



NIVA – NEW IACS VISION IN ACTION

Work Package 5 – Innovation Ecosystem

D5.1 – State-of-play and stakeholder mapping

Deliverable Lead: RVO

Deliverable due date: 30/09/2019



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 842009.

Document Control Page

Document Control Page	
Title	D5.1 – State-of-play and stakeholder mapping
Creator	WP5 team
Description	The state-of-play and stakeholder mapping is also known as the Inception Report. This functions as a starting point for the Innovation Ecosystem of NIVA.
Publisher	“NIVA - New IACS Vision in Action” Consortium
Contributors	WP5 team
Date of delivery	30/09/2019
Type	Text
Language	EN-GB
Rights	Copyright “NIVA - New IACS Vision in Action”
Audience	<input checked="" type="checkbox"/> Public <input type="checkbox"/> Confidential <input type="checkbox"/> Classified
Status	<input type="checkbox"/> In Progress <input type="checkbox"/> For Review <input type="checkbox"/> For Approval <input checked="" type="checkbox"/> Approved

Disclaimer

This document is issued within the frame and for the purpose of the NIVA project. This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 842009. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the European Commission.

This document and its content are the property of the NIVA Consortium. All rights relevant to this document are determined by the applicable laws. Access to this document does not grant any right or license on the document or its contents. This document or its contents are not to be used or treated in any manner inconsistent with the rights or interests of the NIVA Consortium or the Partners detriment and are not to be disclosed externally without prior written consent from the NIVA Partners.

Each NIVA Partner may use this document in conformity with the NIVA Consortium Grant Agreement provisions.

Table of Contents

Document Control Page	2
Table of Contents	3
Acronyms.....	4
1. Summary	5
2. Stakeholders.....	6
3. Policies	15
4. Related projects	20
5. Events.....	27

Acronyms

- CAP: Common Agricultural Policy
- CEF: Connecting Europe Facility
- DIAS: Data and Information Access Services
- DIH: Digital Innovation Hubs
- EC: European Commission
- EO: Earth Observation
- ESA: European Space Agency
- IACS: Integrated Administration and Control System
- ICT: Information and Communications Technology
- INEA: Innovation and Networks Executive Agency
- JRC: Joint Research Centre
- KPI: Key Performance Indicator
- M&E: Monitoring and Evaluation
- NGO: Non-Governmental Organization
- PA: Paying Agency
- SME: Small and medium-sized enterprise

1. Summary

The project NIVA starts from the premise that innovative new developments of IACS responding to new digital trends can lead to a more sustainable agricultural production across Member States and can assist in a reduction of the administrative burden to actors and stakeholders. This involves three main challenges:

1. Absorbing innovations to simplify the governance;
2. Reducing socio-economic and administrative burden to farmers;
3. Reducing the gap between IACS data use and potential broader uses.

The state of play focuses mainly on relevant matters that have a strong link with these objectives of the project NIVA.

The Inception report shows which stakeholders are currently identified and gives a brief idea how the stakeholder management will be operated. The keywords are deepening and expanding the cooperation.

The Inception report continues with a short overview of the CAP policies and adjacent policies as climate. Also a short impression will be given of the E Government plans that are currently being operated and developed.

Subsequently, projects that have a link with the work of NIVA are being described. A short description of these project will be given and also a short assessment how useful further cooperation with NIVA is suitable.

Finally, the events that could foster the growth and deepening of the stakeholders of NIVA are mentioned.

This Inception report functions as a starting for the Innovation Ecosystem of NIVA. Within Work Package 5 of the NIVA project the stakeholder management will be executed. In order to gain a better view of the wishes of the stakeholders interviews will be conducted, presentations and workshops will be organised. NIVA will organise stakeholder forums that will function as a podium for further strengthening and deepening the cooperation to modernise IACS.

2. Stakeholders

In the NIVA project plan group of stakeholders were already identified.

Stakeholders	Stakeholders Interests/Benefits	Benefits for NIVA
Paying Agencies	Improved CAP performance with automated remote sensing controls, reducing administrative costs, speeding up the work and reducing errors. Also indicators for measuring the effect of policy decisions.	Engagement of potential « customers » to get feedback and gain their support.
Farmers and Cooperatives	Reduction of time wasted in bureaucracy, risk minimization, time reduction from aid application submission to payment. Increase of production, reduction of costs by using the smart farming services. No sanctions.	Engagement of potential « customers » to gain their support.
IT and/or Service providers for the agri-food sector	Access to NIVA technology, tools, services and data that they can use to create new applications on CAP Implementation and Monitoring as well as Smart Farming.	Advertisement to potential « customers » of the NIVA services.
Technology providers	Opportunity to offer their technology and services to the market.	Opportunity to improve existing technological solutions.
Civil Society groups	Very heterogeneous (NGO's, lobby groups, communities of interest), but often not (only) focusing on agriculture but on associated domains.	Raising awareness and acceptance of CAP innovations and its broader societal benefits.
Policy makers at the agricultural, environment, climate & food ministries (including EC DG's)	Improved CAP performance, reduction of administrative burden, measurement of the effect of policy decisions to support their decision making in agriculture, environment and climate. Awareness on new developments towards addressing food security challenge.	Dissemination of knowledge to a policy-orientated audience, which influences the targeted « customers » across Europe and in each separate Member State.
Related projects dealing with innovation in IACS, CAP and Digital Agriculture	Interest in additional technology solutions for CAP implementation, IACS and Digital Agriculture (i.e. Smart Farming, Precision Agriculture, etc) to maximize impact.	Improvement of existing technological solution, further testing, better uptake of NIVA solution while exploring sustainability options.
Research Communities	Use of project outcomes, e.g. cross-border harmonized open data, to support domain research.	Wider usage of the project outcomes, evolution of scientific models for NIVA services and components, exploring synergies.

These groups will be mapped at European or national level. At the national level an important distinction is whether the EU Member State is already represented in NIVA or not.

An important group of stakeholders are the farmers in all the EU Member states. The challenge NIVA adopts is how to include the farmers within the NIVA project. The several Use Cases can function as a first step.

