TOOLS4CAP INVENTORY OF METHODS & TOOLS

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Inventory of methods and tools

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Acronyms

CAP	Common Agricultural Policy
CSP	CAP Strategic Plans
EC	European Commission
EU	European Union
KPI	Key Performance Indicators
MS	Member States
Ms	Milestone
NDM	New Delivery Model
RDP	Rural Development Plan
SO	Specific Objective
SPs	Strategic Plan
TEF	Tune-up Evaluation Framework
Tools4CAP	Innovative Toolbox empowering effective CAP governance towards EU ambitions
WP	Work Package

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1. Introduction

1.1. Why Tools4CAP

The Tools4CAP project enters into play in the context of a changing Common Agricultural Policy (CAP). The New Delivery Model (NDM) established in the Regulation EU 2115/2021[1] introduces country specific Strategic Plans, along with new monitoring, review and evaluation requirements. The new CAP comes with increased subsidiarity, providing greater scope to tailor policy to identified needs. It also introduces a performance-oriented approach replacing the previous compliance-based model. Together these changes mean more responsibilities and flexibility for Member States (MSs) in the design and monitoring of their CAP Strategic Plans (CSP), as well as a new policy cycle entailing exchange and coordination with the European Commission.

The NDM, therefore, poses new challenges for MS. MS are required to develop new competences and capabilities and set up appropriate methodological tools to design and implement CSPs. These CSPs must be capable of delivering on societal demands such as increased green ambitions, animal welfare, SMART accountability, consistency of the intervention strategy, and external coherence with other policies.

Tools4CAP aims to provide CAP decision-makers with suitable tools for more evidence-based policy making, ultimately improving their capacity to design next generation strategic CSPs, and to perform monitoring tasks. To realise its ambitions, the project pursues five specific objectives. Tools4CAP will:

1) Provide a shared knowledge base and an evaluation of methods and tools used for the design and implementation of the CSP.
2) Identify and adapt innovative methods and tools for the design and implementation of the CSP, by taking stock of relevant and replicable solutions developed in recent and ongoing research projects and other EU initiatives.
3) Empower end users to adopt innovative solutions for the design and implementation of the CSP, by providing them with methodological guidance on choosing the best solutions, their operationalisation, and associated good practices.
4) Establish a replication lab supporting the practical demonstration and uptake of innovative solutions for the design and implementation of the CSP, by operationalising and testing methods and tools across case studies.
5) Set up a capacity building hub to mobilise knowledge and transfer operational capabilities to end users for the design and implementation of the CSP, by enabling mutual learning, participation, and science-policy dialogue.

1.2. The objective of this deliverable

In Work Package (WP) 1, the Inventory of Methods and Tools (D1.1) is a foundational piece of the Tools4CAP support action. This deliverable forms part of Task 1.1 (T1.1), which aims to create a comprehensive inventory of existing methods and tools used in the design and implementation of Member State CSPs. This comprehensive inventory will be made accessible to stakeholders via an online repository on the project website (Milestone 1). The inventory will be designed to be digital, updatable, and permanent, existing beyond the life of the project.

The project team will undertake continuous monitoring for any new methods and tools introduced by the MSs, by leveraging desk research and interactions organised in Work Package 6 (WP6), which includes focus groups and workshops, with scheduled updates to the inventory to take place in January 2025 and January 2026. Relevant tools from science and third countries that are not yet being used in the EU will be included in these updates, as well as approaches used in previous programming periods. Thus, the overall objective of this deliverable is to provide a dynamic, comprehensive, and accessible repository of methodologies and tools contributing significantly to the planning, implementation, and monitoring of CSPs across the European Union. This dedicated space will support the transfer of knowledge, skills and capabilities to end users across all MSs.

The findings of T1.1 will also serve as a crucial knowledge base for subsequent tasks, linking intrinsically with T1.2 and T1.3. The data collected during T1.1 will be crucial in T1.2 where the conceptual framework for the project will

[1] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R2115

be outlined. The findings from T1.1 will enable a deeper understanding of the NDM (M2) and help frame the subsequent activities. Additionally, the conceptualisation established in T1.2 will be pivotal in T1.3, the benchmarking of methods and tools. It is here where the identified tools will then be evaluated and benchmarked in order to identify the most interesting solutions and good practices, and to adapt and test such tools in order to increase the potential for replication and adoption of the most innovative tools across MSs. The quality criteria identified during the formulation of the conceptual framework in T1.2 will be utilised to evaluate, select, and test the effectiveness of methods and tools. The Tune-up Evaluation Framework (TEF) set up in T1.3 will then rely significantly on the understanding of the NDM refined in T1.2.

1.3. Key definitions

1.3.1. The design and monitoring of the strategic plans

According to Regulation EU 2115/2021, MSs are required to design CSP covering the national territory and ensuring consistency with regional settings, and to establish a monitoring, reporting and evaluation system. The governance of the SP, therefore, begins with their design and continues throughout their implementation. Design and implementation are inter-functional phases of the same process that complement one another.

We define 'design' as the process involving all activities performed by MS, including the preparatory work, aiming at drafting the CAP SP, hence at creating a "sound intervention logic" of the CSP and the intervention strategy referred to in Article 107(1), point (b) for each specific objective. The CSPs' design involves specific tasks, including socio-economic and context analysis, SWOT analysis, needs assessment, interventions setting, targets setting, financial allocation, ex-ante analysis and Strategic Environmental Assessment (SEA), and stakeholder consultations.

We define 'implementation' as the process involving all activities performed by the EC (and other EU agencies) and MSs, taking place after the formal approval of the CSP (January 2023), aimed at monitoring and evaluating the adoption of planned interventions and budget, and the achievements of the targets and objectives. We distinguish monitoring activities from evaluation activities, as follows:

Monitoring: all activities performed by EC and MSs to measure progress in CSP implementation and in achieving the milestones and targets (by reference to financial data and to output and result indicators, including at regional level where relevant). This includes two main tasks. First, the performance review (i.e. activities undertaken for the realisation of the annual performance report), which involves the set up of comprehensive, timely and reliable data sources to enable effective follow-up of policy progress towards objectives using output, result and impact indicators. Second, the control of beneficiaries' compliance, traditionally conducted through IACS and paying agencies control systems[2].

Evaluation: all activities performed by EC and MSs to evaluate progress in CSP implementation and in achieving the CSP set out objectives and the environmental and climate-related commitments of the EU. This includes activities such as:

- Activities undertaken by MS during the implementation period and ex-post to assess their CSP' effectiveness, efficiency, relevance, coherence, EU added value and impact in relation to their contribution to achieving the CAP general objectives and specific objectives which are addressed by the CSP concerned
- Activities undertaken by EC pursuant to Title VII, Chapter V of CSP Regulation

The project fully covers the design phase of the plans but, as for what regard the implementation, the project focuses on the monitoring process. The ex-post evaluation of the CAP Strategic plan is out of scope. In fact, the design of the next generation CSP will happen before the full evaluation of the current SP. The monitoring process of the current CSPs' implementation will be fundamental in this regard, while the CAP evaluation will not likely have a role in informing those choices. Therefore, the scope of the Tools4CAP project is particularly focused on the monitoring process, rather than on the evaluation of the CAP. Nonetheless, qualitative and quantitative tools can be also of relevance for ex-post evaluations.

[2] https://agriculture.ec.europa.eu/common-agricultural-policy/financing-cap/assurance-and-audit/managing-payments_en

1.3.2. The methods and tools for design and monitoring

The project focuses on the tools used for the design and monitoring of the CSPs. The term 'tools' encompass all methodologies, methods and (technical/technological) tools that can be used through the design and monitoring processes. Within an overarching methodological framework, methods are about instructions, procedures and processes for attaining a certain objective, alongside which different qualitative and quantitative tools are used. A tool is a device/product that help in accomplishing a task. Focusing on the process, there are good and bad methods. Good practices will focus on the right method to use the different tools (e.g. method for stakeholder engagement or intervention logic). Focusing on the end product, the use of the tool can be appropriate or not (e.g. models, stakeholder platforms, etc.). For simplification, hereinafter, we refer to methods and tools exclusively with the term "tools".

The tools, however, can be distinguished according to their purpose. Tools can be used for different purposes, such as for interpreting and analysing data to generate evidence, for collecting the data to be analysed, for facilitating the decisions' logic, or for identifying and assessing needs and opinions of stakeholders. Within the scope of the project, we distinguish four categories of tools relevant to the design and monitoring of the CSPs, which are defined below. To better differentiate and understand the inventory of the tools collected as part of this deliverable, each of these four categories below are further categorised in into subcategories in Section 0.

1) **Stakeholder needs assessment tools:** These tools are based on qualitative methodologies, including but not limited to participatory approaches, that enable the identification and assessment of stakeholders' perspectives and needs, which can be used to inform policy analyses and policy choices. Examples of these tools are online consultations and surveys, workshops and conferences, and focus groups and meetings.
2) **Policy choices supporting tools:** These tools rely on logic-based methodologies to facilitate decision-making. The tools are particularly useful when dealing with complex systems (i.e. characterised by interdependencies, competitions, relationships, and interactions between their parts). When multiple policy options are available, information comes from multiple sources and several actors are involved in decision-making. These tools help converge to a shared, coherent, consistent and logical policy choice. Examples of these tools are voting and prioritisation tools, end user feedback mechanisms, and expert judgement-based approaches.
3) **Policy analysis tools for evidence-based decisions:** These tools serve for generating (scientific or empirical) evidence through the analysis of policies, either ex-ante or ex-post, to inform decision-making, hence underpinning evidence-based policymaking. Tools for both ex-ante analysis (employed before policy implementation to evaluate the likely outcomes, benefits and risks associated with different policy options), and ex-post analysis (evaluation and comparison of past experiences, or similar experience elsewhere, as well as outcomes under different policies and policy mix analysis), can be employed along the design and monitoring process. Examples of these tools are statistical methods, simulation models, cost benefit analysis and impact assessments, and experimental economics.
4) **Monitoring and data collection tools:** These tools serve to collect and make available (but not to interpret) the necessary information and data for the performance review of the CAP Strategic Plan, and to inform policy analyses and policy choices. These tools allow for collecting different types of qualitative and quantitative data, information and knowledge, with different levels of accuracy and based on different sources. They can rely on different methodological, technical or technological tools. Examples of these tools are compliance monitoring tools, performance monitoring tools and data and knowledge stocktaking tools.

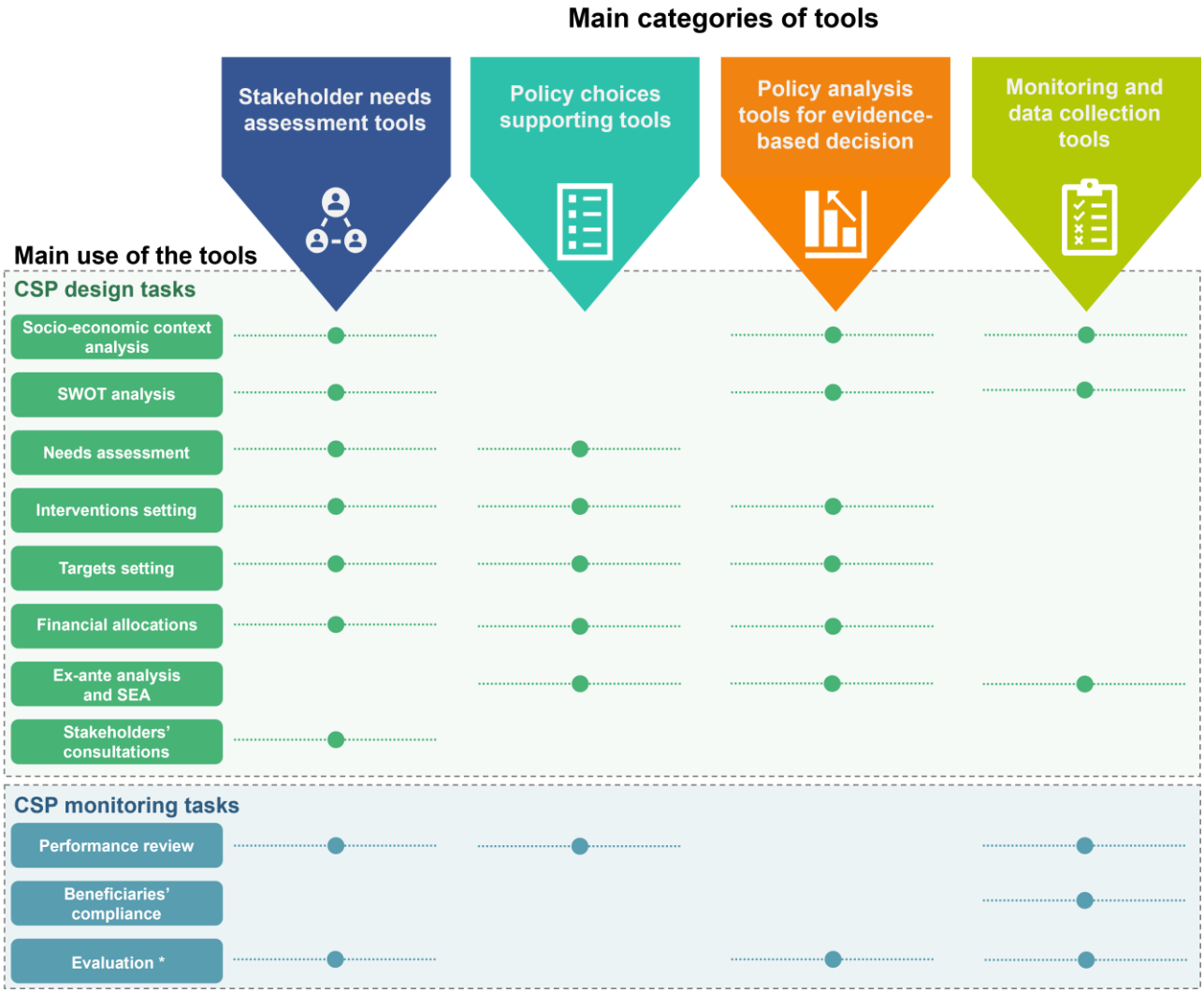
This categorisation of tools is useful to guide the research and technical work within the Tools4CAP project, as well as to inform a better and use-oriented tools' dissemination and communication strategy. It is evident, however, that such a categorisation is not perfectly applicable in the real world, as the use of the same tools can be diverse, and different tools are often used in combination. Therefore, two important dimensions must be accounted for: the possible use of the tools, and the complementarity between the tools.

Firstly, tools can have multiple uses along the design and monitoring processes of the CSPs, whereby each design or monitoring task can be carried out through different tools (Figure 1). Figure 1 shows how the different categories of tools have been used or, in the case of monitoring tasks, are going to be used by MSs, based on the results of the Tools4CAP online inventory of tools[3]. The first aspect to be noted is that all categories of tools can be used for both design and monitoring tasks. For instance, stakeholder needs assessment tools have been widely used to inform the design of the CSPs (e.g. needs assessment, context analysis), but can also be used to underpin the

[3] https://www.tools4cap.eu/tools/

performance review and for the ex-post evaluation. Likewise, monitoring and data collection tools are (obviously) key for the monitoring tasks, but they also support other design tasks (e.g. context and SWOT analyses).

Figure 1. Main categories and use of different categories of tools across design and monitoring tasks.

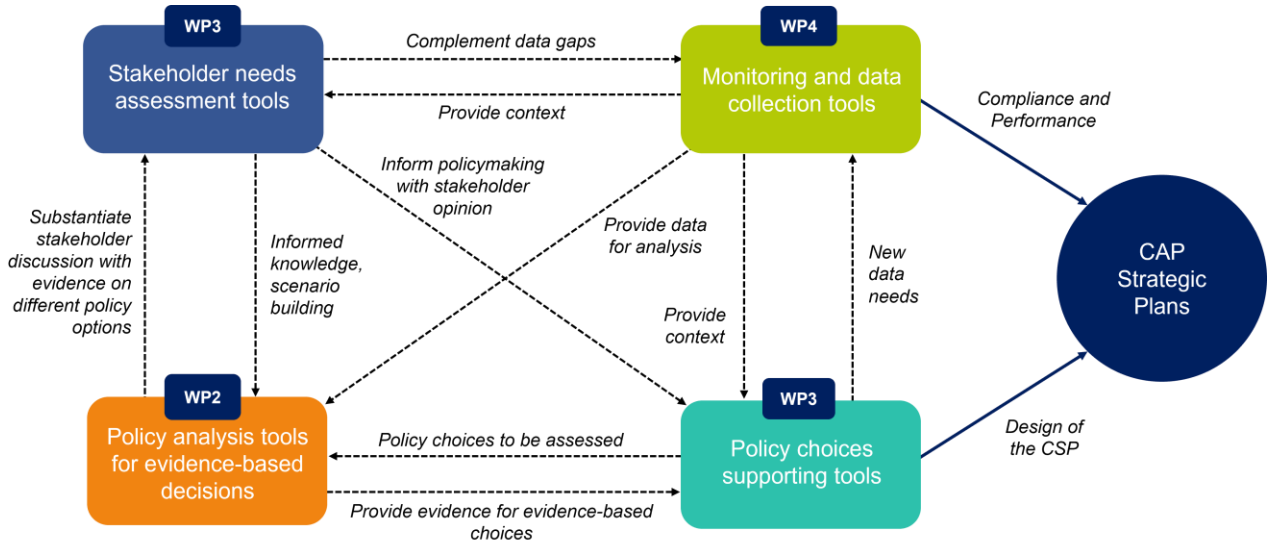


Note that the links between categories of tools and design and monitoring tasks were made based on the results of the Tools4CAP online inventory of tools (https://www.tools4cap.eu/tools/).

*Evaluation tasks are out of the scope of Tools4CAP. However, it is important to consider that different tools can be used also for evaluation.

Secondly, tools can be complementary to one another, whereby each design or monitoring task can be carried out through a combination of tools, and the outputs of different tools concur to the final choices making up a CSP fit for purpose (Figure 2). For example, all tools can rely on the use of data and information from previous experiences, especially in the case of policy analysis tools. Monitoring and data collection tools complement other tools categories as they provide the necessary data and contextual information. Thus, monitoring tools are key not only for the monitoring process, but also in the design phase. Moreover, stakeholder needs assessment tools can complement policy analysis tools (e.g. by providing informed knowledge, expert judgment or scenario building), monitoring and data collection tools (by complementing possible data gaps), and can inform policy choices tools through stakeholders' opinion. Policy analysis tools can provide evidence to feed stakeholder discussions, as well as evidence to substantiate policy choices. Lastly, policy choice tools can inform policy analysis (by defining the policies to be assessed), and monitoring tools (by defining the indicators and targets for which data should be collected).

Figure 2. Interlinks between different categories of tools



Note: WP2, WP3, and WP4 identify the project work packages within which the related categories of tools will be assessed and improved.

Several factors affect the MSs' choice of tools for the design and monitoring of the SP. A more comprehensive explanation of the use of the tools along the CSP design process, as well as the factors that have influenced their choice, are provided in the Conceptual Framework Report (D1.2 – Conceptual framework).

1.3.3. End users

In order to foster the adoption of innovative tools, Tools4CAP aims to engage tools' end users to provide them with methodological guidance and capacity building opportunities. All actors playing a role in the CAP design and monitoring processes at either the regional, national or EU level are considered the end users of the Tools4CAP coordination and support action. For both the design and monitoring phases, end users operate (or play a role) at different level of the governance. The CSP, for instance, identify a mix of actors including control bodies, managing authorities, paying agencies, competent authorities, certification bodies, monitoring committees, coordination and communication bodies, including AKIS. Thus, the types of end users addressed by Tools4CAP can be synthetised as follows:

- **Decision makers**: Ministry of Agriculture and Regional authorities where relevant, and their strategic working groups, regional and local authorities, as well as managing authorities and paying agencies.
- **Consultative agencies**: Other ministries and public agencies having relevant competencies (e.g. environmental, sanitary).
- **Executors and delegated organisations**: public and private organisations in charge of specific tasks of the strategic plan design or implementation, as well as developers/providers of services/tools functional to the design and implementation (e.g. research centres, universities, data collectors/managers, CAP network, Agri.Econ. groups).

2. Data Collection

The data for the inventory was gathered using a blend of desk research and semi-structured interviews with relevant stakeholders at the local, regional and national level across EU MSs. Our country experts covered 25 MSs, comprised of project team members across 16 MSs and external country experts across 9 MSs (Denmark and Estonia are not yet included in the analysis, but are to be covered in a future update). These experts have diverse backgrounds including through policymaking, academia, research and the practical implementation of the CAP strategic plans. During the data collection they identified the most relevant literature and key stakeholders to interview, and utilised their expertise to ensure a comprehensive coverage of the tools utilised. Their knowledge was particularly useful in ensuring that more nuanced information was captured through in-depth discussions during the interviews, allowing interviewees to provide more technical insights and experiences, and in identifying gaps from their desk research that could be addressed in the interviews.

