of different soil data seem to be the most cost-effective alternative when soil maps do not exist.
<b>Applicability/ Transferability/ Scalability</b>	The scaling up of the project may require some financial support and willingness among the actors involved (e.g. PAs) to overcome some legal issues (e.g. privacy). Moreover, the integration with IACS and LPIS should be clarified given the bureaucratic differences between MS. The approach could be however used at Case Study level.

<b>Usefulness for evaluation</b>	<p>Soil maps provide information about the characteristics which are being evaluated (e.g. soil erosion or soil organic carbon), and can support the assessment of other indicators such as water abstraction and water quality.</p> <p>Such type of observation, hence, can also encourage the use of counterfactual approaches (supported vs non supported).</p>
<b>Future opportunities and challenges</b>	<p>The DIONE's tool will require a period of testing and calibration before it can be fully functional.</p> <p>Moreover, some challenges can be seen in aligning the time frame of the observation made through the project and that of the RDP, as effects as (minimizing) soil erosion must be seen with reference to the actions taken by the Program.</p>

## GROUP DISCUSSION: Day 2

### Digitalisation (DESIRA outputs)

Project representatives present in the group discussions:

	<b>Coordinator</b>	<b>Demo by project partners</b>
DESIRA	Coordinator	<p>Michael de Clercq (University of Gent): demo of modelling broadband access impact)</p> <p>+</p> <p>Eleni Toli, Panagiota Koltsida, Manlio Bacco (ATHENA, University of Athens, department of informatics, Institute of Information Science and Technologies, National Research Council (CNR, Pisa, Italy): demo of inventory of digital tools</p>

Summary of discussions	
<b>Features of the inventory of digital tools (GNOME tool)</b>	<p>The objective was to collect a number of digital tools: software applications, adverse sensors, etc. Whatever can be used for agriculture, forestry, rural areas, in order to get an overview, a picture of the digital tools available and that can be used. Approximately 700 which can be searched through GNOME interface.</p> <p>The inventory includes digital technologies that can be considered as potential digital game changers in the fields of agriculture, forestry, rural areas, as well as digital technologies, for instance, social media or cloud computing possibilities. Those digital technologies are the ingredients thanks to which different recipes can be put together, and those recipes are the digital tools which are in the inventory.</p> <p>The technologies are categorised and clustered. Searching and browsing of the tool can be performed.</p> <p>Those tools can be applied into a given context, like for instance the living lab. The potential impact of those tools can then be studied. It is important to bear in mind that the aim of the</p>

	<p>project is not an evaluation purposes, but getting a picture of the digital tools in rural areas and the agriculture. GNOME is an assessment tool to identify technologies that are related to a specific domain and see which one best fits for certain purposes.</p> <p>The tool is a source of knowledge and inspiration for living labs, scenario analysis and also evaluation.</p>
<b><i>Living labs: a methodology for policy decision-making</i></b>	<p>Living labs are groups of people. They are selected on the basis of a motivation to work on a specific problem, called 'focal question', the object of the analysis. After this, people who are involved in this problem are contacted: farmers or farmers advisors, technicians and technology developers. The methodology is: interviews, workshops, gathering of further data for validation on the context. A SWOT analysis is conducted on the specific problem, and potential future scenarios (one realistic and one pessimistic) are developed for conducting scenario workshops.</p>
<b><i>Relevance of the inventory of digital tools (GNOME) for evaluators</i></b>	<p>For evaluators, it is interesting to understand the criteria that are used to select the tools. Before developing the survey and the technical questionnaire to identify the tools, a study reaching more than 1000 people was conducted.</p> <p>For evaluators this is interesting because it also shows the broad scope of innovations which could be possible to happen in rural areas and in agriculture thanks to such digital tools and game changers. It can therefore be used to evaluate innovation.</p>
<b><i>Relevance of modelling broadband access impact for evaluation</i></b>	<p>Quantitative analysis and econometric analysis of the impact of broadband access on economic growth, at regional level, in order to consider the dynamics between urban and rural areas and eventual gaps between them.</p> <p>The system generates metric models regression, which is a dynamic linear panel model.</p> <p>That can account for the interplay between broadband coverage and stimulation of economic growth and account for measurement error. It further accounts for other problems that are usually well known in these growth regressions data on real GDP per capita and purchasing power parities are used. Some of the control variables include past economic growth, population growth and proxies for investments and trade orders. These data are proxied by using information on formal sector employments, usually.</p>

### Interoperability (DEMETER outputs)

Project representatives present in the group discussions:

	<b>Coordinator</b>	<b>Demo by project partners</b>
DEMETER	Ioanna Roussaki Kevin Doolin	Raul Palma: demo of the Agricultural Information Model (AIM)

**Small farm performance (SALSA outputs)**

Project representatives present in the group discussions:

	Coordinator	Project partners
SALSA	Teresa Pinto Correia	<p>Dionisio Ortiz Miranda Universidade Politecnica de Valencia, (dealing with the Foresight Analysis in SALSA)</p> <p>Sandra Sumane, from the Latvia team (Baltic Studies Centre)</p> <p>Sandra Candeias, Ministry of Agriculture, Portugal, member of the advisory board of SALSA in Portugal</p>