The stakeholder management of NIVA has two objectives:

- Deepening the cooperation;
- Expanding the cooperation.

The project NIVA already has a strong link with Paying Agencies in 9 EU Member States, because they are part of the consortium that execute the nine pilots. Depending on the pilot other stakeholders in the Member State where it is executed, are involved.

2.1 European level

Important stakeholders at European level are the Directorates of the European Commission (EC). NIVA will establish contacts with key members of the EU institutions below. A selection of these will be invited to join the NIVA Policy Board.

DG AGRI

DG AGRI is responsible for EU policy on agriculture and rural development and deals with all aspects of the common agricultural policy (CAP).

DG CONNECT

The Directorate-General for Communications Networks, Content and Technology (CONNECT) is the Commission department responsible to develop a digital single market to generate smart, sustainable and inclusive growth in Europe.

DG CLIMA

DG CLIMA is responsible for EU policy on climate action and it leads international climate negotiations for the EU.

DG ENV

DG ENV is responsible for EU policy on the environment. It proposes and implements policies that ensure a high level of environmental protection and preserve the quality of life of EU citizens.

DG BUDG

DG BUDG is responsible for managing the budget of the European Union. This includes proposing and implementing the financial framework, as well as collecting the resources that EU countries have agreed to contribute.

DG GROW

DG GROW is responsible for EU policy on the single market, industry, entrepreneurship and small businesses.

DG JRC

The Joint Research Centre is the Commission's science and knowledge service. The JRC employs scientists to carry out research in order to provide independent scientific advice and support to EU policy.

Executive Agency INEA

The Executive Agency for Innovation and Networks manages EU infrastructure and research programmes in the fields of transport, energy and telecommunications. This agency is responsible for the Connecting Europe Facility.

European Environment Agency

The EEA is an EU agency tasked with providing sound, independent information on the environment. It operates as major information source for those involved in developing, adopting, implementing and evaluating environmental policy, and also the general public.

Website: <https://www.eea.europa.eu>

Other important players at the European level are the European Parliament (EP) and the European Court of Auditors (ECA). The project plans to organise a NIVA event at the European Parliament by the end of 2020. The objective of the event will be to raise awareness on the project by underlining its significant policy relevance. The NIVA event will bring together all the interested parties from all targeted policy areas related to the project (agriculture, environment, climate, ICT, space, finance).

NIVA will enhance existing connections with EU bodies.

ESA

The European Space Agency (ESA) is Europe's gateway to space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world.

Website: www.esa.int

EIP-AGRI

The agricultural European Innovation Partnership (EIP-AGRI) works to foster competitive and sustainable farming and forestry that 'achieves more and better from less'. It contributes to ensuring a steady supply of food, feed and biomaterials, developing its work in harmony with the essential natural resources on which farming depends

Website: <https://ec.europa.eu/eip/agriculture/en>

AIOTI

The Alliance for Internet of Things Innovation (AIOTI) was initiated by the European Commission in 2015, with the aim to strengthen the dialogue and interaction among Internet of Things (IoT) players in Europe, and to contribute to the creation of a dynamic European IoT ecosystem to speed up the take up of IoT.

Other objectives of the Alliance include: fostering experimentation, replication, and deployment of IoT and supporting convergence and interoperability of IoT standards; gathering evidence on market

obstacles for IoT deployment; and mapping and bridging global, EU, and member states' IoT innovation activities.

AIOTI's key aim is to enhance innovation and economic development across the Internet of Things in Europe. To maintain European competitiveness on a global scale, this aim is best achieved by working not just within Europe, but also with key enabling actors across the world.

Website: <https://aioti.eu/>

Many of the stakeholders can be found in the umbrella organisations at European level, lobby organisations and non-governmental organisations (NGO's) that deal with agriculture, climate and environment, research, innovation, etc. Within NIVA Bureau Européen de l'environnement AISBL (EEB) is a representative of such an organisation.

Prior to the start of NIVA some organisations send a support letter and showed their interest towards NIVA. Important is to keep these organisations updated on the developments within NIVA and indicate upcoming events to their attention.

AgGateway

AgGateway is a non-profit organization with the mission to promote and enable the industry's transition to digital agriculture, and expand the use of information to maximize efficiency and productivity.

Website: <http://www.aggateway.org>

Copa-Cogeca

European Farmers and European Agri Cooperatives organisation, the international European farmers organisation.

COPA is made up of 60 organisations from the countries of the European Union and 36 partner organisations from other European countries such as Iceland, Norway, Switzerland and Turkey. This broad membership allows COPA to represent both the general and specific interests of farmers in the European Union. COGECA has 35 full members and 4 affiliated members from the EU. COGECA also has 36 partner members.

Copa-Cogeca is identified by NIVA as an important stakeholder, since they represent the farmers at the European level. As Copa-Cogeca consist of several national farmer organisations, they can also serve as a partner to include the farmers from the member states.

Website: <https://copa-cogeca.eu>

Global Open Data for Agriculture and Nutrition

GODAN supports the proactive sharing of open data to make information about agriculture and nutrition available, accessible and usable to deal with the urgent challenge of ensuring world food security. Godan is a global network, currently with over 969 partners from national governments, non-governmental, international and private sector organisations that have committed to a joint Statement of Purpose. The initiative focuses on building high-level support among governments, policymakers, international organizations and business. GODAN promotes collaboration to harness the growing volume of data generated by new technologies to solve long-standing problems and to benefit farmers

and the health of consumers. We encourage collaboration and cooperation between stakeholders in the sector.

Website: www.godan.info

Besides the organisations that send a support letter the following organisations are identified as interesting parties for expanding the NIVA network:

CEMA

CEMA is the association representing the European agricultural machinery industry. With 11 national member associations, the CEMA network represents both large multinational companies and numerous European SMEs active in the sector. CEMA wants to advance agricultural machinery and solutions for sustainable farming. CEMA's mission is to bring shared expertise and shape EU legislation for the benefit of sustainable farming and the agriculture machinery and solutions sector.