2.1. Desk Research

The desk research undertaken involved an extensive review and analysis of existing information from various public sources. This not only included scientific and grey literature, but also data from institutional websites, digital resources, and outputs from prior projects related to the CAP or EU agriculture. A significant part of this process involved examining academic journals and government publications in local languages, providing literature, reports, and articles illuminating the tools used by EU MSs in the design and monitoring of their CAP strategic plans. Beyond traditional sources, the research also leveraged the vast resources of online databases and websites, which offer extensive collections of digital content, such as detailed reports summarising the various phases of the CSP process, as well as associated presentations, slides and press releases. This comprehensive and systematic approach to desk research allowed for an in-depth review of existing information, allowing the project team to trace out the activities undertaken at the various stages of the design and monitoring process. This preparatory step also facilitated a broader understanding of the gaps to be addressed in subsequent interviews.

In view of the subsequent updates of the inventory in January 2025 and January 2026, it should be noted that there are also a variety of existing tools from science and other policy areas, including other relevant policy domains and EU initiatives such as the climate and environment, that can be particularly relevant given CAP-related issues often overlap with other sectors, as well as previous programming periods and third countries, which could be adapted to enhance the design, implementation, and evaluation processes of the CAP strategic plans or used to enrich the knowledge base. These tools will thus be identified through desk research and interactions organised in WP6 and provided in these subsequent updates.

2.2. Interviews

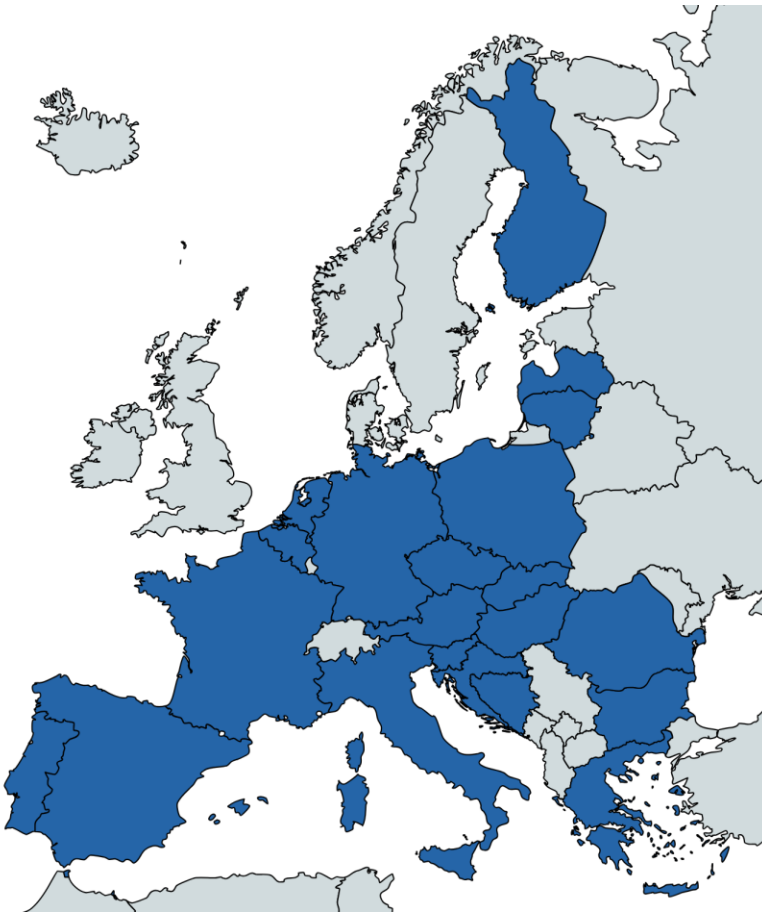
The project made extensive use of semi-structured interviews, a qualitative research method characterised by a pre-determined set of topics, alongside the flexibility for open-ended exploration. 121 interviews were undertaken with stakeholders from ministries, governmental bodies, paying agencies, regional and local authorities, scientific and research institutes, consulting firms, farmer and agricultural organisations, and environmental and consumer organisations across 25 EU MS. As previously mentioned, the remaining two MSs (Denmark and Estonia) were unable to be covered and will therefore be included in the next update. These were conducted with actors at the local, national, or EU levels, and interviews were instrumental in collecting firsthand, contextual information from individuals who have played a role in some stage of the design and monitoring of the CAP strategic plans. These individuals, involved in past or ongoing decision-making processes related to CAP strategic plan development, or those possessing clear knowledge or experience in these areas, provided both granular and comprehensive insights, including information on internal tools where no public information is available.

The interviews were conducted through diverse means, including face-to-face meetings, video calls, and telephone calls, allowing for adaptability based on the participants' convenience and preference. This ensured a broad coverage of perspectives, while maintaining the intimate, one-on-one nature of the interviews. To ensure clarity and comfort for the interviewees, the interviews were conducted in each MS's national language. This consideration fostered more candid and comprehensive responses, as participants were able to best express their thoughts and experiences. Moreover, this approach was tailored to reflect the size and administrative structures in the various MSs, with a less detailed approach required in smaller nations, reflective of their leaner administrative structures.

This approach also helped to reduce potential misunderstandings or misinterpretations that could arise due to language barriers. The semi-structured nature of these interviews allowed for a balance of structure and spontaneity in the information gathering process. While the predetermined set of topics ensured that vital areas were covered, open-ended questions provided room for the interviewees to share unique insights, anecdotes, and viewpoints, enriching the data gathered with their personal experiences and nuanced understanding of their context.

Figure 3. Stakeholder interviews

Country	Interviews
Austria	3
Belgium	6
Bulgaria	2
Croatia	4
Cyprus	4
Czechia	7
Denmark	0
Estonia	0
Finland	5
France	6
Germany	5
Greece	4
Hungary	5
Ireland	1
Italy	13
Latvia	5
Lithuania	8
Luxembourg	3
Malta	3
Netherlands	1
Poland	5
Portugal	8
Romania	6
Slovakia	4
Slovenia	6
Spain	2
Sweden	5



3. Categorisation and description of the identified tools

In this section, we describe the tools identified during the collection of the online inventory. As previously discussed, each of the four main categories of tools – stakeholder needs assessment tools, policy choice supporting tools, policy analysis tools for ex-ante and ex-post evidence-based decision making, and monitoring and data collection tools – are further subdivided into subcategories. While this additional layer of classification offers improved clarity regarding the individual and collective use of these tools by MS within the broader design and implementation context, it is important to note that it is not perfectly applicable in the real world: (i) this categorisation is made according to different purposes, as reflected in category titles, (ii) different methodological, technical or technological solutions are possible in each category, and (iii) tools within each category can have multiple uses in the design and monitoring tasks, as discussed in Section 1.3.2. For each subcategory presented within this section, a concise definition and description are provided, offering insights into their potential use, and example of tools from the online inventory belonging to each subcategory are presented.

3.1. Stakeholder needs assessment tools

Stakeholder needs assessment tools are tools based on qualitative methodologies that enable the involvement of multiple actors in the decision-making process. Qualitative tools add value by offering rich information on complex problems, capturing singular or unforeseen possible impacts, shedding light on how individuals with diverse interests and roles perceive and make sense of policies, amplifying the voices of often marginalised perspectives, initiating preliminary investigations to formulate policies, evaluate possible scenarios, and progressing towards comprehensive explanations.

These qualitative techniques can be employed alongside more quantitative methods, either sequentially or concurrently. They are pivotal in ensuring the transparency, inclusivity and the legitimacy of CSPs and in aligning the CAP with the needs and aspirations of those directly impacted by agricultural policies. These tools are also important in bringing groups who may have more limited professional analytical capacity into the decision-making process (e.g. small-scale farmer unions).

Examples of these stakeholder needs assessment tools include **online consultation and surveys, workshops and conferences,** and **focus groups and meetings**. These tools can also facilitate participatory co-decision processes between policymakers at different governance levels, such as central and regional authorities, and other public agencies and control bodies. By leveraging a broad range of expertise and diverse perspectives, these tools help foster a sense of ownership and commitment to the CAP strategic plans and harness group intelligence by converging individual ideas into a comprehensive message, shared consensus or negotiated outcomes that take aspects of opposing perspectives into consideration. The successful application of stakeholder needs assessment tools requires targeted strategies and tactics, including adept diplomacy (e.g. those chairing these structures must be as impartial as possible), which can be challenging when organisations with differing views or opinions can struggle to find consensus on divisive issues.

3.1.1. Online consultation and surveys

Description of subcategory

Online consultations and surveys are tools that leverage digital platforms to gather feedback and insights from a broader audience and raise specific questions, including (a) consultation, which involves actively seeking the opinions of interested and affected groups and (b) participation, which is the active involvement of interest groups in the formulation of policies and approaches, or in the drafting of regulatory texts (OECD 2001). Including perspectives of broader groups of stakeholders increases the information available to policy makers that decisions can be based on. Policies that affect large parts of populations especially benefit from consultation in order to better assess the impacts and minimise costs, improving overall quality of policies. Consultation increases the level of transparency and it may help to improve policy quality by bringing into the discussion the expertise, perspectives, and ideas for alternative actions of those directly affected, helping regulators to balance opposing interests and identifying unintended effects and practical problems (OECD, n.a.). This type of approach is also useful in capturing information which addresses blind spots policy makers may have. It can help identify unintended impacts of policies and allow for their redesign to cater for very specific needs or circumstances.

Since stakeholder groups and issues addressed differ, various consultation techniques can be employed. Among all techniques, quality indicators for successful consultation include ensuring that information about the consultation is complete, objective, reliable, relevant, easy to find and to understand. Moreover, clear goals and rules defining the limits of the exercise and accounting for the input needs to be formulated. Participation needs to provide sufficient time and flexibility to allow for the emergence of new ideas and proposals by stakeholders, as well as mechanisms for their integration into policy-making processes. Consultation is seen as a two-way relationship between stakeholders and policymakers. Yet, policymakers set the issues for consultation, the questions and manage the process, while stakeholders are invited to contribute their views and opinions. Lastly, the possibility of active participation by stakeholders needs to be accounted for, which requires the capacity of stakeholders to discuss and generate policy options independently (OECD 2001).

Online surveys specifically are tools used to collect qualitative and quantitative data from varying groups. Information gathered can be factual or subjective such as beliefs, opinions, future intents, etc. Online surveys are useful for collecting information from well-defined subject areas, aiding in policy-decisions and designs. Online surveys are highly adaptable and can be tailored to meet the needs of a diverse clientele. They have the potential to reach audiences across a range of geographic locations at a minimal cost and offer potential to accelerate and simplify the process of including stakeholders. Online surveys allow for easier data processing and distribution, while reducing error (Online Consultation Centre of Expertise 2005). However, while the relatively low cost of online surveys makes them attractive, care must be taken due to the so called ‘digital divide’ (i.e. unequal access to digital technology) which can prevent older stakeholders from participating effectively in an online data gathering process of this kind.

Examples of tools

In Croatia, the **E-savjetovanje** (e-consultations) tool, which is an online platform developed by the Government of the Republic of Croatia and implemented by various ministries and public agencies, was used to enhance public participation in the legislative and policy-making process, in line with the EU's better regulation agenda. The platform allowed for public consultations on draft strategic plans, with documents made available for comments on a dedicated website. Feedback gathered through this platform offered critical insights, fostering a more comprehensive and democratic approach to policy-making. Similarly, Croatia's Ministry of Agriculture used **online surveys** to gain an in-depth understanding of stakeholders' interests, needs, and priorities regarding financial instruments. By facilitating feedback from current and potential beneficiaries, the tool helped inform decisions related to the implementation of financial instruments.

In Finland, the public consultation tool **otakantaa.fi**, owned by the Ministry of Justice, offered an official avenue for organising public consultations. The platform encouraged transparent discussions by allowing stakeholders to comment on different sections of the CSP draft, with all comments being publicly visible. Feedback from this tool could be exported in various formats, aiding ministries in their deliberation processes. Hungary's approach to engaging the public in their CSP involved an **online consultation** developed in collaboration between the Ministry of Agriculture and the Institute of Agricultural Economics. By using media to reach a wide audience, the tool disseminated the principles of the CSP and gathered public opinion through an online questionnaire. The feedback obtained played a pivotal role in the finalisation of the plan.

Romania utilised a **participatory consultative tool** (i.e. a Thematic Consultative Committee) to engage a diverse array of stakeholders in the CSP drafting process. The tool facilitated feedback through surveys, online thematic discussions, and questionnaires. The inclusive approach resulted in a better-structured intervention logic, which aligned with the Commission's legislative proposals. Lastly, Romania's Ministry of Agriculture and Rural Development used **questionnaires** for collecting feedback from Technical Working Group Members to ascertain stakeholder preferences regarding intervention setting and budget allocation. The efficient and easily applicable online questionnaire tool allowed stakeholders to express their views on various aspects of the CSP, further enhancing the inclusiveness and robustness of the planning process.

3.1.2. Workshops and conferences

Description of subcategory

Workshops and conferences are in-person or virtual events that are designed for collaborative discussions, brainstorming, or decision-making offer the possibility of including perspectives, opinions of a larger group of people. Compared to online consultations and surveys face-to-face interactions open up potential for actively deliberating

and co-design policy processes. Including participation of stakeholders, experts and policymakers in events around discussion, brainstorming and decision-making increases collaboration and helps to better understand the problem, issues and risks, and to craft solutions that are more likely to meet users' needs and achieve other policy objectives. Face-to-face participation in policy-making can improve legitimacy and impact. Decisions that arise from open and collaborative processes with strong user input can be more credible. Workshops and conferences can take dynamic approaches to help people understand problems, opportunities or issues, and alternative solutions (informing), obtaining feedback on analysis, alternatives or decisions from experts, stakeholders or other policymakers (consulting), working with the public to ensure concerns and aspirations are consistently understood and considered (involving), partnering with stakeholders, experts and policymakers in the design or decision-making process (collaborating) and placing decision making in the hands of stakeholders (empowering) (DPMC 2023).

Regardless of the exact focus of the event, two key objectives must be defined before proceeding with the design of an event in order to increase its effectiveness and success: (a) the rational objective or purpose of the session and (b) the experiential objective, which refers to the experience the group needs to have. For the first, the rational and experiential objectives as well as expectations of participants of the session need to be clarified. Additionally, the ways to capture the work of the session and how they will be displayed and accessible both during and after the session need to be determined. Moreover, the best ways to keep the session moving towards its intended goal, as well as the appropriate processes, need to be laid out. For that facilitation materials and timing need to be determined. Because the experience of the participants is crucial to their effective contribution and therefore the worth of any session, it is important that the participant experience receives as much planning and consideration as the process format. For that the appropriate space for setting the mood of the meeting or the session and for influencing group dynamics constructively, including room layout, seating arrangements and use of materials need to be considered, as well as time management, including duration, schedule and pace. Moreover, the eventfulness, meaning the human dimension of group interaction, needs to be taken into consideration. This will lead to heightened enthusiasm and commitment within the group. Giving serious attention to producing a tangible end product from the process can strengthen the sense of accomplishment and commitment to action. End products can include decisions, plans or documents. Lastly, the style of facilitation and the facilitator's role and their way of relating to participants and the wider group can affect the overall experience and product. This includes preparation, balance, acknowledging everyone's perspective, body language and keeping on track (Keating 2003).

Examples of tools

In Cyprus, the **discussion conferences** were introduced by the Cyprus Ministry of Agriculture, Environment, and Rural Development to foster open dialogue among stakeholders. This method emphasises the importance of cross-disciplinary information exchange and was invaluable during the intervention setting phase of the CSP. Through this tool, large-scale consultations were carried out, especially during the completion of the SWOT analysis. These discussions ensured a refined SWOT analysis, feedback from stakeholders, and adjusted intervention strategies based on stakeholder input.

World Cafés, a structured conversational process for knowledge sharing and capturing diverse perspectives and solutions, were used in both Finland and Germany. The Finnish Ministry of Agriculture and Forestry used this method to identify strengths, weaknesses, and developmental needs in an interactive manner. Finland's process saw the initiation of 32 thematic workshops between 2019-2020, producing outputs that were documented for future review. On the other hand, Germany's Federal Ministry of Food and Agriculture utilised a World Café to facilitate structured discussions around different issues during their stakeholder consultation process.

Hungary's use of **workshops and round-table discussions**, both online and in-person, emphasised structured dialogue and consensus-building among stakeholders. These workshops and discussions were primarily focused on SWOT analyses, need assessments, and intervention designs. The Ministry of Agriculture in Hungary prepared written documents that captured the essence of these dialogues. Similarly, Luxembourg employed workshops for their SWOT analysis phase, with the outcomes of these workshops being compiled into detailed minutes. Latvia's utilised a **network of seminars**, conducting over 24 seminars in a span of three months that aimed to demystify the CAP language for stakeholders and bolster collaboration. Romania, on the other hand, took a comprehensive approach by combining **workshops, conferences, and working groups**, ensuring all stakeholder perspectives were considered during the CSP design phase. This multi-faceted approach generated detailed documents and analyses that represented collective insights and decisions.

Sweden introduced a **consultation forum** as a novel method to engage with stakeholders. These forums covered a range of topics from general strategy to SWOT analysis, with the discussions documented for further insights.

Lastly, Belgium's Flanders region initiated a **public consultation** tool, aimed at identifying needs for Flemish agriculture, the environment, and the broader countryside. The consultations produced a comprehensive report that served as a foundational document for subsequent analyses.

It is important to note that a more extensive use of workshops and conferences in the development of CSPs by some MSs may have been constrained by the restrictions imposed due to the COVID-19 pandemic. Many MSs were likely committed to ensuring that their civil services set a positive example for the broader society by adhering to public health guidelines, which included limitations on in-person gatherings. This commitment to public health and safety could have limited the capacity for larger in-person discussions, potentially limiting the use of these types of tools.

3.1.3. Focus groups and meetings

Description of subcategory

Focus groups and similar meetings are tools designed for gathering insights from specific groups of participants in a controlled environment. This can include stakeholders, policymakers and experts. A focus group is a facilitated group discussion focused on a specific content, in which the discussion is moderated, oftentimes on the basis of a discussion guide after an introductory stimulus (e.g. in the form of a presentation, a text or a picture) (Dürrenberger et al. 1999). The method is mainly used in market research, political consulting and qualitative social research and is increasingly being used to elicit evidence for policy and research outputs (e.g. McCrum et al., 2009). The technique can be used to explore stakeholders' views and perceptions with the purpose of reviewing existing policies and supporting agenda setting and policy development (Kasemir et al 2003). In particular, the research in group situations is suitable to find out motives, opinions, wishes and needs.

Participants are encouraged to work on topics more comprehensively and in a more diverse way than in individual interviews, so that previously unconsidered aspects of the topic and new impulses can be elaborated. Advantages are a possible alternation between active and passive phases and that collective attitudes are captured in addition to individual opinions. The literature recommends a number of participants of six to eight or 10 and a duration of between one and a half and three hours (Henseling et al. 2006; Dürrenberger et al. 1999). The discussion is documented with the help of audio and/or visual recordings, a transcript and, if necessary, other media (e.g. flipcharts). It is recommended that the discussions are guided by a skilled facilitator, who works guided by a predetermined set of questions. The group members influence each other by responding to comments made in the discussions.

Focus groups are, however, necessarily constrained in terms of their ability to generalise and apply findings to whole populations, mainly because of the small numbers of people participating and the inbuilt assumption that participants will not be a representative sample (Scott 2011). Focus groups can also be instrumental in assessing the reactions of diverse participants to the opinions and statements expressed by their counterparts within the group setting. This can help to identify areas of weak and strong differences of opinion, as well as areas of weak and strong agreement. Such insights can enable the facilitator to discern the boundaries of the potential "solution space", ensuring a more nuanced and comprehensive understanding of stakeholder perspectives. Despite these attributes, however, it is important to acknowledge constraints pertaining to the generalisability of focus group findings. While focus groups outcomes may become more generalisable if they are repeated with different participants, it is not always possible to run multiple focus groups on the same topics when the participants are representatives of organisations rather than individuals, which is often the case in policy settings.

Bilateral engagement with stakeholders also stands as an important form of discourse in policy contexts. This approach entails one-to-one meetings between stakeholders, providing a confidential and open platform for sharing perspectives, concerns, and suggestions. The more intimate setting can allow stakeholders to communicate in plain language, offering more unguarded and comprehensive insights. However, despite their advantages, bilateral engagement can carry inherent limitations. They are generally more time-consuming, making it a challenging option for navigating numerous stakeholder relationships concurrently, and the approach may also be regarded as traditional or old-fashioned in the rapidly evolving landscape of stakeholder engagement tools.