Summary of discussions	
<b>Definition of small farms</b>	<p>Small farms were defined for statistical purposes as those with less than 5 hectares or with 8 economic units.</p> <p>The participatory approach ended up with a more complete, not statistical definition depending on position of the farm in the food chain/system. The approach was quite flexible so that if one region had good reasons to classify a farm as small farm, it was accepted (definition can be found in the revised conceptual framework of WP1).</p>
<b>Value added of SALSA</b>	<p>The main value added of the SALSA crop production estimates is that they make visible what cannot be found in official sources. FADN for instance does not capture small farm statistics (due to minimum threshold). Even in agricultural censuses there is a need for a minimum size so as to be included.</p> <p>The methodology for quantification of small farm contribution to local food systems also makes visible something that was hidden, i.e. food produced by small farms stays out of statistics. It was made visible only through discussions with key informants (part of the mixed method data collection). The information obtained was then further discussed in focus groups. With this spiral approach more and more information was obtained about how small farms are connected to the market and their role in local food systems (only data on consumption was obtained through statistics).</p>
<b>Relevance for comparing crop productivities</b>	<p>Crop type maps can be used to extrapolate productivity from one region to a wider territory and compare crop production productivity patterns in neighbouring regions. There are samples in different regions covered by SALSA.</p> <p>Crop area and crop production estimation for small farms offers an average for five years. The predictability and reliability of the data is very important, SALSA has managed to produce fairly accurate information using a complex method.</p> <p>Given this is a snapshot picture, the validation of the data collected may be needed in the future, to account for climate and other disturbance factors that may have affect yields.</p>

<b>Relevance for netting out</b>	The maps do not include the boundaries of the small farm, so it is not possible with the current maps to differentiate between supported and not supported farms. There are however ways to locate the plots belonging to each farm unit and calculate this. Other possibilities include to overlap maps of SALSA with information from the PA to identify similar farms and compare them.
<b>Relevance for the development of new policies</b>	Study countries produced maps of crop productivity and changes of small farm productivity. There was also a need for explanations of why small farms produce, i.e. the enabling environment, e.g., policy measures. For this reason, in all SALSA countries there were communities of practice, which were networks consisting of organisations, small farms and small farm businesses, NGOs, policy makers. Results were discussed within these groups and the feedback was positive. Stakeholders consider that data could be useful for future policy making and evaluation.
<b>Relevance for ex ante evaluation</b>	<p>The SALSA 'Participatory foresight analysis' is a useful tool for strategic planning in the context of the ex ante evaluation. Such new tools are useful for 'visioning' (objectives and future targets) and for 'back casting' (from needed actions and interventions in the future back to the present).</p> <p>The scenario analysis helps evaluate/assess the proposed interventions under alternative future settings, and to check the robustness of proposed interventions.</p> <p>The participatory approach engaged simultaneously multiple stakeholders and used foresight thinking to attenuate/deactivate stakeholders' vested interests and build consensus.</p>

### Environmental performance (MonVia and DiverIMPACTS outputs)

Project representatives present in the group discussion:

	<b>Coordinator</b>	<b>Project partners</b>	<b>Demo</b>
MonVia	Coordinator	N/A (German national project)	Coordinator
DiverIMPACTS	Antoine Messéan	Roberta Farina, CREA, IT, partner of Diverfarming (sister project)*. INRAE, scientific officer of DiverIMPACTS.colleague	ACTA/Arvalis, FR, partner of DiverIMPACTS colleague presented the database and how to use it.

<i>Summary of discussions</i>	
<b>Projects' Features</b>	While MonVia is more related to monitoring (a picture of what is happening in the environment and biodiversity), the approach of DiverIMPACTS is more scientific (a projection of the results in the medium term). Both approaches appear to be crucial in relation to the question of the climate change affecting agricultural systems.



<b><i>Innovativeness</i></b>	MonVia's approach is very innovative, aiming to develop a network of volunteers to sustain it in the long term, especially in economic terms. However, the interest in engaging into biodiversity issues has boosted the participation of volunteers in the training activities and in the project.
<b><i>Applicability/ Transferability/ Scalability</i></b>	MonVia aims at extending its coverage and analyse all the data not only at national level, but also at the regional one, although the aim is not to focus on regional scale but on agricultural landscape (taking into consideration also the economic development).
<b><i>Usefulness for evaluation</i></b>	<p>MonVia has developed a full list of indicators and sub indicators to be used as proxies for measuring biodiversity. This could be useful also for monitor practices in the future CAP.</p> <p>The DiverIMPACTS tool helps to understand the interacting process behind soil performances (e.g. pest pressure, eco physiological process. Etc.). Although this tool appears modest for the assessment of the indicator, it can support identifying the factors (practices) behind the indicator's value. Therefore, this database cannot be used as a standalone but in combination with a rather good knowledge of farm practices.</p>
<b><i>Future opportunities and challenges</i></b>	<p>MonVia is trying not to overlap with the methods of other EU projects, but to complement with them. How to assess the performance of agricultural systems, though, remains a challenge.</p> <p>In order to be more relevant for evaluation, the DiverIMPACTS monitoring database needs to be enriched by a further analysis on farm practices, where the drivers towards biodiversity are considered.</p> <p>Both approaches could be a good opportunity to improve a wider monitoring, and to make farmers more aware about topics as biodiversity, for which they receive support.</p>



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