Website: <https://www.cema-agri.org/>

Farm Europe

Farm Europe is a multicultural think tank that aims to stimulate thinking on rural economies. The think tank focuses on all policy areas that impact on rural business, with a strong emphasis on agriculture and food policies, and especially the Common Agricultural Policy which is the main public lever to act at the European level. Farm Europe introduces into the debate spearhead proposals for decision-makers, with the objective of offering solutions, identifying necessary breaches of tradition and indicating pathways to build efficient policies in order to unleash the potential of rural economies.

Website: <https://www.farm-europe.eu>

The European Association of Remote Sensing Companies (EARSC)

The European Association of Remote Sensing Companies (EARSC) is the European organization which—on a non-profit basis—promotes the use of Earth Observation (EO) technology and especially the companies in Europe which offer EO-related products and services. EARSC is a membership based organisation with the mission to foster the development of the European EO geo-information services industry.

Website: <http://earsc.org/>

DIGITALEUROPE

DIGITALEUROPE is the European organisation that represents the digital technology industry whose members include 61 major technology companies and 37 national trade associations. It seeks to ensure industry participation in the development and implementation of EU "policies" and has several working groups that focus on different aspects of policy—environment, trade, technical and regulatory and the digital economy. DIGITALEUROPE is based in Brussels and represents over 10,000 companies.

Website: <https://www.digitaleurope.org/>

The Network of European Regions Using Space Technologies (NEREUS)

The Network of European Regions Using Space Technologies offers a dynamic platform to all European regions wishing to use space technologies to improve their public policies for the benefit of their citizens. Currently, 26 Regions and a growing group of Associate Members representing academia, research and the private sector, benefit from our activities. Space technologies and infrastructures such as GNSS, EO and SatCom serve as the backbone for the development of innovative services and applications, and can be applied to domains as Agriculture & Food Quality and Energy & Climate.

Website: <http://www.nereus-regions.eu>

The European Regions for Innovation in Agriculture, Food and Forestry (ERIAFF)

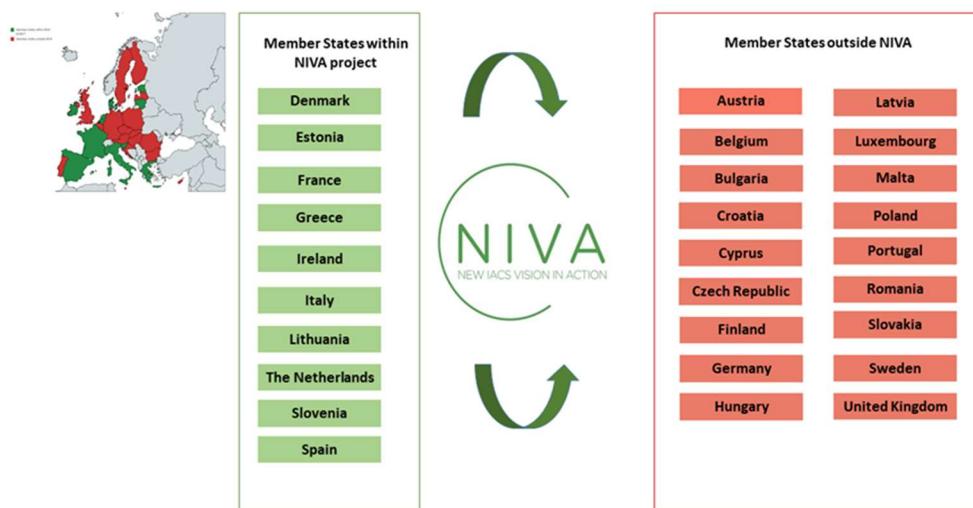
ERIAFF represents the interests of European regions which have defined agriculture, forestry and food industries as key priorities. ERIAFF Forested Regions represents the interests of European regions which are contributing to the development and full deployment of forest-based bioeconomies. The network aims at exchanging information and sharing best practices on how to develop and implement successful regional bioeconomic strategies. The participating regions are identifying successful policies and policy measures, as well as existing barriers in the field of forest-based bioeconomic. They assess continuously the impacts of EU policies and legislation have in their regions and provide recommendations and analyses for policy makers.

Website: <http://www.eriaff.com>

2.2 Member States within NIVA project

The NIVA consortium consists of members from 10 EU Member States. In 9 Member States Use Cases will be executed.

Figure 1: EU Member States direct involvement in NIVA



Denmark

Denmark is represented in NIVA with the Paying Agency Ministry of Food, Agriculture and Fisheries, Danish Agrifish Agency (DAA) and the Danish land user's association Landbrug (SEGES). In order to expand the cooperation with Danish partners NIVA aims to fill the gap with partners from the industry, climate and environment, and with research institutes. The farmers will be connected by SEGES, where the Use Case be the first point of entry for the farmers. Denmark is leading the Use Case UC5a.

Estonia

Estonia is represented in NIVA with the Paying Agency (ARIB) and from the research perspective the University of Tartu (UT). In order to achieve to expand the cooperation with Estonian partners NIVA aims to fill the gap with partners from the industry, climate and environment, and with farmer organisations.

France

France is represented in NIVA with the Paying Agency Agence de Services et de Paiement (ASP), the French national mapping institute Institut National de l'Information Géographique et Forestière (IGN) and the national research institution Institut national de la recherche agronomique (INRA). France is leading the Use Case UC1b.

Support letters were received from:

- Agricultures & Territories, Chambres de Agriculture de France (APCA);
- Agence Française pour la Biodiversité (AFB);
- Agence Bio, Agence Française pour le Développement et la Promotion de l'Agriculture Biologique.

Greece

Greece is represented in NIVA with the Paying Agency Organismos Pliroforikis ke Eleghou Kinotikon Enishyseon (OPEKEPE) and the SME specialised in IT solutions Neuropublic AE Pliroforikis & Epikoinonion (NP). Greece is leading the Use Case UC1a.

Ireland

Ireland is represented in NIVA with the Paying Agency Department of Agriculture, Food and the Marine (DAFM), a centre of excellence for ICT research and innovation Waterford Institute of Technology (WIT) and the research institute Teagasc – Agriculture and Food Development Authority (TEAGASC). Ireland is leading the Use Case UC4a.