Examples of tools

In Bulgaria, the Institute of Agricultural Economics plans to implement **In-depth Interviews** with the primary goal of gathering reliable agro-statistical data. This method allows a more nuanced understanding by directly engaging with farmers and agricultural organisations. By facilitating real-time analysis of the prevailing agricultural landscape, the

interviews offer insights that can be fed into a comprehensive SWOT analysis of the CAP. The resulting outputs guide strategic decisions, forming a foundation for effective policy formulation.

France utilised their **Impactons! Public debate** tool, which offered a structured platform for public debate on critical CSP issues during the design phase. Developed by the Commission Nationale du Débat Public, this tool comprises various features such as a three-day debate, online platforms, territorial public debates, and home debate kits. The culmination of these debates led to a comprehensive report encapsulating all discussions and insights. Similarly, Ireland, embraced **town hall meetings** and **open public consultations** to engage a broader spectrum of stakeholders. Facilitated by the Department of Agriculture, Food and the Marine, town hall meetings served as platforms for the public, industry stakeholders, and policymakers to discuss agricultural policies openly. These meetings, held nationwide, produced detailed reports that summarised key discussions and ideas. Similarly, open public consultations were valuable in gathering insights across various regions and stakeholders. A mix of methods, from written submissions to workshops, were employed, and the outcomes were comprehensively documented and made publicly accessible online.

In Cyprus, both **internal and external focus groups** played a significant role in the CSP design phase. The Cyprus Ministry of Agriculture, Environment and Rural Development established internal focus groups to leverage expertise during the SWOT analysis and to make consensus decisions on key policy issues. The result of these sessions facilitated development of the intervention logic and budgetary planning. On the other hand, external focus groups were beneficial for reviewing the SWOT analysis in a scientific context and aligning with broader EU directives, national policies, and the green deal paper. Through these groups, interventions related to agri-environmental measures were validated, producing detailed discussion notes as outputs. Similarly, **focus working groups** for each Specific Objective (SO) were utilised in Spain to offer a multi-faceted analysis of the agricultural sector. By consulting databases and performing spreadsheet analyses, these groups provided comprehensive reports for each SO, enabling the subsequent SWOT analyses and needs identification. Moreover, Spain also employed **partnership meetings and public consultations**, allowing stakeholders to voice their opinions on various analytical components of the CSP design, producing detailed stakeholder feedback reports.

In Lithuania, the **focus groups** were crucial in engaging a variety of stakeholders for needs identification and prioritisation in the CSP design phase. Enabled by the Lithuanian Centre for Social Sciences and Institute of Economics and Rural Development, these focus groups produced detailed SWOT analysis reports. Slovakia adopted a more structured approach through the use of **working groups**. Through these groups, the Ministry of Agriculture and Rural Development formulated a unified national strategic plan with diverse member composition. They also introduced sub-working groups for more granular intervention setting, resulting in better-crafted intervention formulations. Netherlands, under the Ministry of Agriculture, Nature and Food Quality, organised **stakeholder consultation rounds**. These consultations aimed to gather stakeholder perspectives on CSP design and reach consensus on key policy issues, ensuring their commitment and support to the finalised CSP. Through 25 meetings held between 2019 and 2021, the outcomes included prioritised needs, interventions, and performance indicators.

3.2. Policy choices supporting tools

Policy choices supporting tools encompass tools based on very different methodological approaches, but which have all been developed in response to rapidly changing policy goals and instruments, and where data might be lacking or where no prior knowledge on the potential behavioural response exists. Policy choice supporting tools are based on logical solutions and facilitate decision making processes. Under policy choice supporting tools, we include tools that are not yet mainstream in CAP policy evaluation, but are sometimes used by policy makers whether to compensate for a lack of data, provide a rapid response in the face of policy time constraints, and/or incorporate outputs which might play a significant role in the political backroom dynamics.

These tools are particularly beneficial when grappling with complex systems characterised by a range of interdependencies, frictional relationships, and interactions among their individual components. In such complex scenarios, the information and inputs can come from multiple sources and may present a wide array of possible policy options. The tools are designed to assist in distilling these options into a shared, coherent, consistent, and logical policy choice. They can include participatory approaches to involve multiple actors (like agricultural organisation, syndicates, cooperatives, NGOs, environmental organisations, research and academia) in the decision-making process, thus making the process more transparent, inclusive and legitimate. They also include tools to facilitate participatory co-decision processes between policymakers at different governance levels, such as

central and regional authorities, and other public agencies and control bodies. By using these tools, policymakers can gain a clearer understanding of the dynamics at play, develop more effective strategic plans, and make more informed and sound decisions.

3.2.1. Voting and prioritisation tools

Description of subcategory

Voting and prioritisation tools refer to a spectrum of instruments and methodologies that employ voting or analysis mechanisms to arrange or prioritise tasks. These tools are widely used in various domains including policy formulation, project management and industry, facilitating a democratic and structured approach for decision-making and prioritisation processes. In the context of the CAP, these tools can be used to prioritise needs, objectives, or interventions. The implementation of voting and prioritisation tools can help foster a collaborative environment in which every stakeholder has an opportunity to voice their opinions and preferences, thereby ensuring that the collective perspective is taken into account in decision-making processes. This can not only aid in understanding the most important policy needs or objectives, but also improves stakeholder alignment and commitment towards the attainment of prioritised objectives. Common examples can include cumulative voting, a method in which stakeholders allocate a fixed number of votes among a set of options, allowing them to express preferences based on the relative importance or urgency they assign to each option, and dot voting, whereby stakeholders express preferences by placing a dot or marking options that they favour (Nautiyal & Goel 2021). Additionally, multi-criteria decision tools are also relevant, with these tools using a structured methodology to evaluate and compare different options based on different criteria and objectives. They are often integrated with participatory approaches to involve multiple actors in the voting process.

This type of approach works well with stakeholder organisations that are familiar with traditional political decision-making processes based around negotiation. This requires that the stakeholder organisation has clear leadership, a clear set of objectives and has made a prioritisation of those objectives. This then gives the representatives of the organisation the mandate and capacity to express voting preferences. However, voting works less well with stakeholder organisations that represent a loose coalition of interests, where the leadership structure is unclear or characterised by an activist mentality. There may be a poor understanding of the need to develop a list of objectives and to prioritise among those objectives. This can lead to an inability or unwillingness on the part of the organisation's representatives to vote. This can be because all of the objectives appear to have equal importance.

Examples of tools

In Germany, a **Number-Voting Tool** for needs prioritisation was developed through collaboration with Austrian partners in the Federal Ministry of Food and Agriculture (BMEL). Deployed by ministries, its primary aim was to ensure a systematic approach to prioritising needs, especially where uncertainty exists in the process. The tool functions through an intricate table enumerating different needs, wherein the Federal Ministry and states enlist arguments for or against a particular prioritisation. Through this process, needs are ranked on a scale of 1-4, followed by discussions with stakeholders in a participatory event. The final output is an Excel file outlining the prioritised needs. Likewise, a **Voting Tool** for needs prioritisation was used in Romania, introduced by the Ministry of Agriculture and Rural Development (MARD). MARD employed its in-house expertise in the ranking of needs by leveraging the team's prior knowledge of EU rules, objectives, and priorities, ensuring efficient needs prioritisation within given time limits. The departments were presented with a needs table, and a hierarchy was established based on their prioritisation. Stakeholders further discussed this hierarchy in an online event. The final output consisted of a comprehensive database containing the prioritised needs, validated by both internal and external stakeholders.

Due to a tight schedule that restricted the use of more rigorous testing models, Spain adopted **Multicriteria Analysis**. The National Ministry of Agriculture identified 85 distinct needs, subsequently categorising them into five major groups. These needs were then ranked using four primary criteria, including their alignment with broader political objectives, connections to other goals, measurability, and overall relevance. The culmination of this analysis was a classification system that systematically prioritised the various needs. In Slovenia, a formal **Needs Prioritisation Approach** was used in response to critiques of Slovenian agricultural policies, which were previously seen as too broad and inefficient. Designed by the auditing company Deloitte Consulting LLC in collaboration with the Agricultural Institute of Slovenia, this tool was implemented by the Ministry of Agriculture, Forestry and Food's Directorate of Agriculture. The methodology amalgamates various elements like survey findings and evaluation report outcomes to establish a rank-based prioritisation for the specific objectives of CAP. This ranking system,

which is grounded in economic considerations, became instrumental in the overarching methodology for needs prioritisation in the region.

Similarly, in Italy, a **Constrained Cumulative Voting Tool**, owned by the Italian Ministry and National Rural Network, was used to streamline the collective discussion and prioritisation of territorial needs. This approach aimed to adhere to institutional prerequisites for a participatory decision-making process in CSP drafting. Utilising the constrained cumulative voting technique, whereby participants distribute a set number of votes among options, with specific limitations on how votes can be allocated to ensure broader preference expression, the tool assesses and organises needs, supporting the decision-making process. Its alignment with the European Commission's legislative proposals establishes its credibility. The outcome of this tool is a shared consensus on the significance of each need, categorising them into coherent groups based on their importance. Lithuania also adopted the **Cumulative Voting Approach** that was initiated by the Lithuanian Centre for Social Sciences, Institute of Economics and Rural Development and was implemented by Ministries. By employing this method, Lithuania sought to involve various stakeholders and regional authorities in a participatory manner. The methodology, grounded in the SWOT analysis results, utilised stakeholder voting to prioritise needs. The end product was a clear documentation of prioritised needs and intervention contexts, providing structured direction for policy formation.

Poland explored the potential of a **Analytic Hierarchy Process** (AHP) tool for needs prioritisation during the design phase. While the intent was to utilise a sophisticated method for prioritisation, Poland found the AHP method too complex. The detailed functioning of the AHP involved pair comparisons with scales, designed to mirror preferences of options, further combined with expert-based methods. Since simulations highlighted that the AHP's time-intensive nature and outcomes were akin to the expert-based approach, Poland opted for the latter. Nevertheless, a thorough examination was provided, giving insights into how this approach could be deployed, along with a critique of the AHP's feasibility and relevance.

3.2.2. End user feedback mechanisms

Description of subcategory

End user feedback mechanisms can be considered as tools that act as channels for acquiring insights, amendments, and assessments from a diverse range of end users. In the context of the CAP, this includes stakeholders involved in the design and implementation processes of the CSPs that operate at the regional, national, or EU level, such as decision makers (e.g. ministries and regional authorities), consultative agencies (e.g. other public agencies), and executors and delegated organisations (e.g. public and private organisations in charge of specific tasks). These tools are particularly relevant to the CSP design phase (i.e. for budget planning, coherence and target setting). These mechanisms encompass various tools that often overlap with other categories (e.g. stakeholder needs assessment tools), such as structured templates, questionnaires and interviews that are tailored to effectively gather feedback and data from end users through an interactive process.

Examples of tools

In Germany, **Questionnaires on Amendment Requests from Counties**, a tool developed by BMEL, is used to monitor amendments concerning measures or budget allocations during the ongoing funding period. This tool plays an important role in ensuring consistency in the amendment coordination process, especially given Germany's federalised structure. Functionally, the mechanism involves dispatching templates in table forms to the federal states for completion. Upon receipt, the Ministry conducts informal consultations with the Commission and further engages with the federal states based on the data provided. Any arising queries are then addressed through this platform. Additionally, regional monitoring committees discuss and provide comments on the suggested changes. This systematic approach results in a comprehensive list of amendments, which is subsequently sent to the Commission. Furthermore, all these amendments are concurrently logged into an electronic system for reliable record-keeping.

Belgium Wallonia employs **Intervention Fiches**, authored by the Ministry of Agriculture – Wallonia, as a tool to support their CSP process. This tool presented a straightforward and cost-effective means of conveying relevant information to agricultural stakeholders. Each fiche provides a succinct summary of a specific intervention type. It outlines the eligibility criteria and the procedures required to avail of support, thus making the information transparent and easily accessible for its target audience. The primary outcome of this tool is to deliver comprehensive documentation on every intervention type, which describes the nature of support farmers can expect from the CAP. This not only improves transparency, but also understanding among stakeholders.

3.2.1. Expert judgement-based approaches

Description of subcategory

Expert judgement-based approaches can be thought of as encompassing a range of tools that predominantly depend on the insight, experience, and analysis of specialists in the field for making informed decisions. These tools utilise the specialised knowledge and understanding of individuals or groups with extensive experience in a specific field to analyse circumstances, guide decision making, and provide solutions. The reliance on expert judgment is predicated on the understanding that experienced stakeholders can offer insights often beyond the reach of quantitative models, providing a more holistic and context-sensitive perspective to decision-making. These methods not only offer an in-depth analysis, but also provide the flexibility and adaptability essential for navigating complex policy-making landscapes.

In these approaches, decisions are derived from the extensive knowledge, research, and analyses conducted by domain experts and often entail a collaborative approach. In the context of the CAP, experts can employ their comprehensive understanding to assess and contribute to various aspects of the CSP design and implementation process and to make decisions aligning with overarching goals and objectives. This expertise is particularly relevant during the prioritisation of needs. The methodologies within this subcategory encompass a broad spectrum of techniques and other evaluative strategies. They may therefore overlap with voting and prioritisation tools and can be supported by participatory methodologies.

Here it can be important to ensure that a range of experts with differing domains of expertise is selected (e.g economic, agronomic, environmental, sociological). Over reliance on experts from a single domain may lead to gaps in expert knowledge and poorer outcomes from the expert judgment-based approach.

Examples of tools

In Romania, a **Logic Model** was used due to time constraints that limited the use of more intricate models. This tool is based on spreadsheet computations that were employed to verify the correlation between the nation's needs, objectives, and financial allocations. This spreadsheet-based study allowed for a precise correlation analysis, the results of which informed recommendations provided in the ex-ante evaluation report.

In Finland, the Ministry of Agriculture and Forestry developed an **Internal Excel Tool** for facilitating a systematic prioritisation of needs within the CSP. The underlying rationale for its creation was to provide a consistent and objective evaluation mechanism for varying needs. This tool functioned by assigning scores to each identified need based on diverse criteria encompassing social significance, urgency, relevance, the role of CAP, and political importance. Once each need was scored, they were then sorted in an Excel file. As an output, the tool offered scores for each need, facilitating a straightforward identification of those of highest priority.

Lithuania explicitly employed **Expert Judgement** during the design phase, specifically for target setting and budget allocation. It will also play a role in compliance and performance monitoring. The adoption of the tool, initiated by the Ministry of Agriculture and the National Paying Agency, ensured a robust scientific and expert-driven approach. The methodology was particularly utilised in the preparation of Lithuania's Rural Development Plan (RDP) for the period 2023-2027. By leveraging expert analyses and evaluations, the Expert Judgement tool yielded well-defined target settings and precise budget allocations that informed the structuring of the RDP.

Lithuania utilised **Comparative Analysis**, overseen by the Lithuanian Centre for Social Sciences and the Institute of Economics and Rural Development. It aimed at offering an in-depth look at the nation's agriculture and rural development and informing decisions on interventions and the selection of relevant indicators. Rooted in a comprehensive SWOT analysis, the output of this tool provided a structured framework for subsequent interventions. Lastly, Belgium's Flanders region established **CAP internal working groups** that were managed by the Department of Agriculture and Fisheries and which were concentrated on discussing various intervention proposals across distinct themes such as Environment & Climate and Innovation & Knowledge. The technical dialogues that ensued not only led to the creation of a list of feasible interventions but also contributed significantly to the overall elaboration of the CAP plan and its associated intervention sheets.

3.3. Policy analysis tools for evidence-based decisions

These tools are used to generate (scientific or empirical) evidence through the analysis of policies, either ex-ante or ex-post, to inform decision-making, hence underpinning evidence-based policymaking. These tools are mostly

based on a quantitative approach and generate robust, scientifically grounded evidence by scrutinising various policies and allow for evidence-based policymaking. Ex-ante analysis tools are employed before policy implementation and are instrumental in evaluating potential outcomes, benefits, and risks associated with various policy options. Their role is to provide a forward-looking assessment to help policymakers understand potential impacts, thus enabling them to make more informed policy decisions which can bring about more desirable outcomes or avoid less desirable outcomes. Ex-post analysis tools, on the other hand, are used for evaluating and comparing past experiences or similar experiences from other contexts and assess outcomes under various policies and policy mixes. This retrospective examination provides valuable insights into the effectiveness and impacts of implemented policies, enabling improvements. Resources for policy analysis can sometimes be limited. Before policy analysis can take place, models have to be developed, maintained and even modified to ensure they remain relevant, and this requires resources and the right modelling expertise. Where resources are more limited there is a tendency to emphasise ex-ante analysis over ex-post analysis, as policy makers emphasise the understanding of the future over the past.

These tools include statistical methods, simulation models, cost-benefit models and impact assessments, and experimental economics which evaluate economic viability, potential socio-economic and environmental impacts, simulate various policy outcomes, and generate evidence-based data. It should be noted, however, that more complex models, like those leveraged for appraising potential economic, ecological and social effects of interventions, can be problematic when there is a need for broad stakeholder engagement. Results from these more abstract models with unfamiliar metrics or sectoral definitions might not be easily explained to non-modellers, potentially hindering effective communication. However, some modelling platforms are designed in such a way that they are capable of producing results that are more easily interpreted by individuals who may not have extensive experience in modelling.

3.3.1. Statistical methods

Description of subcategory

Statistical methods can be considered as tools that utilise statistical techniques to analyse and interpret data to provide evidence-based insights. More specifically, quoting Stock and Watson (2007), 'econometrics uses economic theory, mathematics, and statistical inference to quantify economic phenomena. In other words, it turns theoretical economic models into useful tools for economic policymaking'. Overall, the use of quantitative techniques can support the policy-making process by translating (qualitative) hypothesis, e.g. a reduction in fertiliser application will lead to a decline in yields, into quantitative (and much more specific) insights, e.g. a 1% reduction in the fertiliser application rate can lead to a 0.5% yield decline in the case of crop *X* under given conditions.

Providing a comprehensive overview of the available econometric and statistical techniques (Wooldridge, 2019; Zong, 2022) goes beyond the scope of this document, since the main purpose of this section is to provide an illustration on to how the design and evaluation of the CAP can benefit from the use of quantitative techniques. Nevertheless, some references to techniques that are commonly used in the policy cycle or approaches which are less popular, although they could make an interesting contribution are mentioned.

To begin with, policymakers can rely on counterfactual analysis (Loi and Rodrigues, 2012) to evaluate the casual effect of the intervention under consideration on those outcomes that are of importance for the policy-maker. Examples of techniques that can be used when carrying out impact evaluation of public interventions are propensity score matching (PSM), regression discontinuity design (RDD), difference-in-differences (DID) or instrumental variables (IV) among other techniques.

Secondly, policymakers might be interested in understanding the impact of an intervention (or phenomena) over time. These effects can refer to relations between variables that occur within the same period of time (contemporaneous relations), interventions in the present that have an impact in future periods (the so-called carry-over effects), relations in which two interacting elements influence the future behaviour of each other (feedback), sudden changes in the development of a variable (structural breaks) or long-term adjustments that are easily captured by means of trend variables. In those cases, time series econometrics provide a wide range of approaches to capture these type of dynamic relationships, e.g. Vector Autoregressive (VAR) models, Vector Error Correction models (VEC), Structural Equation Models (SEM). Overall, the chosen technique will depend on the characteristics of the data, e.g. the presence of a unit root, and the final selection of the estimated model will also consider other aspects such as the avoidance of multicollinearity or the lack of statistical significance of the parameters amongst

others. The application of time series econometrics for policy-making is not a recent development since its use for the analysis of public policy has been a topic present in the scientific literature since the 1970s (Gray, 1973).

The Mixed Estimator technique (Theil and Goldberger, 1961; Theil, 1963) which combines sample and non-sample data deserves special mention. This econometric technique is appropriate when trying to improve the plausibility of the estimates and increase the efficiency of the estimated parameters. The former is particularly attractive in the context of scenario simulation (by large-scale models) in which unrealistic impacts based on 'explosive' model parameters are of no use to inform policy-making. Focusing on its potential application within agricultural economics, the mixed estimator can help to bring together empirical observations, i.e. parameters or elasticities estimated based on statistical data, with agronomic knowledge regarding elements such as plausible yield responses or maximum potential yields. An application of this technique in the case of the milk supply module of the AGMEMOD model is presented in Jongeneel and Gonzalez-Martinez (2022).[4]

Statistical techniques and econometrics can contribute to support evidence-based decision-making in the CAP context by delivering quantitative insights regarding the potential (or actual) impact of policy interventions. Therefore, statistical and econometric analysis are important tools when thinking of implementing a policy (e.g. ex-ante impact assessment) or assessing the actual impact of an intervention following its implementation (e.g. ex-post impact assessment). Additional insights on the contribution of impact assessments to the policy cycle are provided in OECD (2014).