Support letters were received from:

- Macra na Feirme, Irish Farm Centre;
- Irish Farmers' Association (IFA);
- Irish Cooperative Organisation Society (ICOS).

Italy

Italy is represented in NIVA with the Italian coordinating body of paying agencies Agenzia per le Erogazioni in Agricoltura (AGEA), an agriculture IT supplier of pre-packaged IACS software components Abaco SpA (ABACO) and the national agricultural research institute Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria (CREA). Italy is leading the Use Case UC5b.

Lithuania

Lithuania is represented in NIVA with the Paying Agency National Paying Agency (NPA) and the Lithuanian IT company iTree (ITREE). Lithuania is leading the Use Case UC2.

The Netherlands

Netherlands is represented in NIVA with the Dutch Paying Agency Rijksdienst voor Ondernemend Nederland (RVO), Wageningen University and Research (WUR) and the Dutch farmers' association Zuidelijke Land- en Tuinbouworganisatie Vereniging (ZLTO, representing also the European Farmers' Organisation COPA GOGECA). Netherlands is leading the Use Case UC4b.

A support letter was received from the SME NEO B.V.

Slovenia

Slovenia is represented in NIVA with a SME specialised in geo-spatial IT solutions Sinergise laboratorij za geografske informacijske sisteme, d.o.o. (SINERGISE).

Spain

Spain is represented in NIVA with the Spanish coordinating body of paying agencies Fondo Español de Garantía Agraria (FEGA), paying agencies from two Spanish regions, Instituto Tecnológico Agrario de Castilla y León (ITACYL) and Consejería de Agricultura, Pesca y Desarrollo Rural (CAPDER), and a public/private IT company Empresa de Transformación Agraria, S.A (TTEC).

Support letters were received from the Paying Agency of Extremadura (Consejería de Medio Ambiente y Rural, Políticas Agrarias y Territorio) and from the Paying Agency of Extremadura (Consejería de Medio Ambiente y Rural, Políticas Agrarias y Territorio).

2.3 Member states outside NIVA

As the figure “EU Member states direct involvement in NIVA” shows there is also a part of the EU where NIVA can expand the cooperation. The most accessible organisations in these countries for NIVA will be the Paying Agencies or Coordinating Bodies, who can be contacted at the events where Paying Agencies are present, for example the bi-annual Director’s meetings and Panta Rhei.

- Austria;
- Belgium;
- Bulgaria;
- Croatia;
- Cyprus;
- Czech Republic;
- Finland;
- Germany;
- Hungary;
- Latvia;
- Luxembourg;
- Malta;
- Poland;
- Portugal;
- Romania;
- Slovakia;
- Sweden.

3. Policies

3.1 CAP policies

On 1 June 2018, the European Commission presented legislative proposals on the common agricultural policy (CAP) beyond 2020. These proposals aim to make the CAP more responsive to current and future challenges such as climate change or generational renewal, while continuing to support European farmers for a sustainable and competitive agricultural sector.

The European Commission proposes a more flexible system, simplifying and modernising the way the CAP works. The policy will shift the emphasis from compliance and rules towards results and performance. Through strategic plans, countries will set out how they intend to meet the 9 EU-wide objectives using CAP instruments while responding to the specific needs of their farmers and rural communities.

Based on 9 specific objectives, the future CAP will continue to ensure access to high-quality food and strong support for the unique European farming model.



The 9 specific objectives of the future CAP are:

- to ensure a fair income to farmers;
- to increase competitiveness;
- to rebalance the power in the food chain;
- climate change action;

- environmental care;
- to preserve landscapes and biodiversity;
- to support generational renewal;
- vibrant rural areas;
- to protect food and health quality.

Specific objectives of the CAP cover the three pillars of sustainability (economic, environment, social). A cross-cutting objective of the future CAP is to foster knowledge, innovation and digitalisation in agriculture and rural areas.

FARM ECONOMIC

1. Ensure a fair income to farmers

Objective is to support viable farm income and resilience across the EU territory to enhance food security.

2. Increase competitiveness

Objective is to enhance market orientation and increase competitiveness including putting greater focus on research, technology and digitalisation.

3. Rebalance the power in the food chain

Objective is to improve farmers' position in the value chain.

ENVIRONMENT & CLIMATE

4. Climate change action

Objective is to contribute to climate change mitigation and adaptation, as well as sustainable energy.

5. Environmental care

Objective is to foster sustainable development and efficient management of natural resources such as water, soil and air.

6. Preserve landscapes and biodiversity

Objective is to contribute to the protection of biodiversity, enhance ecosystem services and preserve habitats and landscapes.

SOCIO-ECONOMIC

7. Support generational renewal

Objective is to attract young farmers and facilitate business development in rural areas.

8. Vibrant rural areas

Objective is to promote employment, growth, social inclusion and local development in rural areas, including bioeconomy and sustainable forestry.

9. Protect food and health quality

Objective is to improve the response of EU agriculture to societal demands on food and health, including safe, nutritious and sustainable food, as well as animal welfare.

A shift towards a more performance-oriented policy requires the establishment of a framework that will allow the European Commission to assess and monitor the performance of the policy. Performance will be measured in relation to the specific objectives of the CAP by using a set of common indicators.

A new CAP delivery model is expected to bring benefits for EU citizens while significantly simplifying and modernising the way the policy works, both for farmers and for Member States. Greater freedom is given to Member States to decide how to best meet the common objectives, while responding to the specific needs of their farmers, rural communities and society in general.

Take-up of new technologies (both by farmers and by national administrations) is encouraged, in order to help simplify their work. For example, wherever possible, traditional control methods such as on-the-spot checks are replaced with remote observation or similar measures for reducing the control burden.

As part of the future CAP proposals, a new decision support tool is being developed to help farmers manage the use of nutrients on their farm – the Farm Sustainability Tool for Nutrients (FaST). FaST shall be a digital tool to support individual farmers in developing an accurate nutrient management plan, which helps to improve both the agronomic and environmental performance of their farms. While the FaST will not be a tool for authorities to ensure compliance of farmers, managing authorities/Paying Agencies will also benefit from it – FaST can be used for monitoring certain environmental parameters and for increased two-way communication between farmer and agency.