Examples of tools

In Bulgaria, the Institute of Agricultural Economics utilised **statistical and environmental data analysis** during the design phase, specifically in the SWOT Analysis, and expects to do so again during performance monitoring. This tool is able to provide accurate and representative insights, leveraging extensive data collection and analysis, incorporating various statistical methods and environmental data sources. It can yield robust evidence regarding both performance and compliance, aiding significantly in strategic planning and policy decisions. Similarly, in Romania, the Ministry of Agriculture and Rural Development also used, or is expected to use, **statistical data analysis** for a wide range of tasks, from socio-economic analysis through to compliance monitoring. Due to the infeasibility of creating an interoperable data tool within tight timeframes, this tool used spreadsheets to analyse data from various sources, offering a comprehensive understanding of the socio-economic landscape. The tool led to detailed reports that were foundational for SWOT analyses and identifying essential needs. Furthermore, Spain also utilised **data analysis** through both the National Ministry of Agriculture and the Regional Ministry of Agriculture, alongside other national ministries. The urgency of the CSP design phase necessitated this approach, which extracted insights from an array of sources, heavily relying on spreadsheets for analysis. The outputs provided a multifaceted view of Spain's agricultural sector, crucial for subsequent SWOT analysis and need identification.

Lithuania's approach, as devised by the Lithuanian Centre for Social Sciences, Institute of Economics and Rural Development, included **statistical socio-economic analysis**. This tool, used by the Ministry of Agriculture of the Republic of Lithuania, dived deep into socio-economic factors using various data sources, including Eurostat, FADN data, and national databases. The comprehensive analysis outlined strengths and weaknesses in Lithuania's agricultural and rural development, assisting in the prioritisation of needs and decision-making during the CSP formulation. Similarly, Poland employed **statistical socio-economic context analysis** through the Institute of Agricultural and Food Economics – National Research Institute. This tool was chosen due to time and budget constraints and made use of publicly available statistics, primarily from 2012-2018. By presenting this data with consistent EU-level context indicators, the tool produced a diagnostic report on the socio-economic conditions in each of Poland's voivodeships, allowing for a more granular understanding of the agri-food sector and rural areas.

3.3.2. Simulation models

Description of subcategory

Simulation models are tools that primarily focus on simulating scenarios, interventions, or impacts. They can be used to predict the outcomes of various policy decisions before they are implemented. As defined by the EU Better Regulation Toolbox (European Commission, 2021a), 'Models are stylised representations of the real world that are used to make projections or to assess the behaviour of a system under specific (policy) assumptions'.

Focusing on the agricultural field, there is a tradition of producing outlooks for the EU agrifood market by means of partial equilibrium models. As an illustration of this type of work, we refer to the market outlook published by the

[4] See, also, Jongeneel (2000) for further discussion on the application of the Mixed Estimator in the context of agricultural economics.

European Commission which relies on the AGLINK-COSIMO model (European Commission, 2020; 2021b) and the market outlook at Member State level prepared by the AGMEMOD consortium on a yearly basis.[5] In parallel, models are being increasingly used for simulation of scenarios that contribute to the ex-ante assessment of upcoming policies, such as for example the 'Farm2Fork' Strategy (Beckman et al., 2020; Barreiro-Hurle et al., 2021 Bremmer et al., 2021; Henning et al., 2021).

Moving onto the characteristics of the modelling tools available for the representation of the agricultural sector, it is difficult to provide a general description that fits all of them given the heterogeneity of the existing tools.[6] Firstly, models can differ regarding their projection period or time horizon (e.g. period ending in 2030, 2050), time frequency (e.g. yearly, 5-year period), scale (e.g. farm level, sector level), as well as their spatial coverage (e.g. region, Member State, EU, global). Secondly, models can be of different nature: (i) partial-equilibrium models *versus* general computable equilibrium (CGE) models; (ii) simulation *versus* optimisation models; (iii) deterministic *versus* stochastic.[7, 8]

Another aspect that deserves especial mention is the use of integrated modelling which becomes particularly relevant when dealing with policy questions that need to be approached from a multi-disciplinary perspective (Barbosa et al., 2023). This approach, which relies on the (direct or indirect) exchange of information between models (hard or soft linking), permits modellers to provide more comprehensive insights than when using a single model on its own (Wicke et al., 2015; Gonzalez-Martinez et al., 2021). This is an alternative to undertake the usual 'model extensions' in which a model is further enhanced with additional indicators. These extensions might not lead to an optimal outcome, since the resulting additional indicators might not be as comprehensive as the set of indicators delivered by a modelling system. Apart from that, there are also technical limitations (running time, feasibility to solve in case of an optimisation model, etc.) preventing modellers from carrying out 'endless' extensions of their modelling tools (Hamilton et al., 2022). Looking at the past, there is a considerable amount of literature in the energy and environmental fields in which integrating modelling and multi-model analysis have been applied, while applications in the agricultural field are much more limited. Nevertheless, as an illustration, we mention the AGMEMOD-MITERRA modelling system which covers primary agriculture from a market/economic perspective (insights delivered by AGMEMOD) and translates the developments for the EU agricultural sector into relevant environmental indicators (MITERRA-EUROPE).[9]

Additionally, partial equilibrium agricultural models are tools used in policy analysis which are particularly useful when looking at specific sectoral impacts. Such models consider the interplay between supply and demand. They simplify the real-world complex relationships that exist across agriculture and other commodity markets. Importantly, they use a simplifying assumption that assume that changes in one sector will not significantly affect others. In developed economies this is a reasonable assumption with respect to agriculture, as, in terms of economic activity, agriculture tends to be a small share of the overall economy in richer countries. Such models help policymakers and researchers to understand the impact of policy interventions on agricultural markets.

Partial equilibrium models take account of agricultural commodity prices and associated production costs and are built using data from agricultural commodity supply and use balances composed of production, imports, domestic use, exports and stock changes. Policy scenarios can be examined with such models to assess policy impacts on agricultural commodity production, consumption, prices, and trade patterns. Sometimes such models will also have a well-developed representation of agricultural production costs, allowing such models to be to examine the impact of alternate policy options on agricultural incomes. Extensions of such models can be developed to examine environmental impacts.

Examples of tools

Belgium Wallonia employed their **Support Simulation Tool** for setting targets during the CSP design phase. Developed by the Ministry of Agriculture – Wallonia, in collaboration with the consulting firm ADE, this tool is tailored to the specific context of Wallonia and was constructed with local dynamics in mind. Its main purpose is to function as an income and aid simulator, assessing the implications of financial support based on the technical and economic

[5] Further details are available at: https://agmemod.eu/about-agmemod/current-outlook.
[6] For a better understanding of the characteristics of some modelling tools that are frequently used by the European Commission, the reader is referred to the Modelling Inventory and Knowledge Management System of the European Commission (MIDAS). See, also: https://web.jrc.ec.europa.eu/policy-model-inventory/.
[7] See, Nikas et al. (2018) for further details on each approach.
[8] See, also, European Commission (2021a) for further details on modelling tools typology.
[9] This system is currently being used for the simulation of scenarios in the context of the SIMPLE (Scenario modelling for assessing impacts of policy changes and socio-economic effects on ecosystem services of soils) project. Available at: https://ejpsoil.eu/soil-research/eom4soil/into-dialogue/simple.

attributes of farms. It does this by considering a myriad of factors including farm size and region. The tool contrasts its findings with 2019 data, offering projections that account for diverse farm types. This allows policymakers to forecast support levels across various criteria.

Slovenia's adopted the **SiTFarm Tool**, which is unique to the country and caters to a spectrum of agricultural levels, from single agricultural holdings to larger sectors. Created by the Biotechnical Faculty, University of Ljubljana, this tool enables the examination of impacts of different measures at multiple agricultural levels. At its core, the tool facilitates nuanced scenario analyses for both individual agricultural holdings and broader sectors. Central to its design is the inclusion of 145 model farms that aim to represent Slovenian farms. This aids in conducting multilayered analyses, specifically concerning interventions during the CSP preparation. By simulating diverse policy scenarios, the model's results aid policymakers in understanding potential impacts, ranging from direct payments to the uptake of voluntary measures. Furthermore, it integrates comprehensive data from the Agricultural Institute of Slovenia, ensuring outputs are anchored in robust economic information, and performs complex model calculations based on mathematical programming. The outputs from the tool are diverse, offering economic, technological, and environmental metrics.

The Netherlands utilised its **Eco-Scheme Farm Simulation Tool**, developed by Wageningen Economic Research. Designed to support the intervention design of eco-schemes by assessing both ecological and economic impacts of proposed interventions, this tool has multiple functionalities. The tool establishes a baseline for agricultural structures, evaluates ecological classifications, and evaluates ecological effectiveness per hectare. The tool also provides a deeper understanding of the economic repercussions for individual farms, by providing a regionalised economic impact analysis for individual farms, considering varying farm sizes and types. One of its notable features is its ability to calculate the costs of farming without chemical-synthetic plant protection products. Furthermore, it recommends ways to optimise the ecological effectiveness of eco-schemes and evaluates their potential impact on protected resources. This layered approach provided a more holistic insight into the CSP, considering both the environmental and economic aspects.

3.3.3. Cost benefit analysis and impact assessments

Description of subcategory

Cost-Benefit Analysis (CBA) and Impact Assessments (IA) are systematic analytical tools used to evaluate the economic, social, and environmental outcomes of proposed policies or interventions, comparing their anticipated costs to potential benefits to guide informed decision-making. According to Boardman et al. (2017), 'Cost-Benefit Analysis involves a systematic process for calculating and comparing benefits and costs of a decision, policy, or project'. It plays a significant role in ensuring that resources are used efficiently, and the selected alternatives provide the maximum possible net benefit to society. CBA can translate diverse impacts into a common metric, often monetary, facilitating a comprehensive comparison and analysis to aid in making informed decisions. For instance, a proposal to reduce fertiliser use may lead to a certain cost to the agricultural sector but yield long-term societal and environmental benefits. On the other hand, IA evaluate the potential effects of policies or projects on various aspects such as the economy, society, and the environment. This includes specific tools and methods such as Environmental Impact Assessments which evaluate environmental implications. The European Commission (2021) utilises impact assessments to evaluate the potential effects and efficacy of new policy initiatives, ensuring they align with the objectives and values, achieving the desired change without unintended adverse consequences.

As outlined in the Better Regulation Toolbox (European Commission 2023), CBA and IA are distinct in their objectives and methodologies, yet complementary in providing a comprehensive evaluation of policy initiatives. CBA is primarily a quantitative tool that evaluates the economic efficiency of a project or policy, and which seeks to determine the net economic impact and assists in identifying the most economically efficient option among possible alternatives. IAs, on the other hand, are more encompassing, assessing not only economic, but also social, and environmental aspects of a project or policy. IAs use a range of qualitative and quantitative methods to understand the broad impacts of an initiative, and they aim to provide a holistic perspective on the potential effects on various stakeholders and sectors. While CBA quantitatively evaluates economic aspects and translates them into monetary terms, IAs provide a more multifaceted evaluation, considering diverse impacts and ensuring the alignment of the initiative with broader objectives, such as sustainability. In practice, policy makers can utilise CBA and IA in tandem to thoroughly analyse proposed interventions and to ensure decisions are not only economically justified but also aligned with broader societal and environmental goals.

Examples of tools

In Germany, the **Eco-Scheme Modelling** tool was developed by the Thünen Institute and is primarily implemented by Scientific and Research Institutes. The tool was established in response to the intricate requirements of designing the eco-schemes in Germany. It consists of three stages: a preliminary evaluation, an estimation of costs related to farming without chemical-synthetic plant protection, and a secondary budget assessment. These stages were essential for understanding the ecological and economic implications, cost projections associated with different farming practices, and further assessment of budget needs based on various eco-scheme designs. The outputs generated provided insight into potential scenarios, estimated budget needs, and diverse design considerations.

Ireland utilised an **Ex-ante policy analysis tool** created by Teagasc, with the results being made available to the agriculture ministry. Since Ireland had continued to operate a historical approach to the allocation of the Basic Payment under the previous CAP, further convergence in the level of payments was required under the new CAP. The impact of other new measures under the CAP also needed to be assessed. Internal modelling work by the agriculture ministry made it possible to see how payments would be reallocated between farms to determine which farms were "winners" and "losers" of support payments. However, farm level modelling work was then carried out by Teagasc to determine the likely impact on farm incomes arising from the reallocation of funding under Pillar I. This provided evidence for the ministry on the likely extent of income increases or decreases that would be incurred across different farm types. The tool emphasised both economic and scenario analyses to predict policy results, culminating in a comprehensive economic report. This report was highly valuable for policymakers, detailing anticipated policy impacts and suggesting potential interventions.

The Netherlands employed two distinct tools in its CSP development. The **I/O/I matrix**, authored by Wageningen Research, enabled the study of various policy options that the Netherlands might adopt to achieve the goals outlined in the CSP. It offered an intricate analysis of these policies, analysing their economic, ecological, and social implications and how they interrelate. On the other hand, the **Farm income FADN-based calculation tool**, owned by Wageningen Economic Research and implemented by the Netherlands Enterprise Agency, focused on the effects of various policy options on farm income. This tool played a significant role in providing insights into how different policy choices might influence farm earnings.

3.3.4. Experimental economics

Description of subcategory

Experimental approaches generate data in a controlled setting to analyse relationships between the intervention of interest and people's actual behaviour or stated intentions. In this regard, the experiments differ from other tools, because they rely on primary data collected through a carefully designed experimental protocol, instead of observed data from 'naturally occurring' economic situations. Although experimental economics is currently more common in other policy domains (e.g. education and development aid) and in third (particularly developing) countries, it has been increasingly used for agricultural policy evaluations in the EU as well (Thoyer & Preget, 2019).

Various typologies of experimental tools were developed in the experimental economics literature. However, the researchers from the Research network on Economic Experiment for the Common Agricultural Policy (REECAP) have recently proposed four types of experimental approaches for the purpose of CAP strategic planning, evaluations and monitoring (Lefebvre et al., 2021; Thoyer & Preget, 2019). In laboratory (lab) experiments, participants are asked to play an economic game, which aims to reveal their behavioural responses to different decontextualised scenarios. The game takes place in an economic lab (usually a computer room) and can be played either by students or real economic agents (stakeholders). To simulate real-world behaviour, participants receive a monetary incentive depending on the choices they make during the game. With the appropriate infrastructure, lab experiments provide a quick and flexible tool to test new policy approaches or incentives. However, if the intervention of interest needs to be tested with the relevant economic context, contextualised field experiments with stakeholders can be used to more closely simulate a naturally occurring decision-making environment. The third tool is the randomised controlled trial (RCT), which is used to evaluate interventions during the implementation of the policy in the real-world setting. To measure the causal effects of the intervention, participants are randomly assigned to either a treatment or control group.

In contrast to these approaches, which aim to reveal actual behaviour, discrete choice experiment (DCE) is a survey-based tool for eliciting stated preferences in a hypothetical setting (Mariel et al., 2021). The respondents are asked to conduct a choice task, where they are typically presented with a series of choice cards. On each card, they need to make a choice between two or more alternatives. DCE is particularly useful for assessing farmers' preferences towards novel policy measures, because it enables a monetary estimation of their willingness to accept alternative

policy design options. They have also been extensively used for assessing public preferences for policy interventions, particularly in terms of environmental or landscape improvements (Colen et al., 2016).

In addition to the experimental approaches described above, there are also a number of quasi-experimental tools, which can be employed for CAP evaluation. These tools, however, do not necessarily require primary data collection, as they use various statistical methods to "create" artificial counterfactual or control group data, which are then compared with the observation data. Examples include DID, statistical matching, instrumental variables and regression discontinuity methods (Castano et al., 2019). Although they are not true experiments, quasi-experimental tools can be particularly useful when it is not possible to design a more rigorous experimental protocol due to ethical, administrative or other issues (Thoyer & Preget, 2019).

Experimental approaches can expand and complement the existing CAP toolset for supporting evidence-based decision-making in at least three ways (Colen et al., 2016; Lefebvre et al., 2021). Firstly, the controlled setting and randomised assignment of participants enable a robust and verifiable assessment of the causality in both ex-ante and ex-post evaluations. Experiments can thus help decision-makers to understand if a particular policy intervention provides measurable net impacts and to justify the public spending. Secondly, experimental approaches can be used for pre-testing policy measures in order to anticipate farmers' reactions to policy changes or their compliance to new regulations. The gathered data can also reveal the potential heterogeneity of the responses and reasons for it. Finally, economic experiments have been extensively used for discerning the role that behavioural factors, such as perceived risks, resistance to change and social norms, play in particular decision contexts. By relaxing the neoclassical assumption that farmers behave as rational economic agents, decision-makers can fine-tune the policy design to properly address or even make use of these behavioural mechanisms and cognitive biases (Dessart et al., 2019). This is particularly relevant for the increasingly prominent and diverse set of instruments in the second pillar of the CAP, because the carefully designed decision context is essential for the effectiveness of voluntary measures, such as the incentives to adopt agri-environmental practices or risk management tools (Thoyer & Preget, 2019). In addition, behavioural parameters from such experiments can be used to fine-tune predictions in the simulation models as well (Colen et al., 2016).

Examples of tools

Despite the evident potential of experimental economics, as outlined in the previous text, during the data collection on tools no MSs reported using or planning to use experimental economics in either the design or implementation phases of their CSPs. The fact that no MSs reported using or planning to use experimental economics could point to a lack of awareness or expertise in these tools. However, as noted above, since experimental economics is common in other policy domains (e.g. education and development) this could suggest that MSs prefer using more established, non-experimental methods for CSP design and implementation. For example, since some experimental economic methods (e.g. lab experiments) often involve decontextualisation, MSs could be concerned that the lack of context could fail to accurately represent the real-world complexities involved in agricultural policymaking. Furthermore, concerns around external validity could also limit their use (e.g. findings from RCTs or quasi-experimental methods conducted in one context with a given set of treatment and control groups might not be generalisable to other contexts). Nevertheless, there appears to be a gap between the available tools and methodologies in experimental economics and their practical application.

3.4. Monitoring and data collection tools

Monitoring and data collection tools provide MS with the necessary information to measure progress in CSP implementation and in achieving the milestones and targets by reference to financial data and to output and result indicators. This includes the comprehensive, timely and reliable qualitative and quantitative information needed for the annual performance report to enable effective follow-up of policy progress towards objectives using output, result and impact indicators, as well as for the control of beneficiaries' compliance, traditionally conducted through IACS and paying agencies control systems. This is an evolving area where the application of technology is making it possible to achieve monitoring and evaluation outcomes which would be unaffordable using traditional monitoring approaches. New technologies give policy makes the capability to collect and process data more efficiently, giving policy makers deeper insights into the effectiveness of policy. Among the technologies available are remote sensing, GIS, internet of things, blockchain, machine learning and big data applications. The new possibilities offered by these technologies can supplement or replace more established means of monitoring.

As previously discussed, the implementation of the CAP 2023-2027 will be monitored through output and result indicators. Output Indicators measure the outputs generated through interventions supported by the CAP while Result Indicators establish the link between an intervention and its purpose and are used for target setting and to measure progress towards those targets (performance review)[10]. Many indicators concern the number (or share) of farms/beneficiaries, hectares/utilised agricultural area, or livestock unit. There are also several indicators that cover other types of data (e.g. investments, producer organisations, persons benefiting from training, number of advisors, beehives, rural population etc.). These data will mainly be collected through the Integrated Administration and Control System (IACS) and other sources such as farm registers (e.g. livestock registers, sanitary and pesticides registers, etc.). One consideration here is whether some of these data are of sufficient quality to draw meaningful inferences. A critical evaluation would suggest that at least some of these data are preferred because of their ease of collection rather than their suitability. Just as for policy choices supporting tools, it is important to note that the sub-categorisation of these tools is based on a combination of the functioning and purpose of the collected inventory of tools rather than formal literature definitions.

3.4.1. Compliance monitoring

Description of subcategory

CAP compliance monitoring tools, encompass a range of quantitative and qualitative instruments. These tools include specialised software and systems, as well as on-the-ground methods such as 'on the sport checks'[11] and field visits, that can be used to ensure that beneficiaries comply with the conditionality requirements and eligibility criteria set for specific CAP interventions. These tools play a crucial role in maintaining the integrity and efficacy of CAP interventions by helping to ensure that only eligible beneficiaries receive the support they are entitled to, and that they utilise this support in adherence with established regulations and guidelines.

These tools employ a variety of methods to monitor and verify the compliance of beneficiaries. For instance, they may use satellite imagery, geographic information systems (GIS), and mobile applications to collect, consolidate, and analyse data related to agricultural activities and land use. These technologies facilitate the efficient and accurate monitoring of agricultural practices, enabling authorities to detect possible anomalies, discrepancies, and non-compliance with CAP conditions and requirements, which then can be further investigated. By allowing the capturing of real-time, objective data such as geotagged photographs and satellite images, compliance monitoring tools enable a more transparent and reliable assessment and verification process, as well as representing a comprehensive approach which would be either prohibitively expensive if more traditional monitoring approaches were used

They help minimise the need for physical inspections, thereby saving time and resources, while still ensuring rigorous oversight of beneficiaries' activities. Physical inspections (random spot checks) can also be a source of resentment among compliant farmers, creating negative farmer sentiment with regard to the CAP and leading to tensions between farmer representative organisations and the agriculture ministry with regard to the process of compliance verification. By contrast, in some instances, these tools also allow for the active participation of the farmers and beneficiaries themselves in the monitoring process, further enhancing the reliability and inclusivity of compliance verification. Furthermore, these tools can also incorporate risk-assessment functionalities, which help in identifying and evaluating potential risks and issues related to non-compliance. This feature aids in the prioritisation of monitoring efforts (intelligent spot checking), ensuring that resources are focused on areas and activities with higher risks of non-compliance.

Examples of tools

In Portugal, the **iSIP tool** is a comprehensive tool developed by the Agriculture and Fisheries Financing Institute (IFAP). It functions by conducting systematic annual checks on agricultural plots, collecting data on various practices, and then consolidating this information in a centralised database. The system integrates satellite data, legal constraints, and geotagged photographs. By capturing satellite data, legal constraints, and geotagged photographs, which farmers can verify or challenge via the IFAP-Mobile App, Portugal ensures that monitoring is both rigorous and participatory. The **IFAP-Mobile tool** operates as a mobile application that enables farmers to interact with this database. Using smartphone and GPS technologies, this app allows users to document on-site conditions with photographs, creating a visual record for crop monitoring, investment validation, and aid control. The fact that

[10] https://agriculture.ec.europa.eu/system/files/2023-05/pmef-cover-note-indicators_en.pdf
[11] https://wikis.ec.europa.eu/display/GUIDANCEANDTOOLSFORCAP/On+the+spot+checks

farmers can engage with the data, either confirming or disputing the collected information, improves the reliability of the monitoring process.

Czechia utilises the **LPIS tool** through the Ministry of Agriculture and the State Agricultural Intervention Fund. Working closely with GIS, the LPIS ensures that map layer overlaps relating to supported land parcels are accurate. The system accurately maps, tracks, and verifies land parcels, producing detailed land reports and compliance documentation. Complementing the LPIS is the **Area Monitoring System** (AMS), which sources digital imagery from SENTINEL 1 and 2 satellites, providing an almost real-time snapshot of land segments and their agricultural activities. Likewise, Germany's **AMS** also serves as a unified and transparent platform for monitoring agricultural activities across the country. Initially conceived by the Conference of Agriculture Ministers and later operationalised by Bavarian State bodies, this system harnesses satellite data from the Copernicus program, aiming to transition away from traditional on-site inspections in favour of satellite-based monitoring.

The Netherlands also employs a sophisticated **Satellite AMS**. Owned by the Netherlands Enterprise Agency, this tool uses a combination of satellite technology, algorithm-based data interpretation, and ground verification. By collecting and translating satellite data daily into a graphical form using an algorithm, the system offers a real-time snapshot of crop conditions, while the traffic light system ensures early detection of anomalies. In cases of uncertainty, real-time geotagged photos, taken by farmers using a dedicated app, serve as an additional verification layer. Furthermore, the possibility of field visits enhances the tool's reliability. The ongoing evolution of this system, such as the development of a minimum maintenance field algorithm, ensures its continued relevance and efficacy in the changing agricultural landscape.

In France, the **3STR - Monitoring** tool operates by rapidly detecting inconsistencies between declared and observed covers on agricultural lands. It utilises SENTINEL satellite data to compare the observed plant cover on agricultural plots against the reported CAP declarations. Another tool, **Telepac Géophotos**, offers a platform for geolocating and submitting photographs of these plots, facilitating a more efficient monitoring process. In Italy, the **Classyfarm** tool is an innovative risk-assessment instrument developed by the Ministry of Health. This tool gathers a variety of data on farms and transforms it into a numerical risk index for farms. The underlying methodology for this risk evaluation is accessible to the public, ensuring transparency in the assessment process.

Latvia's **LAD IT System** is an end-to-end monitoring tool created by the Ministry of Agriculture. This award-winning system manages every phase of the monitoring process, from initial data collection to the final evaluation, ensuring precision and reliability. Its structured mechanism involves multiple steps from identifying requirements, data gathering, logical controls, and structured data management. The tool is adaptable, with over 80,000 external users for its electronic application system and an efficient data warehouse accessible to a variety of stakeholders.

In Malta, the **BiedjaCam** tool acts as an intermediary between the Agricultural and Rural Paying Agency and the country's farmers, promoting transparency through direct communication and verification. By using geotagged images, farmers are able to provide substantiated information about their agricultural activities. This initiative enhances the reliability of data while simultaneously reducing the need for on-site checks. Additionally, the **Satellite AMS** builds upon field observation, by utilising satellite imagery and aligning it with geotagged photographs. This system employs a traffic light classification, effectively categorising fields based on their compliance, ensuring any discrepancies in alignment with expected crops can be swiftly identified and addressed. To further bolster accuracy in the monitoring process, Malta also emphasises the regular upkeep of the **Land Parcel Identification System** (LPIS). Through annual reviews, this system ensures that agricultural parcels remain current, with farmers actively participating by confirming or proposing data modifications.

While not explicitly mentioned during the data collection, the EC-supported **Farm Sustainability Tool** (FaST), which is a free and open-source mobile and web-based platform, can also play a significant role in compliance monitoring by simplifying access to satellite and other data. Specifically, the tool aim to reduce digitalisation costs for individual MSs and to provide data for improved environmental benchmarking and performance monitoring at all levels of governance[12].

3.4.2. Performance monitoring

[12] https://fastplatform.eu/about

Description of subcategory

Performance monitoring tools are integral for realising result indicators by providing an indication as to whether MSs are progressing towards or on track to reach their objectives. These tools are used In line with the Commission's prescribed methodologies around the use of specific data to calculate the result indicators[13]. These tools are developed to enable the regular gathering, analysis, and reporting of this data, and can involve gathering or synthesising multiple datasets to allow the calculation of result indicators across different spatial and temporal scales, ensuring alignment with CAP objectives. The data collected can serve for performance review, based on an indicator framework, which can be used in conjunction with key performance indicators.

Performance monitoring tools employ a broad mixture of quantitative and qualitative data gathering and analysis techniques that often overlap with other subcategories of tools, but which allow for a multi-faceted, in-depth understanding of performance. For example, information systems can serve as centralised platforms for electronic communication, data verification, and project administration, thus helping to ensure a more comprehensive and cohesive approach to monitoring. Specialised software platforms (e.g. for tracking crop water requirements and evaluating irrigation systems) can provide the data needed to measure efficiency. Furthermore, the utilisation of satellite imagery, aerial photos, and color-coded systems, facilitate efficient and accurate assessment and categorisation of agricultural activities and applications.

Performance monitoring tools not only focus on the evaluation of ongoing or completed projects, but also aid in identifying potential gaps, issues, and areas for improvement, thereby playing a crucial role in the continuous enhancement of agricultural policies and practices. For ease of interpretation the data can be presented in a dashboard environment. With the widening of the CAP's objectives the range of metrics required has increased. In addition, the heightened focus of the CAP and wider EU policy (e.g. Green Deal Farm to Fork) on environmental considerations mean that indicators relating to the environmental performance of agriculture now have a greater relevance.

Examples of tools

The Czech Republic plans to utilise multiple tools to meet their CSP monitoring needs. Recognising the gaps that traditional methods may leave in assessing performance, **online surveys** are planned to be implemented by the State Agricultural Intervention Fund to collect structured data from a broad spectrum of sources that can be used to monitor output or result indicators. Another tool for both compliance and performance monitoring is the **IS SZIF Information System**, which serves as a central hub for the administration and monitoring of CSP projects, connecting with various public registers. It enables seamless electronic communication with project applicants and beneficiaries and facilitates the verification and control of diverse data provided during various project phases. The integrated nature of the system ensures a thorough control and monitoring environment, resulting in verification reports, monitoring summaries, and other essential outputs.

Portugal's **Irrigation Calendar**, developed by the Operational Center of Irrigation Technology, aims to track crop water requirements and to evaluates the efficiency of irrigation systems and potential legal constraints. The resultant data is made available online, offering stakeholders easy access to vital insights. Greece plans to utilise **IACS** to streamline farmer applications. The 'Traffic Lights System' will categorise these applications using a colour-coding method informed by factors such as previous applications, satellite imagery, and aerial photos. "Green" will signify an issue-free application, "red" a rejection, and "yellow" applications that require further verification, such as a field visit or geotagged photos. Beyond its primary function, the system's integration with tools like Sen4cap and Agrisnap enhances its capability and reliability, providing a comprehensive overview of agricultural activities.

Italy plans to employ a diverse range of tools to ensure effective performance monitoring. The **New Monitoring System AGEA** will serve as a rich data repository that enhances the accuracy and effectiveness of data needed to satisfy regulations by providing comprehensive reports detailing beneficiaries of funds from the EAGF and the EAFRD at the national level. **Regional Management Systems** are another significant tool which focus on collecting application data related to aid and payments, centralising and categorising it for effective management of European Agricultural funding at the regional level. Outputs from this system include comprehensive datasets detailing beneficiaries of the EAGF and the EAFRD at the regional level, which can be used for analysis, allocation, and monitoring. Italy also plans to also rely on **official statistics** for monitoring, since they provide a snapshot of the prevailing economic conditions of farms in line with the CAP regulation. This data will be analysed to present a

[13] https://agriculture.ec.europa.eu/system/files/2023-09/pmef-result-indicators_en.pdf

comprehensive picture of the compliance levels of the farms under observation. These more granular details enable policymakers to tailor interventions, ensuring they address specific priority areas effectively.

Malta plans to utilise a **Project Closure Database** to digitise transition the vast amounts of data from project closure reports into a digital format, providing an efficient system to collect data for relevant indicators. Digitising this information is aimed at enhancing accessibility, efficiency, and reliability. Still under development, the tool is envisioned as an IT-based system. One significant feature will be its ability to make linkages with RD investment data, enabling an integration of beneficiary-level information with broader investment metrics, allowing individual projects to be viewed within the broader scope of CAP objectives. Malta also plans to update its **RD Investment Data tool,** previously used during the RDP 2014-2020 period, to monitor CSP interventions, particularly investment-based interventions overseen by the Managing Authority. In terms of its functioning, the tool is broad, incorporating various modules, ensuring a comprehensive overview of CSP interventions. The IT system will include elements of both EAGF and EAFRD as well as new requirements not previously included in the APR (AIR 2014-2020). It will link numerous schemes and interventions and will monitor expenditure, outputs and results throughout the programming period. It provides uses with a detailed database in excel that includes selected variables for all project applications.

Austria plans to use **statistical and environmental data analysis** to provide insights into the environment and statistics related to agriculture. Its functioning ensures precision, accuracy, and relevance, making it a trusted method for performance evaluation and checking compliance. Austria also plans to use **in-depth interviews**, on the basis that understanding qualitative insights, often overlooked, are as crucial as quantitative data. Recognising the limitations of purely data-driven approaches, in-depth interviews can offer higher levels of reliability. Detailed interviews also allow stakeholders to both validate and delve deeper into agro-statistical data.

Lastly, the Netherlands plans to employ a **Configuration Tool**, managed by the Netherlands Enterprise Agency (RvO), serves as an internal dashboard to track various indicators, ensuring that performance metrics are met. The tool's functioning centres around internal tracking, which aids RvO in quantitative analysis, while the Ministry complements this with qualitative insights, especially when deviations from targets are noted. This tool's data are utilised annually, providing both quantitative and qualitative reports on CAP progress in the Netherlands.

3.4.3. Data and knowledge stocktaking

Description of subcategory

Monitoring and data collection tools for data and knowledge stocktaking facilitate the collection, storage and management of data and information necessary for policy monitoring and evaluation, informing policy choices. These tools can generate data to construct various indicators, such as impact, context, and result indicators, which provide a more nuanced and comprehensive perspective on policy effects, playing a pivotal role in assessing and further informing policy strategies. They also play a key role in providing both the qualitative and quantitative data needed to compile annual performance reports and to ensure farmers' compliance checks. These monitoring and data collection tools also complement other policy analysis and policy choice supporting tools, providing essential data and insights. The Farm Accountancy Data Network (FSDN) and its imminent successor the Farm Sustainability Data Network (FSDN) represent a common tool that exists at the EU level. However, beyond that there are specific MS level initiatives, but these lack the international comparability that can be achieved through FADN/FSDN). IACS is a further common system across the EU that can be a source for data.

Examples of tools

France implements a range of data and knowledge stocktaking tools tailored to different administrative and monitoring needs. The **DATAPLAN** tool, for instance, functions as a collaborative portal between regional and national authorities. This tool simplifies the creation of the framework of reference for the French CSP. By facilitating data collection, sharing, and subsequent calculations of national target values of indicators, DATAPLAN ensures a harmonised approach to the CSP's implementation across regional boundaries. Its primary output is the CSP framework of reference proposal for the European Commission. Complementing DATAPLAN, the **Support Management** tool at regional level streamlines the management of EAFRD support at the regional level. With the decentralisation of certain EAFRD support functions to regional authorities, this tool will be instrumental in examining and verifying aid applications. It provides useful data such as dashboards for programming guidance and data extractions, crucial for the annual performance report. Lastly, the **SYNAPSE** system is another French tool, which emphasises interoperability between various management systems, minimising redundancy in data requests, and establishing a unique identifier number. Data sent by each paying agency undergoes checks for completeness,

authorisation, and correctness before processing. It serves as a consolidated IT architecture that supports auditing, validation, and performance review needs. It will result in annual performance reports for CAP 2023-2027, from financial year 2023 to 2030.

In the Czech Republic, the **Farm Accountancy Data Network** (FADN), managed by the Institute of Agricultural Economics and Information, is a standardised database that collects and analyses key economic metrics of the country's agricultural holdings. This tool primarily serves to monitor the outcomes related to the support granted from the CSP, particularly around direct payments. Through the FADN, stakeholders can access crucial economic data, statistical reports, and analytical insights, ensuring transparency and effectiveness in support allocation. The FADN system in Ireland plays a similar role. Similarly, Italy plans to rely on **Integrated Administration and Control System** (IACS) to oversee payments. Managed by the Italian Ministry of Agriculture, IACS consolidates multiple data sources to allow informed decisions concerning payments. By connecting a range of components and performing rigorous checks, this tool guarantees accurate and consistent payments. Its functionalities extend from supporting compensation mechanisms to identifying potential anomalies, showcasing its multifaceted role in Italy's CSP planning and monitoring.

4. Online inventory features

4.1. Overview of Tools Webpage

The proposed webpage will serve as an intuitive and user-friendly platform for showcasing a comprehensive inventory of tools. The design principles behind the webpage ensure ease of use, clarity, and accessibility, ensuring that stakeholders can efficiently identify and understand the tools they are interested in.

4.1.1. Layout

The inventory of tools website is open-access and dedicated to showcasing the tools used by EU MSs in the design and implementation of their CSPs. It is structured to optimise the user experience by providing various options for filtering, searching, and sorting the displayed tools, allowing users to access specific information efficiently and effectively. At its core, the main overview of tools webpage displays a subset of important tool information for all tools and allows users to navigate to a separate individual tool webpage containing further information on each tool.

Figure 4. Overview of tools webpage layout

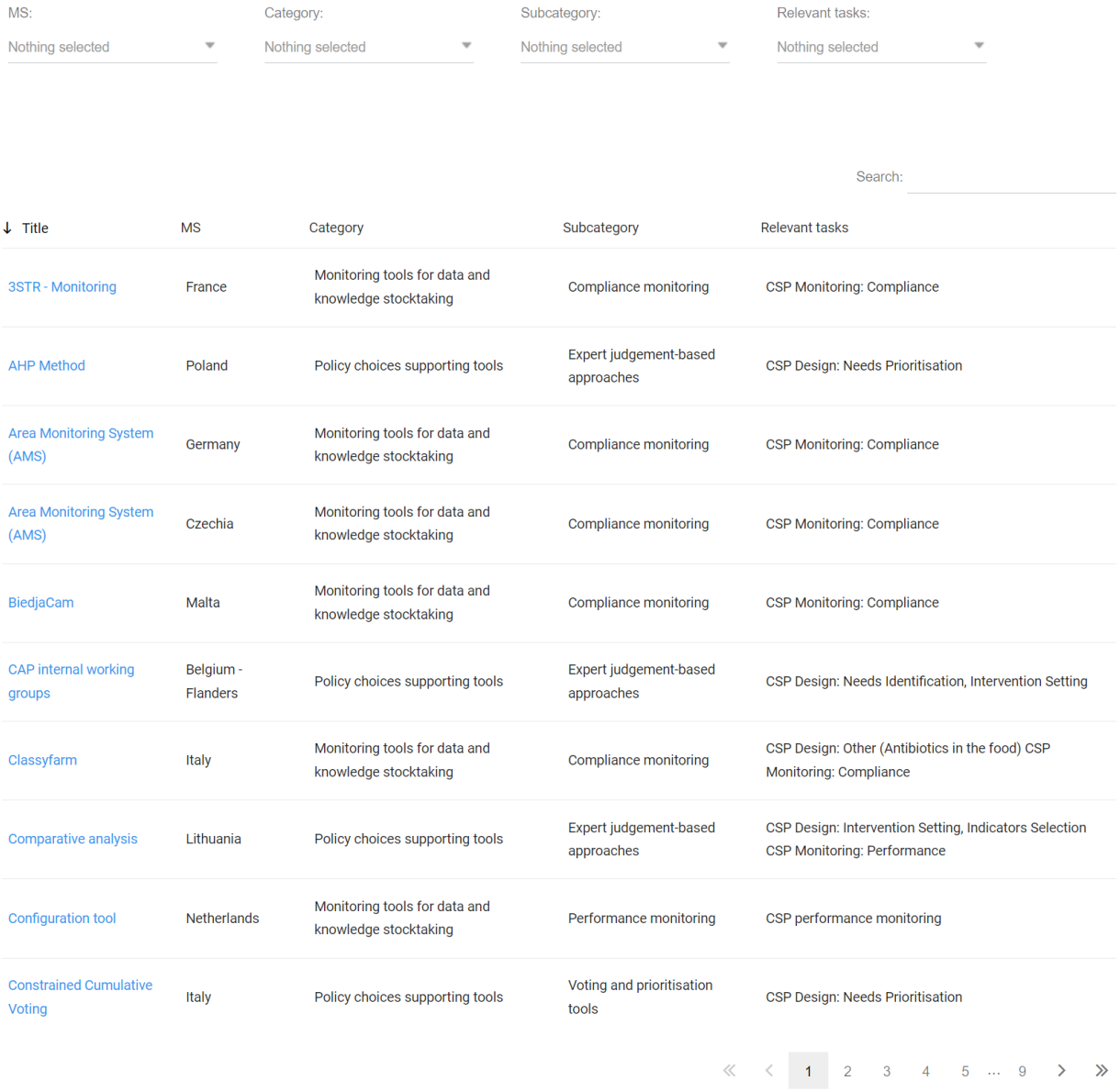
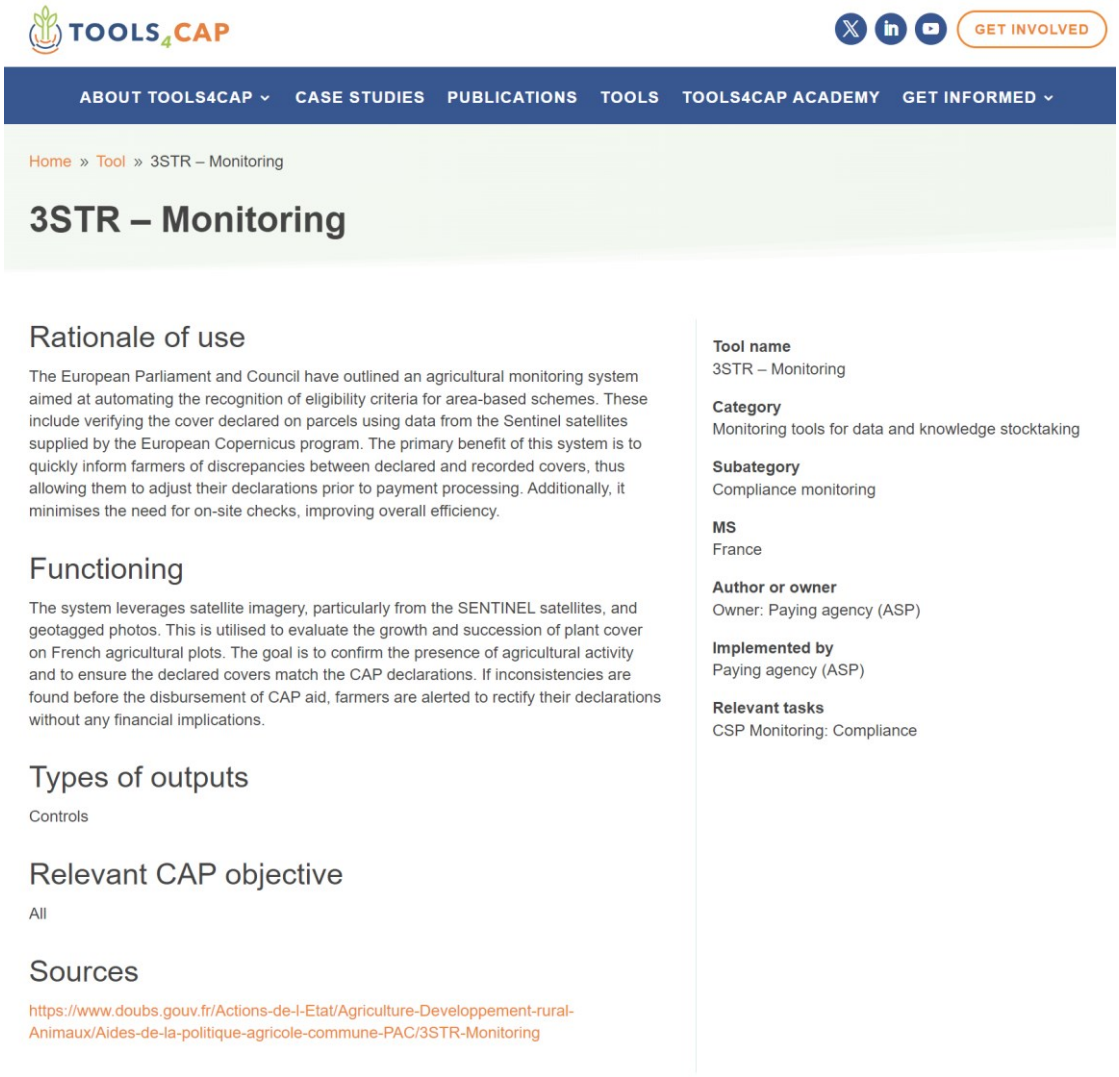