3.2 E Government plans

European eGovernment Action Plan 2016-2020

The eGovernment Action Plan is a political instrument to advance the modernisation of public administrations across the EU. eGovernment Action Plan 2016-2020 (Accelerating the digital transformation of government) has three priorities:

- Modernise public administration with ICT, using key digital enablers;
- Enabling cross-border mobility with interoperable digital public services;
- Facilitating digital interaction between administrations and citizens/businesses for high-quality public services.

The new European Interoperability Framework (EIF)

The European Interoperability Framework is a set of recommendations, providing guidelines to the public sector on setting up interoperable services while also streamlining existing processes for cross-border or inter-organizational cooperation. It covers different types of interaction - Administration to Administration, Administration to Business and Administration to Citizen.

Open Data Directive

The Directive on open data and the re-use of public sector information (Directive (EU) 2019/1024) entered into force on 16 July 2019, Member States have to transpose the directive by 16 July 2021. The Directive introduces the concept of high value datasets, which are subject to a separate set of rules ensuring their availability free of charge, in machine readable formats, provided via Application Programming Interfaces (APIs) and, where relevant, as bulk download. Thematic categories of high-value datasets are: Geospatial, Earth observation and environment, Meteorological, Statistics, Companies and company ownership, and Mobility. Open Data Directive replaces the Public Sector Information Directive (Directive 2003/98/EC, the “PSI Directive”).

eIDAS

eIDAS (Regulation (EU) No 910/ 2014) is a EU regulation setting out rules for electronic identification and trust services. eIDAS establishes legal structure for electronic identification, signatures, seals and documents.

INSPIRE directive

Establishes an infrastructure for spatial information in Europe to support Community environmental policies, and policies or activities which may have an impact on the environment. INSPIRE is based on the infrastructures for spatial information established and operated by the Member States. Directive is being implemented in various stages, full implementation is expected on 2021.

ISF Regulation (EU) 2018/1091

Regulation of the European Parliament and of the Council on integrated farm statistics and repealing Regulations (EC) No 1166/2008 and (EU) No 1337/2011. Establishes a framework for European statistics at the level of agricultural holdings.

CEF

The Connecting Europe Facility (CEF) is a key EU funding instrument to promote growth, jobs and competitiveness through targeted infrastructure investment at European level. It supports the development of high performing, sustainable and efficiently interconnected trans-European networks in the fields of transport, energy and digital services.

3.3 Climate and environmental policies

The European Commission (EC) has set higher ambitions for environmental and climate action under the future CAP. Three of the nine CAP2021 objectives concern the environment and climate, with a focus on tackling with climate change and protection of biodiversity and habitats.

EU environmental and climate policies and agriculture:

- The Water Framework Directive (Directive 2000/60/EC): protection and sustainable use of European freshwater resources (ground and surface waters).
- The Nitrates Directive (Directive 91/676/EEC): aims to reduce water pollution caused or induced by nitrate from agricultural sources.
- Directive on the Sustainable Use of Pesticides (Directive 2009/128/EC): aims to achieve a sustainable use of pesticides in the EU.
- Thematic Strategy for Soil Protection
- Seventh Environment Action Programme (Decision No 1386/2013/EU): addressing issues of soil degradation.
- The Nature Directives: Birds Directive (Directive 2009/147/EC) and Habitats Directive (Directive 92/43/EEC), key instruments of EU biodiversity policy.
- The EU Biodiversity Strategy to 2020: aims to halt the loss of biodiversity.
- IAS Regulation (EU Regulation 1143/2014 on Invasive Alien Species).
- Clean Air Programme, including the National Emission Reduction Commitments (EU Directive 2016/2284, so-called NEC Directive).
- The Industrial Emissions Directive (Directive 2010/75/EU): amongst other areas regulates large poultry and pig facilities.
- LULUCF Regulation (Decision No 529/2013/EU): objective is to include agriculture and forestry into European climate mitigation efforts.

4. Related projects

In the NIVA project plan there were already 16 European projects identified that have a link with the work done in NIVA. But besides these projects there might also be national projects that could be useful for NIVA.

4.1 European projects

The project already identified by the NIVA project plan will be described in more detail and with special attention to which of the Work Packages and Use Cases it might be more relevant. Also an assessment will be made of the maturity of the project result will be given in order to analyze at what period in time the relevance of the project might emerge. Finally, a conclusion will be drawn which of these projects might be the most promising projects to help NIVA to reach the objectives.

1. DATA-BIO

Website: www.databio.eu

Funding stream: H2020

Objective project

Big data for the bio economy with cases in agriculture and smart farming.

Relevance to NIVA

There is a smart CAP case, in which NIVA partners are active.

Use in NIVA

Active engagement and exchange of knowledge through NIVA partners, potential reuse of components from smart CAP case.

2. Sen4CAP

Website: www.esa-sen4cap.org

Funding stream: ESA

Objective project

Using sentinel data for CAP applications.

Relevance to NIVA

Develops generic Sentinel based components for CAP.

Use in NIVA

Potential reuse of generic components in NIVA pilots that require EO components and services.

3. RECAP

Website: www.recap-h2020.eu/

Funding stream: H2020

Objective project

A cloud-based Software as a Service (SaaS) platform linked to remote sensing, and user-generated data.

Relevance to NIVA

Delivers service architecture ideas and pilots relevant for NIVA.

Use in NIVA

Potential reuse of service architecture concept, learning from piloting experiences, especially reg. combining EO and bottom-up data streams.

4. APOLLO

Website: apollo-h2020.eu

Funding stream: H2020 Copernicus

Objective project

Precision agriculture to farmers through affordable information services, making extensive use of free and open Earth Observation data.

Relevance to NIVA

Delivers generic farm level services for processing EO data to CAP monitoring.

Use in NIVA

Explore developed services and integrate into NIVA's farm level piloting applications where applicable and feasible.