Figure 5. Individual tool webpage example



4.1.2. User Interaction

As outlined above, in order to improve user interaction, the overview of tools webpage allows users to filter, search for and sort the displayed tools allowing users to access specific information the information most relevant to their specific needs or areas of interest. Specifically, the webpage contains the following options.

Filtering Options: Users can refine the display to view tools that match their requirements or areas of interest by:

- Member State: EU 27 Member States (with an additional 'non-EU' category to be added for third countries after the update)
- Category: Four distinct categories of tools are available for users to select from:
    - Stakeholder needs assessment tools
    - Policy choices supporting tools
    - Monitoring and data collection tools for data and knowledge stocktaking
    - Policy analysis tools for ex-ante evidence-based decisions
- Subcategory: Each primary tools category further branches out into subcategories which allow the user to better refine their search based on the tools purpose and functionality.

- Relevant Tasks: Two primary objectives have been identified so far – 'CSP Design' and 'CSP Monitoring.' Specific design and monitoring objectives associated with these broad classifications are under discussion and will be incorporated once clarified.

Search Functionality: Users can utilise the search bar at the top right of the page to instantly search for tools by name, keyword, or other relevant terms, ensuring a more rapid tool-locating experience.

Sorting Mechanism: Users can organise the displayed results based on column values (i.e. Title, MS, Category, Subcategory, Relevant tasks).

Overall, the online inventory of tools aims to be intuitive and user-friendly, and to serve as a valuable platform for end users, ensuring they have seamless access to essential tool information, thereby aiding them in the effective design and implementation of their CSPs.

5. Conclusions

The Tools4CAP project aims to support MSs in designing and monitoring CSPs, particularly in light of the challenges presented by the new CAP. The project will inventory and map various methods and tools currently in use or planned for use by MSs, including untapped scientific tools and tools from third countries that could be beneficial. It will evaluate and benchmark these tools, adapting them for broader application across MSs.

This specific aim of this deliverable is to provide a comprehensive, open-access inventory of existing methods and tools used by EU Member States in the design and implementation of their CSPs. This inventory, accessible via an online repository on the project website, is intended to be a digital, constantly updated resource, enduring beyond the project's lifespan. It will encompass new tools and methodologies from both within and outside the EU, along with approaches from previous programming periods, ensuring a comprehensive inventory. As discussed, the project team will maintain ongoing monitoring for emerging methods and tools introduced by Member States through comprehensive desk research as well as interactions organised within Work Package 6 (WP6), encompassing focus groups and workshops. The inventory will undergo scheduled updates in January 2025 and January 2026.

Stakeholder needs assessment tools utilise qualitative methodologies to identify and assess stakeholders' perspectives and needs, informing policy analyses and choices. Examples include online consultations, surveys, workshops, conferences, focus groups, and meetings. Policy choices supporting tools are based on logic-based methodologies to facilitate decision-making, especially in complex systems with multiple policy options and sources of information. Examples include voting and prioritisation tools, end user feedback mechanisms, and expert judgment-based approaches. Policy analysis tools for evidence-based decisions generate scientific or empirical evidence through policy analysis to inform decision-making and support evidence-based policymaking. They include statistical methods, simulation models, cost-benefit analysis, impact assessments, and experimental economics. Lastly, monitoring and data collection tools collect and make available the necessary information to measure progress in CSP implementation and in achieving the milestones and targets by reference to financial data and output and result indicators. Examples include compliance monitoring tools, performance monitoring tools, and data and knowledge stocktaking tools.

Despite the clear categorisation used, it is important to note the practical overlap and complementarity among these tools in real-world applications. Tools can have multiple uses across the design and monitoring processes of the CSPs and can be complementary to one another, contributing collectively to decisions during both the design and implementation process. For example, monitoring tools, while key for the monitoring process, also play an essential role in the design phase, providing necessary data and contextual information. Similarly, stakeholder needs assessment tools can complement policy analysis tools by providing informed knowledge, expert judgment, or scenario building, and can inform policy choice tools through stakeholder opinions. The broad range of tools collected underlines the importance of considering a diverse and combined use of different tools in both the design and implementation of CSPs.

Lastly, the report provides a concise description of the content and functionality of the online inventory of tools. The online inventory aims to be easy to navigate and to allow efficient access to specific tool information. The overview webpage is structured with multiple filtering, searching, and sorting options, allowing users to refine their view based on various relevant characteristics, ensuring a more tailored experience for users that aligns with their individual needs or areas of interest. Overall, the online inventory aims to be intuitive and user-friendly, and to serve as a valuable platform for end users.

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Inventory of Tools

Table 1. Stakeholder Needs Assessment Tools

Tool name	Stakeholder needs assessment tools			MS	Author or owner	Objective and relevant tasks
	Focus groups and meetings	Online consultations and surveys	Workshops and conferences			
In-depth Interviews	x			BG	Institute of Agricultural Economics	CSP Design: SWOT Analysis
Rationale	In-depth interviews are leveraged as they stand as one of the most viable means for acquiring data, offering a high degree of reliability. The tool provides essential insights into agro-statistical data and performance, contributing to a comprehensive SWOT analysis and monitoring of the CSP.					
Functioning	This tool is employed to conduct a detailed and reliable verification of agro-statistical data. It facilitates a real-time analysis of the prevailing circumstances in the agricultural sector.					
Types of outputs	The outputs generated include vital information pertaining to performance and compliance, which aids in strategic decision-making and policy formulation.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Focus Groups (Internal)	x			CY	Cyprus Ministry of Agriculture, Environment and Rural Development	CSP Design: Needs Identification CSP Monitoring: Performance
Rationale	Internal focus groups are utilised to identify needs accurately, leveraging their expertise in the SWOT analysis and structured decision-making. They are beneficial in driving consensus decisions on key policy issues related to CSP design.					
Functioning	These focus groups strive to reach consensus decisions on crucial policy matters pertaining to the CSP design, particularly in terms of interventions.					
Types of outputs	The information garnered from these focus groups aids in the preparation of intervention logic and budgetary allocations, thus directing the resource allocation and strategic planning for CSP.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Discussion Conference			x	CY	Cyprus Ministry of Agriculture, Environment and Rural Development	CSP Design: Intervention Setting
Rationale	The discussion conference approach fosters open dialogue, promoting cross-sectoral and cross-disciplinary information exchange. This open discourse supports intervention setting during CSP Design.					
Functioning	This tool involves large-scale consultations with stakeholders during the completion of the SWOT analysis and the development of a provisional intervention logic.					
Types of outputs	The outputs from these discussions include refined SWOT analyses, stakeholder feedback, and refined intervention strategies based on stakeholder input.					
Relevant CAP objective	All					
Relevant CAP intervention	All					

Focus Groups (External)	X			CY	Cyprus Ministry of Agriculture, Environment and Rural Development (?)	CSP Design: Intervention Setting CSP Monitoring: Performance
Rationale	External focus groups are used to review the SWOT analysis in a scientific context, considering EU directives, national policies, and the green deal paper. These discussions validate intervention designs, particularly on agri-environmental measures.					
Functioning	These discussion groups scrutinise the intervention designs under a scientific lens, with a focus on agri-environmental measures.					
Types of outputs	The outputs include detailed discussion notes that provide a basis for supporting interventions and setting targets in agri-environmental measures.					
Relevant CAP objective	SO4/ SO5/ SO6					
Relevant CAP intervention	Agro-Environenmental and climate measures (Art. 70)					
E-savjetovanje (e-consultations)		x		HR	Author: Government of the RoC	CSP Design: Draft SP
Rationale	This tool is used to enable wider public consultations in the process of adopting laws, other regulations and acts. The main goal is to increase the participation of citizens and stakeholders in the law and policy-making process, in line with the EU better regulation agenda.					
Functioning	Documents that are under consultations are published on specific web site, available for commenting. After the deadline (30 days), ministries and agencies are obliged to publish a report with all comments and justifications (e.g. accepted or not, and why). The deadline can only be shorter when some Act is proposed/adopted as part of an urgent procedure. Additionally, potential stakeholders have the option to subscribe to certain topics (e.g. agriculture) and in that case all notifications related to newly opened consultations with the link will come to their mail.					
Types of outputs	The consultation tool generates important feedback from the public and various stakeholders, playing a role in fostering a comprehensive and democratic policy-making procedure.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Online Survey		x		HR	Author: Ministry of Agriculture	CSP Design: Financial instruments
Rationale	An online survey tool is utilised to obtain a comprehensive overview of stakeholders' interests, needs, and investment priorities. It is also employed to gather information on the experience and satisfaction of stakeholders with the implementation of financial instruments under the RDP.					
Functioning	This tool enables potential users to gain insights into the benefits of specific financing models. In November 2021, news on the RDP, Paying Agency, National Rural Network website was published and access given to the survey. The website also offered the possibility for all interested parties to access information on the basic characteristics of the financial instruments currently being implemented as well as certain results of the implementation so far.					
Types of outputs	The process provides valuable input from current and potential future final recipients, thereby informing decisions related to financial instruments.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Public consultation tool otakantaa.fi		x		FI	Owner: Ministry of Justice, Finland	CSP Design: Stakeholder Consultations
Rationale	As the official online tool and website for organising public consultations in Finland, it provides a reliable platform for receiving feedback from a diverse array of stakeholders on different issues.					
Functioning	The CAP SP draft was divided into parts and full texts were provided in PDF format. Stakeholders could comment on different sections. The comments are visible to the public, encouraging open discussion and transparency.					
Types of outputs	The comments are collected in writing and can be exported in Excel or PDF formats to the ministries for further consideration and action.					
Relevant CAP objective	All					

Relevant CAP intervention	All					
World Café			x	FI	Author: Ministry of Agriculture and Forestry	CSP Design: Stakeholder Consultations
Rationale	This tool was used to identify strengths, weaknesses, and development needs related to different topics in a participatory and engaging way. It facilitates active involvement and brainstorming among stakeholders.					
Functioning	The workshops started with short presentations related to the topic. This was followed by group discussions and idea collection on whiteboard papers, where feedback ranged from positive aspects to challenges in the current system, resulting in a list of development needs. A total of 32 thematic workshops were held during 2019-2020.					
Types of outputs	The outputs from the workshop are summarised and documented in word documents for further review and utilisation.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Impactons ! Public debate	x			FR	Author: Comission Nationale du Débat Public (CNDP) (national commision of public debate)	CSP Design: Needs Identification, Socio-economic Context Analysis
Rationale	It provided a structured and inclusive platform for public debate on critical issues. The goal was to gather diverse opinions, including prioritisation of objectives, opinion on different themes, and political positioning.					
Functioning	The tool encompasses different aspects including a 3-day debate organised by the National Commission of Public Debate (CNDP) with a drawn panel of citisens, an online platform for prioritising objectives and providing opinions, territorial public debates, and kits for organising home-made debates.					
Types of outputs	The public debates resulted in a comprehensive report that collated all the discussions, insights, and suggestions made during the event.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
World Café			x	DE	Owner: Federal Ministry of Food and Agriculture (BMEL)	CSP Design: Stakeholder Consultations to inform SWOT analysis
Rationale	Is seen as a good practice in stakeholder consultations to cross-pollinate ideas and build upon each other's contributions, where diverse perspectives and creative solutions are needed					
Functioning	The world café method was used to to structure the discussions around different issues with the involved stakeholders in the consultation process. The world café method is a structured conversational process for knowledge sharing in which groups of people discuss a topic at several small tables (like in a café).					
Types of outputs	Written documentation from the meetings					
Relevant CAP objective	All					
Relevant CAP intervention	Eco-schemes (art.31)					
Workshops and round-table discussions (in-person and online)			x	HU	Author: Ministry of Agriculture, Chamber of Agriculture, Institute of Agricultural Economics.	CSP Design: Stakeholder consultations in connection with the SWOT Analyses and the Need Assessment, and later with the designing of interventions.
Rationale	These tools allow for structured dialogue and the efficient exchange of knowledge, information, and views between stakeholders, thus contributing to the process of consensus-building when necessary.					
Functioning	Thematic workshops and round-table discussions focus on specific topics during the planning process, inviting experts in these fields to participate. These structured dialogues pave the way for a productive exchange of insights and opinions.					
Types of outputs	Written documents are prepared by representatives of the Ministry of Agriculture, capturing the key points of the discussions.					

Relevant CAP objective	All					
Relevant CAP intervention	All					
Online consultation on the Strategic Plan		x		HU	Author:Institute of Agricultural Economics Owner: Ministry of Agriculture, Institute of Agricultural Economics	CSP Design: Stakeholder Consultations
Rationale	This tool was chosen for its ability to reach a large audience quickly through the media, ensuring wide dissemination of the Strategic Plan and encouraging public participation.					
Functioning	The principles of the Strategic Plan and its design process are presented to the public via media, alongside an online questionnaire. The online interface was operated by the Institute of Agricultural Economics, which also carried out the analysis of the responses.					
Types of outputs	A data analysis report on the public acceptance of the Strategic Plan is prepared for the Ministry of Agriculture, offering valuable insights for the finalisation of the plan.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Town Hall Meetings	x			IE	Author: DAFM (Ministry of Agriculture)	CSP Design: Stakeholder Consultations CSP Monitoring: Compliance, Performance, Clearance
Rationale	Town Hall Meetings have been implemented in Ireland to foster an inclusive and participatory environment, allowing for a broad spectrum of views from various regions and stakeholders. This approach seeks to engage the public, industry representatives, and policymakers in open dialogue and collaboration on agricultural policies.					
Functioning	These meetings are held across the country and provide an accessible platform for stakeholders to express their thoughts, concerns, and suggestions on the CAP reforms. More details on the meetings can be found on the official Ministry website.					
Types of outputs	The outcomes of these meetings are compiled into detailed written reports, available on the Ministry website. The reports summarise the discussions, ideas, and consensus reached, serving as reference materials for policy formulation and decision-making.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Open Public consultations	x			IE	Author: DAFM (Ministry of Agriculture)	CSP Design: Stakeholder Consultations CSP Monitoring: Compliance, Performance, Clearance
Rationale	Open Public Consultations have been employed in Ireland to gather diverse insights and opinions across regions and stakeholders, ensuring that a wide array of perspectives is considered in policy-making.					
Functioning	These consultations involve various methods such as written submissions, surveys, focus groups, and workshops to collect feedback from stakeholders regarding CSP design, monitoring, compliance, performance, and clearance.					
Types of outputs	The outcomes are documented in written reports, which include comprehensive summaries of the submissions, survey results, focus group findings, and workshop conclusions. These reports are made publicly available on the Ministry website.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Network of seminars			x	LV	Author: Ministry of Agriculture, Latvia	CSP Monitoring: Clearance

Rationale	In Latvia, a network of seminars was organised to enhance understanding and prepare stakeholders for changes in the new programming period, fostering cooperation between authorities, institutions, and farmers.					
Functioning	Over 24 seminars were conducted over three months, with various stakeholders participating in multiple seminars. The continuous engagement helped to break down the complexity of CAP language and strengthen collaboration.					
Types of outputs	The main output of this tool was the seminars themselves, which served as platforms for discussion, education, and relationship-building among stakeholders.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Focus Group	x			LT	Author: Lithuanian Centre for Social Sciences, Institute of Economics and Rural Development	CSP Design: Needs Identification, Needs Prioritisation, Stakeholder Consultation
Rationale	Lithuania utilised the Focus Group method to apply a participatory approach involving diverse stakeholders from different sectors such as science, policy, business, and NGOs. It was essential for needs identification and prioritisation in CSP design.					
Functioning	The tool played a key role in conducting SWOT analysis, allowing for a comprehensive understanding of the different factors affecting policy.					
Types of outputs	The outputs consisted of detailed SWOT analysis reports, summarising the insights and prioritised needs identified through stakeholder engagement.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Workshops			x	LU	Author: Ministère de l'Agriculture, de la Viticulture et du Développement rural	CSP Design: SWOT Analysis
Rationale	Luxembourg utilised workshops as a simple and effective way to gather views and input from the agricultural sector during the early stages of the CSP design process.					
Functioning	A series of workshops were organised to gather insights, preparing the SWOT analysis and identifying some needs for the CSP design.					
Types of outputs	The outcomes of these workshops were compiled into written minutes, summarising the discussions, findings, and suggestions.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Participatory Consultatative Tool (Themeatic Consultative Commmette)		x		RO	Author: Ministry of Agriculture and Rural Development (MARD)	CSP Design: Socio economic analysis, Needs prioritisation, SWOT analysis
Rationale	Romania's Ministry of Agriculture and Rural Development (MARD) implemented this tool to gather diverse perspectives in agriculture and rural development, assessing the prioritisation of identified needs in the NSP drafting process					
Functioning	This participatory process involved feedback through surveys, questionnaires, and online thematic discussions, establishing correspondence between needs and SWOT components					
Types of outputs	The outcomes of this participatory process led to a shared agreement on the importance levels of each identified need and the required interventions. It also facilitated grouping similar needs by prioritising interventions. The entire consultative approach resulted in a well-founded logic of intervention, in line with the European Commission's legislative proposals.					
Relevant CAP objective	All					

Relevant CAP intervention	The tool composed of 4 Working Groups was used to design specific CAP interventions on the followings: WG 1. Agriculture and Food industry with 5 thematic working groups TWG.1.1: direct payments, TWG 1.2 Coupled support, TWG 1.3 Intervention measures supported from II Pillar, TWG 1.4 Industry and Food Security, TWG 1.5 Market Measures. WG 2. Environment and Forestry (WG 2.1 Eco-schemes and Environmental Payments, TWG 2.2 Rural Development Arrangements, TWG 2.3 Forestry). WG 3. Rural Economy and Infrastructure (TWG 3.1 LEADER and non-agricultural activities and TWG 3.2 Rural infrastructure). WG 4. Research and Innovation (TWG 4.1 AKIS and TWG 4.2 Interventions in RDI and innovation transfer).					
Workshops, Conferences, Working Groups			x	RO	Author: Ministry of Agriculture and Rural Development (MARD)	CSP Design: Socio economic analysis, Needs prioritisation, SWOT analysis
Rationale	This tool was developed by the Romanian Ministry of Agriculture and Rural Development (MARD) to support decision-making in the NSP drafting process, engaging a wide array of stakeholders to ensure all interests and perspectives were considered					
Functioning	This approach involved extensive feedback, comments, and recommendations from socio-economic partners in TWG, employing surveys, questionnaires, and online thematic discussions. It sought to align the identified needs with SWOT components, complying with CAP specific objectives.					
Types of outputs	The participatory process enabled the formulation of shared agreements on need importance and interventions and identified similar groups of needs, resulting in well-founded intervention logic. Outputs included detailed documents and analyses reflecting collective insights and decisions.					
Relevant CAP objective	All					
Relevant CAP intervention	The tool composed of 4 Working Groups was used to design specific CAP interventions on the followings: WG 1. Agriculture and Food industry with 5 thematic working groups TWG.1.1: direct payments, TWG 1.2 Coupled support, TWG 1.3 Intervention measures supported from II Pillar, TWG 1.4 Industry and Food Security, TWG 1.5 Market Measures. WG 2. Environment and Forestry (WG 2.1 Eco-schemes and Environmental Payments, TWG 2.2 Rural Development Arrangements, TWG 2.3 Forestry). WG 3. Rural Economy and Infrastructure (TWG 3.1 LEADER and non-agricultural activities and TWG 3.2 Rural infrastructure). WG 4. Research and Innovation (TWG 4.1 AKIS and TWG 4.2 Interventions in RDI and innovation transfer).					
Questionnaires for collecting feadback from Technical Working Group (TWG) members		x		RO	Author: Ministry of Agriculture and Rural Development (MARD)	CSP Design: Intervention setting & Budget allocation
Rationale	MARD chose this online questionnaire tool for its ease of application and the ability to quickly analyse results. The computerised database with answers allowed for efficient iteration.					
Functioning	After TWG meetings, participants were provided with an online questionnaire asking them to choose between different options for the National Strategic Plan interventions and to express their views on interventions and budget allocation					
Types of outputs	Outputs include individually crafted questionnaires for each TWG and a database containing the responses, enabling a detailed understanding of stakeholder preferences and views					
Relevant CAP objective	All					
Relevant CAP intervention	Questionnaire produced for each TWG					
Working Group	x			SK	Author: Ministry of Agriculture and Rural Developement of the SR	CSP Design: All
Rationale	In Slovakia, the Ministry of Agriculture and Rural Development of the SR implemented a Working Group to create a unified National Strategic Plan for the country through a more formal approach.					
Functioning	This working group consisted of various members from ministries, universities, and civil society organisations, working together to finalise and approve the National Strategic Plan through individual sub-groups.					
Types of outputs	The outputs resulted in the formulation of the National Strategic Plan, reflecting the coordinated efforts and agreement among the different stakeholders.					
Relevant CAP objective	All					

Relevant CAP intervention	All					
Sub-working groups for Interventions	x			SK	Author: Ministry of Agriculture and Rural Developement of the SR	CSP Design: Intervention Setting
Rationale	In Slovakia, 21 sub-working groups were convened by the Ministry of Agriculture and Rural Development of the SR to finalise intervention wording, drawing from a larger Working Group.					
Functioning	The sub-groups were convened by the various responsible departments of the Ministry according to the need to finalise the wording of interventions. Members of the large Working group were asked to nominate their representatives in this sub groups. These representatives participated in on-line meetings where the interventions were introduce with the opportunity to provide first feedback and than to send the comments in writing. The next meeting addressed the comments untill the agreable text was found.					
Types of outputs	The outputs include the finalised formulations of interventions, crafted through iterative collaboration and consensus among various representatives.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Focus Working Groups (one for each SO)	x			ES	Author: National Ministry of agriculture (General Sub-Directorate for Agricultural Policies Planning).	CSP Design: Socio-economic analysis, SWOT analysis, Needs identification
Rationale	The Spanish National Ministry of Agriculture utilised Focus Working Groups to involve diverse specialists from different areas, who may not be directly related to agricultural policy, in the analysis of the agricultural sector.					
Functioning	Consultation to databases and analysis with spreadsheets was undertaken, allowing these diverse specialists to understand and interpret the state of the agricultural sector from the perspective of each CAP SO.					
Types of outputs	Comprehensive reports that describe the agricultural sector from each SO's viewpoint, serving as foundational documents for subsequent SWOT analysis and needs identification.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Partnership Meetings and Public Consultation	x			ES	Author: General Secretariat of Agriculture and Food (national Ministry of Agriculture) and the National Rural Network (S.G. of Rural Dynamization).	CSP Design: To collect feedback on Socio-economic analysis, SWOT analysis, Needs identification and prioritisation
Rationale	In Spain, these tools were chosen for their familiarity and ease of use, enabling all stakeholders to communicate their opinions on socio-economic analysis, SWOT analysis, needs identification, and prioritisation.					
Functioning	The General Secretariat of Agriculture and Food, along with the National Rural Network, organised four meetings and provided online channels (web portal, email, online surveys) to gather feedback.					
Types of outputs	Detailed reports that summarise stakeholders' reactions to the topics presented, reflecting the diverse viewpoints and contributing to a more comprehensive understanding of the subject matter.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Consultation Forum			x	SE	Owner: Owner: Government of Sweden	CSP Design: Stakeholder Consultations
Rationale	The Government of Sweden introduced consultation forums (sakråd) in 2017 as a new way to work with stakeholders, aiming to collect a wide range of views on various aspects of the CAP reform.					

Functioning	A total of six consultative forums were organised between 2018 and 2021, covering topics such as general strategy, SWOT analysis, development needs, and draft measures. Most forums were conducted online, with participants given options to comment by speaking, writing, or sending comments within a given time frame.					
Types of outputs	Summaries of the discussions were captured in Word documents, providing insights and feedback on the different facets of the CAP reform.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Public consultation			x	BE-FL	Owner: Department of Agriculture and Fisheries	CSP Design: Needs Identification, SWOT
Rationale	The various participants were given the opportunity to identify additional strengths weaknesses, opportunities and threats that were not covered in the initial SWOT addressed, provide comments and formulate proposals for adjustment. Then, through brainstorming sessions to identify the needs for Flemish agriculture, the environment (linked to agriculture) and the wider countryside. Subsequently a number of breakthroughs were further elaborated.					
Functioning	Public consultation for two days on the needs of Flemish agriculture, environment (linked to agriculture) and the Flemish countryside Both days were set up identically: in groups and guided by external facilitators, participants were surveyed about the SWOT needs and breakthroughs.					
Types of outputs	The result of the public consultation is a comprehensive report in which the input of the participants and which was used as a basis for the needs analysis.					
Relevant CAP objective	All					
Relevant CAP intervention	All					

Table 2. Policy Choices Supporting Tools

Tool name	Policy choices supporting tools			MS	Author or owner	Objective and relevant tasks
	Voting and prioritisation tools	Expert judgement-based approaches	End user feedback mechanisms			
Internal Excel Tool		x		FI	Author: Ministry of Agriculture and Forestry	CSP Design: Needs Prioritisation
Rationale	This tool was developed specifically to facilitate standardised prioritisation of needs within the CAP SP, ensuring a systematic and objective evaluation of different needs.					
Functioning	Each identified need was scored based on various criteria such as social significance, urgency, relevance, CAP's role, and political importance. The scoring process was done in an Excel sheet, and the needs were prioritised accordingly.					
Types of outputs	The tool generates scores on each need, which can then be sorted in Excel for easy identification of high-priority needs.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Questionnaires on amendment requests from counties			x	DE	Owner: Federal Ministry of Food and Agriculture (BMEL)	CSP Monitoring: Amendments of measures/budget allocation in the ongoing funding period
Rationale	This formalised procedure ensures consistency in the process of coordinating amendments in the ongoing period, particularly critical in a federalised structure.					

Functioning	Templates in the form of tables are sent to the federal states for completion. Informal consultations with the Commission and further consultations with the federal states are then conducted based on these completed tables. In case of queries, further information is provided through this. In the regional monitoring committees of the countries, the changes are discussed and comments are made.					
Types of outputs	An extensive list with amendments that is sent to the commission, all amendments are also entered into an electronic system for record keeping.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Number-Voting for needs prioritisation	x			DE	Author: Emerged in exchange with Austrian partners in the Federal Ministry of Food and Agriculture (BMEL)	CSP Design: Needs Prioritisation
Rationale	This method was chosen to ensure a systematic approach to the prioritisation of needs, particularly useful when uncertainty prevails in the process.					
Functioning	A comprehensive table listing aspects of different needs is created. The Federal Ministry and the states list arguments for and against a high or low prioritisation of the needs. Based on this pre-selection, a 1-4 prioritisation is made in coordination with the states. This prioritisation is then discussed with stakeholders in a participation event, and stakeholder input is obtained in writing afterward.					
Types of outputs	An Excel file with a numbered prioritisation that clearly presents the prioritised needs.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Constrained Cumulative Voting	x			IT	Author: Owner: Italian Ministry and National Rural Network	CSP Design: Needs Prioritisation
Rationale	In Italy, Constrained Cumulative Voting was introduced to facilitate collective discussion and prioritisation of territorial needs. This tool aligns with institutional requirements for a participatory decision-making process in CSP drafting.					
Functioning	Developed by the Italian Ministry and the National Rural Network, this participatory route employs the Constrained Cumulative Voting method to assess and prioritise identified needs, supporting the overall decision-making process. This process is in line with the European Commission's legislative proposals requiring a sound and well-founded logic of intervention.					
Types of outputs	The process generates a shared consensus on the importance of each need and categorises them into homogeneous groups according to their importance for intervention.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Cumulative voting approach	x			LT	Author: Lithuanian Centre for Social Sciences, Institute of Economics and Rural Development	CSP Design: Needs Prioritisation CSP Monitoring: Performance
Rationale	Lithuania employed the Cumulative Voting Approach to prioritise needs in a participatory manner, involving various stakeholders and regional authorities.					
Functioning	Based on the SWOT analysis results, the Cumulative Voting Approach was used to methodically prioritise needs through stakeholder voting.					
Types of outputs	This tool resulted in clear documentation of prioritised needs and intervention settings, providing structured guidance for policy formulation.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Expert Judgement		x		LT	Author: Lithuanian Centre for Social Sciences, Institute of Economics and Rural Development	CSP Design: Targets Setting, Budget Allocation

						CSP Monitoring: Performance, Compliance
Rationale	In Lithuania, Expert Judgement was used to establish targets and allocate budgets. It was led by the Ministry of Agriculture and the National Paying Agency, focusing on a scientific and expert-driven approach.					
Functioning	This method was used to prepare the RDP for 2023-2027 in Lithuania, employing expert analysis and assessments.					
Types of outputs	The outputs included well-defined target settings and budget allocations that were used to shape the RDP.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
AHP Method	x			PL	Author: Institutes supervised by the Ministry of Agriculture and Rural Development	CSP Design: Needs Prioritisation
Rationale	Poland considered the Analytic Hierarchy Process (AHP) method for needs prioritisation in CSP design but found it too complex. The prioritisation was conducted using expert opinions instead. However, the tool remainds relevant.					
Functioning	The proposed method involved pair comparisons with scales to reflect preferences of options, along with expert-based methods. Simulations showed AHP to be time-consuming and similar in results to the expert-based approach.					
Types of outputs	Detailed examples and descriptions of how to use both methods were provided, including a critique of the AHP method and its feasibility.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Voting for needs prioritisation	x			RO	Author: Ministry of Agriculture and Rural Development (MARD)	CSP Design: Ranking of needs
Rationale	Utilised by the Ministry of Agriculture and Rural Development (MARD) in Romania, this tool was chosen to leverage the internal expertise of the MARD team, who had prior experience and good knowledge of EU rules, objectives, and priorities. It also allowed for efficient needs prioritisation within time constraints.					
Functioning	MARD departments were presented with a table outlining different needs and asked to prioritise them on a scale from high to low. A hierarchy of needs was then created and further discussed with stakeholders in an online event. Written stakeholder input was collected afterwards to finalise the prioritisation.					
Types of outputs	The outputs include a comprehensive database containing the prioritised needs, as established by the internal team and validated by external stakeholders					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Intervention Fiches		x		BE-WA	Author: Ministry of Agriculture - Wallonia	CSP Monitoring: Performance
Rationale	Adopted by the Ministry of Agriculture in Wallonia, Belgium, Intervention Fiches were seen as a simple and cost-efficient way to convey information to agricultural stakeholders regarding various intervention types within the plan.					
Functioning	Each fiche offers a concise summary of an intervention type, including eligibility criteria and support receiving procedures, designed to provide clear information to the intended audience.					
Types of outputs	Detailed and clear documentation on each type of intervention, outlining the support farmers can receive from the CAP, thereby enhancing transparency and understanding.					

Relevant CAP objective	All					
Relevant CAP intervention	All					
Needs Priorisation Approach		x		SI	Author: Auditing company Deloitte consulting LLC in cooperation with the Agricultural Institute of Slovenia	CSP Design: Needs prioritisation
Rationale	Previous critiques of Slovenian agricultural policies highlighted its inefficacy and inefficiency due to a sprawling objective scope. Thus, to bolster the prioritisation process, the European Commission advocated for a robust methodology backed by expert judgment.					
Functioning	The report employs a multifaceted criterion system, amalgamating survey findings, evaluation report outcomes, and other elements into a cohesive prioritisation mechanism. Each criterion possesses its distinct scoring system, culminating in a comprehensive rank-based prioritisation for the specific objectives of CAP. Each criterion was scored from 1 to 5 (synergies were scored from -1 to 5, as there may be conflicting needs), and the sum of these scores was used to rank the needs in order of importance for each of the nine specific objectives of CAP. In the final prioritisation process, these rankings were converted into the scoring system mentioned above.					
Types of outputs	The report's rankings of the importance of needs were used as one of the criteria in the overarching methodology for prioritising needs. These rankings are the only economics-based criterion in this context and account for about a quarter of the total score for needs prioritisation.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Multicriteria Analysis		x		ES	Author: National Ministry of Agriculture	CSP Design: Needs Prioritisation
Rationale	The tight schedule for CSP preparation did not permit the use of models or other tools that required rigorous testing. Thus, a multicriteria analysis was adopted to efficiently prioritise identified needs based on specific criteria.					
Functioning	Initially, 85 distinct needs were pinpointed. These needs were subsequently categorised into five significant groups: economic, environmental, rural, consumer, and AKIS-related needs. A multicriteria analysis was then employed to determine the importance of each need based on the following criteria: 1. Commitment: This gauges the potential synergies with other policies and assesses alignment with the objectives set forth by the EU, Spain, or other political priorities. 2. Connections: This evaluates the association between the identified need and other objectives. 3. Measurability: It examines whether the accomplishments of this need can be quantitatively gauged, mainly through impact or result indicators. 4. Relevance: This criterion evaluates how crucial the need is concerning its associated objective. By amalgamating all these criteria, the needs are ranked based on three categories: +++, ++, and +. Additional insights regarding the significance of each need for specific regions were also incorporated through the Territorial Criterion, determined by two factors: extent and intensity.					
Types of outputs	The result of this analysis is a classification system that prioritises the needs.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Comparative analysis		x		LT	Author: Lithuanian Centre for Social Sciences, Institute of Economics and Rural Development	CSP Design: Intervention Setting, Indicators Selection CSP Monitoring: Performance
Rationale	A comparative analysis was implemented to provide a comprehensive perspective on agriculture and rural development in Lithuania. This approach aids in shaping interventions and choosing appropriate indicators.					

Functioning	Interventions and indicators were determined rooted in the outcomes of a comprehensive SWOT analysis.					
Types of outputs	The output includes prioritised needs and a framework for intervention.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Logic Model		x		RO	Author: Evaluator	CSP Design: Check the correlation between needs, objectives and financial allocation, Ex-ante Analysis
Rationale	Due to limited time, sophisticated models could not be employed. The logic model, with spreadsheet computations, was chosen to verify the correlation between needs, objectives, and financial allocations.					
Functioning	Spreadsheet-based analyses were utilised to study the correlation between various factors					
Types of outputs	Based on the correlation analyses, recommendations were provided to MARD using the Ex-ante Evaluation report					
Relevant CAP objective	All					
Relevant CAP intervention	All					
CAP internal working groups		x		BE-FL	Owner: Department of Agriculture and Fisheries	CSP Design: Needs Identification, Intervention Setting
Rationale	The CAP Working Groups discussed the proposals for interventions within the different themes. This was done through explanations and examining different proposals. A list of feasible interventions was drawn up. Working groups: 1) Environment & Climate 2) Economic Resilience 3) Rural 4) Innovation & Knowledge 5) Farmer definition					
Functioning	Technical discussions among 5 internal focus groups on the proposals for interventions for several topics.					
Types of outputs	The work of the working groups contributed to the elaboration of the CAP plan and the various intervention sheets associated to it.					
Relevant CAP objective	All					
Relevant CAP intervention	All					

Table 3. Policy Analysis Tools for Evidence-Based Decisions

Tool name	Policy analysis tools for evidence-based decisions			MS	Author or owner	Objective and relevant tasks
	Statistical methods	Simulation models	Cost benefit models and impact assessment			
Statistical and environmental data analysis	x			BG	Author: Institute of Agricultural Economics	CSP Design: SWOT Analysis CSP Monitoring: Performance
Rationale	Used by the Institute of Agricultural Economics in Bulgaria, this is a common approach for data collection and analysis, chosen for its ability to give accurate and representative insights into the areas of SWOT Analysis and performance monitoring.					
Functioning	It involves comprehensive data collection and analysis, such as utilising various statistical methods and environmental data sources to provide an evidence-based understanding of the subject.					
Types of outputs	The outputs include essential information regarding performance and compliance within the agricultural sector, providing robust evidence to support policy decisions and strategic planning.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Support Simulation Tool (macro)		x		BE-WA	Author: Ministry of Agriculture - Wallonia, and ADE (consultant) Owner: Ministry of Agriculture - Wallonia	CSP Design: Targets Setting
Rationale	This tool was specifically tailored to the Wallonia context and was overseen by experts familiar with the local dynamics. Its implementation was essential to handle the intricate details and complexity associated with the design of interventions.					
Functioning	The Support Simulation Tool acts as an aid and income simulator, designed to evaluate the effects of financial assistance based on the technical and economic features of farms, considering factors such as farm size and area. It evaluates support across different farm types under the first pillar, comparing it with 2019 data for each farm type. The tool's functioning is further enhanced by incorporating FADN data to project the effects on income.					
Types of outputs	The tool provides numerical forecasts detailing the support level according to different criteria such as Technico Eco Orientation, Economic size, region, and farm size. It also offers aggregate projections that combine different types of farms.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Eco-Scheme Modelling			x	DE	Owner: Thünen Institute	CSP Design: Intervention Setting

Rationale	The design of the eco-schemes in Germany required a sophisticated approach, so three distinct models were employed to address the multifaceted aspects of the intervention design.					
Functioning	The Eco-Scheme Modelling comprises three stages: a) Preliminary evaluation of potential ecological and economic impacts based on initial drafts of five eco-scheme intervention descriptions from February 2021. b) Estimation of the costs associated with farming without chemical-synthetic plant protection products for a year, an evaluation of eco-scheme implementation according to farm sise, and type, and a projection of the ensuing budget requirements. c) A secondary budget assessment based on defined Eco-Schemes, analysing various design options, premium levels, and anticipated uptake. Additionally, it delves into the influence of assumptions on expected eco-scheme uptake and discusses significant factors and uncertainties.					
Types of outputs	a) Scenarios formed from the early drafts. b) Estimations concerning measure claims and the necessary budget. c) Varied scenarios based on differing premium levels.					
Relevant CAP objective	All					
Relevant CAP intervention	Eco-schemes (art.31)					
Ex-ante policy analysis			x	IE	Author: Teagasc	CSP Design: Ex-Ante Analysis CSP Monitoring: Performance
Rationale	The primary objective was to leverage existing data to assess the redistribution of CAP payments based on Pillar I reforms across various farms and determine their subsequent impact.					
Functioning	The tool undertakes both economic and scenario analyses to evaluate potential policy outcomes.					
Types of outputs	A thorough economic analysis report that sheds light on anticipated policy impacts and suggests potential interventions.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Statistical Socio Economic Analysis	x			LT	Author: Lithuanian Centre for Social Sciences, Institute of Economics and Rural Development	CSP Design: Socio-economic Context Analysis, SWOT Analysis
Rationale	The Ministry of Agriculture of the Republic of Lithuania initiated a comprehensive socio-economic analysis to inform the preparation of the RDP for 2023-2027, utilising various data sources, including desk research, Eurostat, FADN data, survey data, and national data, provided a holistic view.					
Functioning	Research results from the employed tools identify the strengths and weaknesses of Lithuania's agriculture and rural development. This information is vital for prioritising needs and supporting decision-making during the CSP drafting process.					
Types of outputs	The outputs are allocated as in-depth socio-economic context analysis highlighting the strengths, weaknesses, opportunities, and threats in the agricultural sector.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Statistical Socio-economic Context Analysis	x			PL	Author: Institute of Agricultural and Food Economics - National Research Institute	CSP Design: Socio-economic Context Analysis
Rationale	Given the constraints of time and budget, there was a need for a rapid and detailed socio-economic analysis of the agri-food sector and rural areas.					
Functioning	This analysis is derived from public statistics primarily from 2012-2018, including sources like EUROSTAT, Polish Statistics, and various research institutes. This data is then presented using consistent, EU-level context indicators.					
Types of outputs	A comprehensive diagnostic report detailing the socio-economic state of the agri-food sector and rural areas in each Polish voivodeship.					