5. SENSAGRI

Website: ipl.uv.es/sensagri/

Funding stream: H2020

Objective project

Aims to exploit the unprecedented capacity of Copernicus Sentinel-1 and Sentinel-2 to develop an innovative portfolio of prototypes agricultural monitoring services.

Relevance to NIVA

Development and validation of relevant EO tools, solutions and algorithms in three NIVA countries: Spain, France, Italy.

Use in NIVA

Potential reuse of EO algorithms and/or tools, possibly improving these for the purposes of NIVA pilots that requires EO components and services.

6. Internet of Farms and Food

Website: www.iof2020.eu

Funding stream: H2020

Objective project

Internet of Things largescale pilot on agriculture.

Relevance to NIVA

Several innovations and trials are delivering relevant tools, e.g. machine data coupling and smart sensors use.

Use in NIVA

Exchange concepts and methods, co-develop and/or reuse concepts and technologies in piloting.

7. AGRI-2017-EVAL-04

Website: n.a.

Funding stream: DG-AGRI

Objective project

Analysis of administrative burden arising from the CAP.

Relevance to NIVA

Develop indicators and set-ups for KPIs relevant to impact monitoring of NIVA.

Use in NIVA

Re-use KPIs in the area of CAP and administrative burden and thus a first baseline for NIVA M&E.

8. PEGASUS

Website: pegasus.ieep.eu/

Funding stream: H2020

Objective project

Develops concepts of making public goods and ecosystems service evaluations accessible and operational.

Relevance to NIVA

Deliver frameworks for operationalizing the societal benefits of CAP investments.

Use in NIVA

Use the framework(s) as input for dissemination, exploitation and to feed into the design of specific KPI's.

9. Smart-AKIS

Website: www.smartakis.com

Funding stream: H2020

Objective project

Smart Farming thematic network.

Relevance to NIVA

Provides a network for dissemination of NIVA results and discussion with stakeholders.

Use in NIVA

Collecting stakeholder feedback, addressing network members for impact M&E.

10. EO-VAS

Website: <http://eo-vas.eu/>

Funding stream: H2020

Objective project

Delivering Value Added Services on based on sentinel-hub.

Relevance to NIVA

Can be a proxy for further DIAS developments.

Use in NIVA

Exchanging concepts and methods, potential reuse of standards and interoperability services.

11. Sen2Agri

Website: www.esasen2agri.org

Funding stream: ESA

Objective project

Use of Sentinel 2 for agricultural applications.

Relevance to NIVA

Develops a Sentinel 2 processing chain for agriculture.

Use in NIVA

Explore possible reuse of the developed Sentinel 2 processing chain and implement in NIVA pilots.

12. SOSTARE

Website: n.a.

Funding stream: JRC (internal)

Objective project

A tool developed at JRC for integrated sustainability assessments at farm level.

Relevance to NIVA

Indicators and frameworks for performance monitoring.

Use in NIVA

Developed assessment method will feed into piloting and the development of NIVA M&E and impact assessment activities.

13. FAIRSHARE (RUR-13-2018)

Website: n.a.

Funding stream: H2020

Objective project

Enabling the farm advisor community to prepare farmers for the digital age.

Relevance to NIVA

Farm advisors and their organisation's effectively use digital tools and services for supporting a more productive and sustainable agriculture.

Use in NIVA

Farm advisors also play a major role in awareness in CAP related ICT and in linking digital information between farm and PA. Links to the innovation ecosystem.

14. SmartAgriHubs (RUR-12-2018)

Website: n.a.

Funding stream: H2020

Objective project

Consolidate and foster EU-wide network of Ag DIHs to enhance digital transformation for sustainable farming and food production.

Relevance to NIVA

Brings together innovations on digital innovations at farm level and along the food production chain. Connecting this to CAP systems will reduce admin burden a.o.

Use in NIVA

Re-use innovation linked to farmer systems. Collaborate with the relevant Flagship Innovation Experiments. Data from IACS systems can be used to improve farmers' performance.

15. Cross-Nature (CEF-TC-2016-2)

Website: n.a.

Funding stream: CEF (INEA)

Objective project

Cross-Nature has created a linked-open-data based web service endpoint for nature and biodiversity datasets.

Relevance to NIVA

This endpoint offers direct access to CEF infrastructure and several relevant nature datasets of key importance.

Use in NIVA

Reuse of services and datasets in pilots.

16. Cross-Forest (CEF-TC-2017-3)

Website: n.a.

Funding stream: H2020

Objective project

The Action develops a dynamic information platform that offers services for forest fires control as well as forestry evolution models for Portugal and Spain.

Relevance to NIVA

This endpoint offers direct access to CEF infrastructure and several relevant datasets.

Use in NIVA

Reuse of services and datasets in pilots

4.2 National projects

In the various Member States projects are executed that have some similarities or are dealing with adjacent issues. These projects will be further identified.

17. Estonia: Long Term Knowledge Transfer Program on Agricultural Big Data

Objective of the project

The aim of this national level program is to create economic value added in agricultural production through efficient use of data, to support the development of precision agriculture and to promote environmentally-friendly agriculture.

The Agricultural Big Data program will demonstrate to farmers how they can use existing data and applications. In order to achieve this goal, the program will establish an electronic system (tool) for agricultural Big Data, which shall link existing data to relevant analytical models and practical applications. In addition, the Big Data electronic system shall simplify for agricultural producers to submit agricultural information, e.g. for statistics and monitoring.

As part of the program an economic, legal and IT analysis of the As-Is and To-Be states of agricultural data in Estonia will be performed. Following to the analysis an electronic system will be developed, including electronic fieldbook and possibly some other e-tools, e.g. humus balance calculator, farm-gate balance calculator, plant protection recommendations, etc.

Phase I of the program (feasibility analysis) has been completed in September 2019. Phase II (development) is expected to start in April 2020 and to last approximately 2 years. Programme is lead by the Estonian Ministry of Rural Affairs, program council consists representatives of the Estonian Agricultural Registers and Information Board, Estonian Chamber of Agriculture and Commerce, Farmers Cooperative KEVILI (the biggest grain and rapeseed growers association in Estonia), Estonian Rural Development Association, Ministry of Economic Affairs and Communications, Ministry of the Environment, government agency Statistics Estonia, Estonian Association of Information Technology and Telecommunications, and agricultural experts.

Relevance to NIVA

Objectives of the program are very similar to NIVA – to develop e-tools for enhancing broader use of agricultural data and for reducing administrative burden, to support the development of precision agriculture.

Use in NIVA

Reuse of the results of the phase I of the program (As-Is and To-Be analysis).

5. Events

In the NIVA project plan there were events identified that could foster the growth and deepening of the stakeholders. The events have a link with different topics:

1. Agricultural Policy
2. Budget Policy
3. Environment and Climate Change
4. Space Policy
5. Agri-Food Professionals Events and Fairs
6. Other events

5.1 Agricultural policy

The following events regarding Agricultural Policy are identified at this stage. By active participating of NIVA members the presence at these events can help to kick-start and maintain the Innovation Ecosystem and for cross-border and cross-discipline exchange of ideas and knowledge.

1. Learning Network informal meetings

Learning Network is an independent informal Network, principally for Directors of EU PAs and Coordinating Bodies, aiming to initiate, coordinate and improve informal and practical cooperation between PAs, Coordinating Bodies and EC institutions. It aims at providing a flexible and concrete response to developments in the new CAP, especially in relation to simplification and the reduction of implementation, control and administrative burdens.

Interval: several meetings a year.

Stakeholders/target audience: directors of EU Paying Agencies and Coordinating Bodies.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

2. Conference of the EU Paying Agencies' Directors

The Conference allows the heads of EU paying agencies, representatives of agricultural sector institutions of EU candidate states and representatives of EU institutions to discuss issues which are of interest to EU paying agencies.

Interval: semi-annually (spring and autumn each year).

Stakeholders/target audience: heads of EU Paying Agencies, representatives of key European Union institutions (e.g. European Commission, European Court of Auditors).

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

3. Panta Rhei Conferences

'Panta Rhei' is the EU PAs platform which brings together all and prospective MSs of the European Union for a conference twice a year to discuss ongoing thematic issues related with automated systems in PAs (IT development, information security, adapting to new requirements).

Interval: semi-annually (spring and autumn each year).

Stakeholders/target audience: specialists dealing with information technologies.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

4. JRC's Monitoring Agricultural Resources (MARS) Annual Conference

The MARS conference allows various stakeholders to discuss particular problems or innovations concerning the management of the CAP direct aids, such as controls with Remote Sensing, Land Parcel Identification Systems, GNSS technologies in support of CAP etc.

Interval: annually.

Stakeholders/target audience: specialists responsible for control and implementation of EU area-based support schemas.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

5. DG AGRI: Agricultural Outlook Annual Conference

It focuses on key challenges and future outlook trends for the EU's agricultural sector.

Participants include officials from EU institutions, governments and international organisations and those involved in the food chain, market experts, academics, think tanks etc.

Interval: annually.

Stakeholders/target audience: representatives of EU institutions, governments, international organisations, policy institutes and civil society, market experts, academics.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

6. Farm Europe: Global Food Forum

The Global Food Forum, organised by the prominent EU think tank Farm Europe, encourages a proactive dialogue among a wide range of economic, political and civil society representatives. Its first edition in 2016 attracted more than 600 political and economic leaders from 18 EU Member States.

Interval: annually.

Stakeholders/target audience: key political and economic decision makers across the EU.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

7. Copa-Cogeca: Congress of European Farmers 2020

The Congress is organised every two years by Copa-Cogeca, the EU farmers & agricooperatives representative organisations, as laid down by their statutes. It brings together about 400 delegates from 28 EU Member States and from partner organisations in Switzerland, Iceland, Norway and Turkey.

Interval: biennially.

Stakeholders/target audience: representatives of EU farmers and agricooperatives, agricultural experts, representatives of EU institutions, governments, research institutions, international experts.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

8. AMADEUS

This conference is attended by the heads of the Internal Audit Services of the Paying Agencies.

Interval: annually.

Stakeholders/target audience: EU Paying Agencies' representatives, responsible for internal audit.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

5.2 Budget policy

The following events regarding Agricultural Policy are identified at this stage. By active participating of NIVA members the presence at these events can help to kick-start and maintain the Innovation Ecosystem and for cross-border and cross-discipline exchange of ideas and knowledge.

9. DG BUDGET: Annual “EU Budget Focused on Results” Conference

It offers a high-level discussion on the EU budget policy agenda. Leading figures in Europe's political landscape exchange views on how to improve efficiency of spending and achieve more with the available resources. More than 500 participants, including representatives of the European Court of Auditors, European parliament, World Bank and OECD join the debates.

Interval: annually.

Stakeholders/target audience: politicians and experts on public funding (representatives from EU Member States, European and international institutions).

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

10. European Court of Auditors (ECA) events

As part of its mission to improve EU financial management and promote accountability

and transparency in the European Union, the European Court of Auditors (ECA) organises different events: technical workshops related to audit and international conferences aimed at further developing the EU spending areas being audited by ECA.

Interval: several events a year.

Stakeholders/target audience: representatives of EU institutions, Member States' governments, politicians, financial experts, auditors.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

5.3 Environment and climate change

The following events regarding Agricultural Policy are identified at this stage. By active participating of NIVA members the presence at these events can help to kick-start and maintain the Innovation Ecosystem and for cross-border and cross-discipline exchange of ideas and knowledge.

11. European Environmental Evaluators Network Forum

This forum brings together practitioners, academics, policy-makers and other users of environmental evaluation to share views, knowledge and experiences about the use, relevance and future priorities for climate and environment policy evaluation

Interval: annually.

Stakeholders/target audience: evaluation practitioners, academics, policy-makers, representatives of civil society, other users of environmental evaluations.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

12. European Climate Change Adaptation Conference

<http://ecca2019.eu/> European Climate Change Adaptation Conference is biennial event gathering good practices on climate change adaption for a diverse audience including agriculture.

Interval: biennially.

Stakeholders/target audience: diverse range of actors from academia, government, business and community (researchers, policy-makers, CEOs, practitioners etc).

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

13. EU Green Week

<https://www.eugreenweek.eu/> EU Green Week, thematic conferences on Environment and greening strategies. In addition to a high-level conference in Brussels, numerous events are organised by partner organisations across the Europe. Different themes apply.

Interval: annually.

Stakeholders/target audience: wide range of stakeholders – policymakers, leading environmentalists, interested parties across the Europe.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

5.4 Space policy

The following events regarding Agricultural Policy are identified at this stage. By active participating of NIVA members the presence at these events can help to kick-start and maintain the Innovation Ecosystem and for cross-border and cross-discipline exchange of ideas and knowledge.

14. European Commission: Annual Conference on European Space Policy

European space stakeholders have the opportunity to debate the medium- and long-term development of European space programmes and the spread of space services in many economic and societal activities.

Interval: annually.

Stakeholders/target audience: European institutional decision-makers, CEOs, representatives of the scientific world and of the civil society

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

15. Copernicus User Forum

Meeting with Member State delegations on the advancements and progress of the Copernicus Earth Observation programme, generally preceded by an Industry Day and other relevant meetings.

Interval: annually.

Stakeholders/target audience: users and providers of Earth Observation services and products, business and scientific organisations, and other participants interested in Copernicus data and services.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

16. European Space Agency (ESA) events

ESA (co)-organises a series of events like the World Cover Conference and the Fringe Workshops that aim to provide scientists and users with the opportunity to present firsthand and up-to-date results from their on-going research and application development activities by using data from past and current satellites.

Interval: several events a year.

Stakeholders/target audience: scientists, educators, students, business and scientific organisations, developers and startups interested in the Earth Observation science and activities.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

5.5 Agri-Food Professionals events and fairs

The following events regarding Agricultural Policy are identified at this stage. By active participating of NIVA members the presence at these events can help to kick-start and maintain the Innovation Ecosystem and for cross-border and cross-discipline exchange of ideas and knowledge.

17. Agrotica

International annual agricultural fair for Agricultural services, machinery, equipment and Supplies, located in Greece.

Interval: annually.

Stakeholders/target audience: farmers, agriculture companies, agricultural experts, other interested parties.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

18. Agritechnica

Biennial largest European Fair in Hannover (Germany), the world's leading trade fair for agricultural technology/machinery. Includes a dedicated focus on science and policy.

Interval: biennially.

Stakeholders/target audience: farmers, manufacturers and service providers, agricultural experts, other interested parties.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

19. INNOV-AGRI Grand Sud-Ouest

The European meeting for large crop growers and contractors. Agricultural fair dedicated to innovations in the industry.

Interval: biennially.

Stakeholders/target audience: farmers, manufacturers and service providers, agricultural experts, other interested parties.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

20. Agriflanders

The largest agricultural and horticultural fair in Flanders. Exhibition of latest trends, companies and technologies in agriculture.

Interval: biennially.

Stakeholders/target audience: farmers, manufacturers and service providers, agricultural experts, other interested parties.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

21. FIERAGRICOLA

One of Europe's biggest and Italy's oldest agricultural show. International fair of new products and services for agriculture. Consists of several sub-fairs and covers different areas (agricultural technologies, equipment for animal husbandry, agriculture materials, renewable energies and services to the agricultural sector).

Interval: annually.

Stakeholders/target audience: farmers, manufacturers and service providers, agricultural experts, other interested parties.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

5.6 Other events

The following events regarding Agricultural Policy are identified at this stage. By active participating of NIVA members the presence at these events can help to kick-start and maintain the Innovation Ecosystem and for cross-border and cross-discipline exchange of ideas and knowledge.

22. Annual EFITA Conferences

The European Federation for Information Technology in Agriculture, Food and the Environment (EFITA) is the European conference dedicated to the future use of ICT in the agri-food sector, bioresource and biomass sector.

Interval:

Stakeholders/target audience:

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

23. ECPA

European Conference on Precision Agriculture, a biennial science and technology event focusing on tools to improve farming. A leading forum for discussion and sharing ideas around precision agriculture.

Interval: biennially.

Stakeholders/target audience: farmers, manufacturers and service providers, agricultural experts, other interested parties.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

24. IEEE IGARSS

IEEE (Institute of Electrical and Electronics Engineers) IGARSS (the International Geoscience and Remote Sensing Symposium). Scientific conference on remote sensing and its applications.

Interval: annually.

Stakeholders/target audience: international remote sensing community – scientists, engineers and educators engaged in the fields of geoscience and remote sensing.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

25. CAPIGI

Biennial conference on benefits of geo-spatial technologies for sustainable agricultural production, agricultural policy and precision farming.

Interval: biennially.

Stakeholders/target audience: geo-information experts active in agriculture (experts in artificial intelligence, machine learning, remote sensing, radar), developers, domain and governance experts.

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

26. European Parliament

On top of that, the project plans to organise a NIVA event at the European Parliament by the end of 2020. By that time, NIVA will have tangible outcomes to showcase and communication impact will be very important considering the scheduled EU policy developments (reform of the Common Agricultural Policy, discussions on the EU's Multiannual Financial Framework 2020-2027 etc.). The event will be organised by the NIVA consortium with the support of the project partners' permanent delegations in Brussels and will be hosted by Members of the European Parliament. The objective of the event will be to raise awareness on the project by underlining its significant policy relevance. The NIVA event will bring together all the interested parties from all targeted policy areas related to the project (agriculture, environment, climate, ICT, space, finance).

Interval: One-off

Stakeholders/target audience: all of the interested parties from all targeted policy areas (agriculture, environment, climate, ICT, space, finance).

NIVA members (role): present, organise workshops, lobbying, etc.

Benefit for NIVA: expand network, deepening network, inform, contribute, raise awareness, engage.

27. Various

A multitude of national events exists over Europe that will be reached out through by members of the consortium and the second ring of stakeholders.