Relevant CAP objective	All					
Relevant CAP intervention	All					
Statistical Data Analysis	x			RO	Author: Ministry of Agriculture and Rural Development (MARD)	CSP Design: Socio-economic analysis, SWOT analysis, Needs identification, Interventions CSP Monitoring: Compliance
Rationale	The creation of an interoperable data tool was not feasible due to time constraints. As a result, the Statistical Data Analysis tool was utilised to aggregate and analyse a wide array of data from various sources effectively.					
Functioning	This tool leverages spreadsheets to compute context indicators and establish target settings. It integrates data amassed from multiple repositories like Eurostat, FADN, National Statistics, and other administrative databases. Furthermore, this tool evaluates data from market reports, research papers, environmental agencies, and other relevant platforms.					
Types of outputs	The primary outputs are comprehensive reports describing the socio-economic context. These documents provide foundational insights for SWOT analyses and the identification of pertinent needs.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
SiTFarm tool (Slovenian typical farm model tool)		x		SI	Owner: Biotechnical faculty University of Ljubljana (UL), Chair for agricultural policy, economics and law (prof. Jaka Žgajnar)	CSP Design: Intervention Setting, Budget Allocation by testing different scenarios at farm level.
Rationale	The SiTFarm tool stands out as the singular tool in Slovenia designed for nuanced analyses at various agricultural levels, ranging from individual agricultural holdings to broader sectors. Given its robust capability to perform multilevel analyses and connect with other models, it serves as an invaluable asset for in-depth agricultural study					
Functioning	The tool facilitates scenario analyses of different measures' potential impacts at varying agricultural levels. It examines direct payments, evaluates voluntary measure uptakes, and integrates a methodological approach rooted in mathematical programming. Primarily, it centers its analytical focus on the production plan. The tool includes 145 typical agricultural holdings (model farms), which are representative for a larger number of actual farms. It combines a complex system of model calculations of the Agricultural Institute of Slovenia, which is a rich source of economic data in particular, as well as technological data and functions for production activities that enter into the production plan at the farm level. The focus was on measures of the first pillar DP (coupled and decoupled), SOPO measures and also LFA measures. Different conditions, payment amounts, thresholds, envelope distribution ratios etc. were also tested. The tool was used for scenario analysis of various variants of interventions during the preparation of the strategic plan.					
Types of outputs	Outputs encompass a myriad of indicators — economic (e.g. revenues, budget support, variable costs, gross margin), technological (e.g. intensity of cultivation, the scale of production and processing, the amount of the necessary labour by individual work phases, the utilisation of cultivated areas), and environmental (e.g. carbon footprint, use of phytopharmaceuticals, fuel consumption per unit of production, use of mineral fertilisers). These indicators offer insights for individual farms, as well as groups of farms and the entire aggregate.					
Relevant CAP objective	The tool is used to address predominantly CAP objective of fair farm income seaching for scenario with more equal gross margin per unit of labour engaged comparing different sectors.					
Relevant CAP intervention	The tool is designed so that it can be used to analyze the measures of the first pillar (coupled and decoupled, eco-schems), as well as the LFA and part of the agri-environmental schemes.					
Data analysis	x			ES	Author: National Ministry of Agriculture and Regional Ministry of Agriculture Other National Ministries	CSP Design: Socio-economic analysis, SWOT analysis, Needs identification

Rationale	The tight timeframe for designing the Common Agricultural Policy (CSP) prevented the deployment of other tools, especially simulation models, which require precise calibration.					
Functioning	The tool performs data analysis by extracting insights from various sources, including statistical databases, administrative databases, reports, and expert panels. Spreadsheets play a pivotal role in this process, aiding in threshold identification and measurement extension analysis.					
Types of outputs	The resultant outputs are detailed reports that capture the essence of the agricultural sector from multiple Common Agricultural Policy Specific Objectives perspectives. These reports underpin SWOT analysis endeavors and need identification exercises.					
Relevant CAP objective	All (There is one report for each specific objective)					
Relevant CAP intervention	All					
I/O/I matrix			x	NL	Author: Wageningen Research	CSP Design: intervention setting and
Rationale	The tool has been used to carry out an analysis of possible policy options for the Netherlands for achieving the goals set in the CSP, and the integral impact of those options as regards the economic, ecological and social objectives set and their interrelation.					
Functioning	Various policy options were studied through the use of the instruments objective impact assessment tool (I/O/I matrix)					
Types of outputs	Intervention setting					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Farm income FADN-based calculation tool			x	NL	Owner: Wageningen Economic Research	CSP Design: Intervention Setting
Rationale	The FADN calculation tool offers insight in the effect of various policy options on farm income.					
Functioning	The FADN calculation tool has supported the analysis of various policy options and their potential effect on farm income.					
Types of outputs	Intervention setting					
Relevant CAP objective	SO1					
Relevant CAP intervention	Direct Payments/BISS					
Eco-Scheme Farm simulation tool		x		NL	Owner: Wageningen Economic Research	CSP Design: Intervention Setting
Rationale	A number of models were used to support different aspects of the intervention design of the eco-schemes in the Netherlands.					
Functioning	a) Assessment of potential ecological and economic effects on the basis of the first drafts: The drafts of five intervention descriptions for eco-schemes from February 2021 were subject to an initial assessment of their ecological and economic implications. For each of the eco-schemes considered, this included a description of the baseline regarding the agricultural structure, the ecological classification in terms of effectiveness per hectare, and a regionalized calculation of the economic effects for individual farms. The ecological classification includes recommendations for improving the ecological effectiveness of the individual eco-schemes, as well as an assessment of the potential impact on the protected resources. In addition, calculations of funding needs and an ad hoc estimate of adjustment needs of farms were carried out. b) Assessment of the application of eco-schemes on the basis of the cabinet draft for the national law: Estimate of the costs of farming without chemical-synthetic plant protection products for one year. Furthermore, an assessment of the implementation of the various eco-schemes differentiated by farm size as well as farms type and determination of the resulting budget requirements; monetary effects of one option to promote low-input grassland management. c) Second assessment of budget requirements based on the Eco-Schemes as defined in the national law: effects of different options for the design and the premium levels of the planned eco-schemes on the expected uptake and the required budget; scenarios with different premium levels for the eco-scheme “crop rotation with leguminous crops” in combination with alternative specifications regarding the eligibility of fallow land as a crop; influence of selected assumptions on the expected uptake of other eco-schemes, and discussion of other important factors and uncertainties influencing the expected uptake of individual eco-schemes.					

Types of outputs	a) Scenarios based on drafts b) Estimate for measure claims and required budget c) Scenarios with different premium amounts
Relevant CAP objective	All
Relevant CAP intervention	Eco-schemes (art.31)

Table 4. Monitoring and Data Collection Tools

Tool name	Monitoring and data collection tools			MS	Author or owner	Objective and relevant tasks
	Compliance monitoring	Performance monitoring	Data and knowledge stocktaking			
Surveys		x		CZ	Author: Ministry of agriculture of the Czech Republic and State agricultural intervention fund	CSP Monitoring: Performance
Rationale	Surveys are an effective means to gather data in areas where traditional methods might be inadequate and can be used for monitoring output or result indicators to assess performance.					
Functioning	Surveys are deployed online, offering a straightforward and efficient way to collect data from a wide range of sources.					
Types of outputs	These generate structured responses from the target groups, providing quantifiable and comparable data for CSP monitoring and evaluation.					
Relevant CAP objective	Mainly SO9 and CCO					
Relevant CAP intervention	Support for knowledge, advisory and training (Art. 78)					
iSIP	x			PT	Author: IFAP - Agriculture and Fisheries Financing Institute	CSP Monitoring: Compliance, Clearance
Rationale	In Portugal, iSIP is employed to update field information collection, enhance farmer interactivity, and provide legal backing, such as eco-schemes.					
Functioning	iSIP is a technology-based tool used for annual checks on agricultural parcels and farming practices, updating the database, and allowing farmers to confirm or refute collected data (farmers can submit changes that are uploaded to the Parcel Identification System (SIP) and the system is subsequently updated). It includes information on legal constraints, agri-environmental measures, and eco-schemes.					
Types of outputs	Outputs include satellite data collection, legal constraints, and geotagged photos, all of which can be confirmed or rejected by farmers through the IFAP-Mobile App.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
IFAP-Mobile	x			PT	Author: IFAP - Agriculture and Fisheries Financing Institute	CSP Monitoring: Compliance, Clearance
Rationale	IFAP-Mobile in Portugal allows for field information collection using smartphones with GPS technology, aiding in compliance and clearance monitoring.					
Functioning	The tool collects information, mainly photos, to highlight field conditions, highlight crops as part of the crop monitoring process, validate investments, and control aid applications. Farmers can confirm or reject the collected information.					

Types of outputs	Outputs include on-the-ground verification and geotagged photos, enabling farmers to interact with the information collected and ensuring accurate references.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Irrigation Calendar (Calendário de Rega)	x	x		PT	Author: COTR - Operational Center of Irrigation Technology	CSP Monitoring: Performance, Compliance
Rationale	Portugal's Irrigation Calendar tool was designed for monitoring irrigation areas, contributing to performance and compliance evaluation.					
Functioning	The tool collects information on irrigation systems to evaluate efficiency, analyse crop water requirements, and assess legal constraints.					
Types of outputs	Outputs include detailed information about crop water requirements, legal constraints, and consumption data, all of which can be accessed online.					
Relevant CAP objective	SO5					
Relevant CAP intervention	The tool will be used to monitor the irrigation water efficiency measure. This tool is supported by other two tools, with climate information, evapotranspiration (SAGRA), and irrigation (MOGRA), that are already operating					
IS SZIF Information system	x	x		CZ	Author: Ministry of agriculture of the Czech Republic and State agricultural intervention fund	CSP Monitoring: Compliance and performance
Rationale	IS SZIF serves as a central hub for the administration and monitoring of SP projects. It enables seamless electronic communication with project applicants and beneficiaries and facilitates the verification and control of diverse data provided during various project phases. The integration with other public registers such as legal persons, physical persons, and animals extends its utility for broader control and monitoring.					
Functioning	This system operates as an interface to other public registers and systems, supplying the PA with essential data for verification and control of project applicants and beneficiaries' information. By interlinking with various public registers, it empowers the PA to leverage these other registers for comprehensive control and monitoring.					
Types of outputs	Verification reports, control documents, monitoring summaries, and electronic communications with project applicants and beneficiaries.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
FADN			x	CZ	Author: Institute of agricultural economics and information	CSP Design: Socio-economic Context Analysis CSP Monitoring: Performance
Rationale	The Farm Accountancy Data Network (FADN) functions as a standardised database holding essential economic data about Czech Republic's agricultural holdings. It allows for effective monitoring of results concerning support provided from the SP, including the area of direct payments.					
Functioning	FADN collects and analyses data related to gross added value, net added value, and other economic metrics to monitor the support provided to agricultural holdings. This database is instrumental in overseeing the effects of various support schemes on the farming sector.					
Types of outputs	Economic data, statistical reports, and analytical insights about agricultural holdings in the Czech Republic.					
Relevant CAP objective	This covers the SO related to direct payments and support of competitiveness of agricultural holdings					
Relevant CAP intervention	All					
LPIS (used with GIS)	x			CZ	Author: Ministry of agriculture of the Czech Republic and State agricultural intervention fund	CSP Monitoring: Compliance
Rationale	LPIS ensures that all supported land adheres to the given criteria, maintaining compliance with regulatory requirements.					

Functioning	The LPIS system functions in conjunction with GIS analysis to verify accurate overlaps in map layers related to supported land areas, ensuring that the right segments of land are marked and monitored.					
Types of outputs	Map outputs, land verification reports, and compliance documentation.					
Relevant CAP objective	Mainly SO5 and SO6					
Relevant CAP intervention	Agro-Environenmental and climate measures (Art. 70)					
Area Monitoring System (AMS)			x	CZ	Owner: European Commission	CSP Monitoring: Compliance
Rationale	Recommended by the European Commission, AMS assists in monitoring and controlling activities on supported agricultural lands using satellite imagery.					
Functioning	The system utilises digital photos from satellites Sentinel 1 and 2 to observe and manage the activities conducted on supported agricultural lands, providing a near-real-time view of the land and operations.					
Types of outputs	Digital photos, satellite imagery, land activity reports, and compliance documents.					
Relevant CAP objective	Mainly SO5 and SO6					
Relevant CAP intervention	Agro-Environenmental and climate measures (Art. 70)					
Dataplan Tool			x	FR	Owner: The Ministry of agriculture (DGPE/Bureau de la Coordination du Développement Rural) & ASP (Paying Agency)	CSP Design: Construction of the framework of referenece for the French CSP CSP Monitoring: Tool feeds the managing authorities with information from the CSP at regional level by regional authorities.
Rationale	Designed as an interface between regional and national authorities, the DATAPLAN tool streamlines collaborative work for constructing the framework of reference for the French CSP, enabling data collection and sharing.					
Functioning	The DATAPLAN tool serves as a collaborative data portal, enabling regional authorities to upload financial planning and result indicator information. It allows national authorities to calculate national target values of indicators, considering regional specificities. The DATAPLAN is therefore an interface for the uploading data from regional authorities to national authoritiers, and for transfering the data further to other applications dedicated to the implementation and monitoring of the French CSP, such as the RefPAC tool from the ASP. It enables the updating of the framework of reference of the French CSP at the managing authority level and transmission of the updated framework of reference to regional authorities (planificators)					
Types of outputs	The principal output is the CSP framework of reference proposal for the EC.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
3STR - Monitoring	x			FR	Owner: Paying agency (ASP)	CSP Monitoring: Compliance
Rationale	The European Parliament and Council have outlined an agricultural monitoring system aimed at automating the recognition of eligibility criteria for area-based schemes. These include verifying the cover declared on parcels using data from the Sentinel satellites supplied by the European Copernicus program. The primary benefit of this system is to quickly inform farmers of discrepancies between declared and recorded covers, thus allowing them to adjust their declarations prior to payment processing. Additionally, it minimises the need for on-site checks, improving overall efficiency.					
Functioning	The system leverages satellite imagery, particularly from the SENTINEL satellites, and geotagged photos. This is utilised to evaluate the growth and succession of plant cover on French agricultural plots. The goal is to confirm the presence of agricultural activity and to ensure the declared covers match the CAP declarations. If inconsistencies are found before the disbursement of CAP aid, farmers are alerted to rectify their declarations without any financial implications.					

Types of outputs	Controls					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Telepac Géophotos	x			FR	Owner: Paying agency (ASP)	CSP Monitoring: Compliance
Rationale	The application simplifies the process of capturing photos of specific locations and then transmitting them to the relevant authorities, making compliance checks more efficient and precise.					
Functioning	Telepac Géophotos is a dedicated smartphone application designed to send authenticated, geolocated photos of land plots.					
Types of outputs	Controls					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Support management tool at Regional level			x	FR	Owner: Regional Authorities	CSP Monitoring: Processing of applications for EAFRD support managed by regional authorities
Rationale	The ASP has decentralised the management of EAFRD support unrelated to surfaces to regional authorities. Consequently, regional authorities are entrusted with examining and verifying aid applications.					
Functioning	This tool is pivotal for managing and implementing interventions. It also furnishes the ASP with essential data for creating the annual performance report.					
Types of outputs	Dashboards for guiding programming and data extractions for EAFRD monitoring.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Synapse (information system)			x	FR	Owner: Paying agency (ASP)	CSP Monitoring: Prepare the Annual Performance Report, and prepare some data set for Monitoring & evaluation of CAP; Performance clearance (outputs and unit amounts for each intervention); Performance review (targets/milestones for result indicators). Evaluation of CSP
Rationale	France's CAP governance has necessitated a consolidated IT architecture capable of streamlining, auditing, and validating data for the Annual Performance Report, ensuring uniqueness among CAP beneficiaries across different paying agencies.					
Functioning	The SYNAPSE system emphasises interoperability between various management systems, minimising redundancy in data requests, and establishing a unique identifier number (GUID). Data sent by each paying agency undergoes checks for completeness, authorisation, and correctness before processing.					
Types of outputs	Annual Performance Report for CAP 2023-2027, from Financial year 2023 to financial year 2030					
Relevant CAP objective	Modernisation of CAP management (transversal S.O)					
Relevant CAP intervention	All					

Area Monitoring System (AMS)	x			DE	Author: Staatliche Führungsakademie (FüAk) Owner: Bavarian State Ministry of Food, Agriculture and Forestry (StMELF)	CSP Monitoring: Compliance
Rationale	Area monitoring introduces a transparent, efficient, and comprehensive method for monitoring agricultural activities, enhancing compliance checks.					
Functioning	The system regularly observes, tracks, and evaluates agricultural practices using data from Sentinel satellites under the Copernicus program. The intention is to gradually replace on-site controls in federal states. At the federal level, it was agreed at the Conference of Agriculture Ministers on September 27, 2019, to establish a central office to support the federal states in the introduction and operation of an area monitoring system (AMS). One year later, Bavaria was commissioned and another year later, the federal-state agreement for the ZKF came into force. The Bavarian State Ministry of Food, Agriculture and Forestry (StMELF) commissioned the FüAk as the central middle authority to set up a corresponding unit.					
Types of outputs	Datasets that supplement other monitoring data					
Relevant CAP objective	All					
Relevant CAP intervention	All					
IACS	x	x		EL	Author: Greek Paying Agency - OPEKEPE	CSP Monitoring: Performance and Compliance
Rationale	The system seeks to efficiently categorise farmer applications based on a set of predefined factors, ensuring a streamlined process for application verification and subsequent actions. Additionally, it aids in collecting valuable data for understanding various dimensions of agricultural activity within Greece.					
Functioning	IACS is used as the "Traffic Lights System" to assess farmer applications and classify them using a color-coding system. "Green" signifies an issue-free application, "red" indicates rejection, and "yellow" denotes applications that require further verification, such as a field visit or geotagged photos. Initial categorisation is informed by factors like previous year applications, potential changes, satellite imagery, and selected aerial photos. The system is integrated with other tools like Sen4cap, which utilises Sentinel II satellite images, and Agrisnap, which aids in collecting geotagged photos.					
Types of outputs	Categorisation of farmer applications into green, red, or yellow, and potential for deriving various agricultural indicators and insights based on the collected data.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
IACS			x	IT	Italian Ministry of Agriculture	CSP Design: Indicators Selection (payments) CSP Monitoring: Indicators Selection (payments)
Rationale	IACS is fundamental in consolidating various data sources to make informed decisions regarding payments. It ensures all relevant data is evaluated before making payment decisions.					
Functioning	The Italian IACS connects various components to perform the required checks. It is a preloaded software package with common rules that can be customised to align with national and regional policies. This software can guarantee greening controls, determine cultivated areas, support compensation or derogations linked to natural events, and pinpoint potential anomalies in eligible areas.					
Types of outputs	Classification of farmer applications, extraction of insights from agricultural data, and computation of various agricultural indicators.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
New Monitoring System AGEA (DATA Platform)		x		IT	Author: AGEA (in fase di implementazione)	CSP Design: Intervention setting CSP Monitoring: Performance

Rationale	This tool enhances the accuracy and effectiveness of data to satisfy regulations.					
Functioning	It provides detailed information on the beneficiaries of funding from the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD) at a national scale.					
Types of outputs	Comprehensive reports detailing funding beneficiaries at the national level.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Regional Management Systems - collect applications (aid and payment) for other interventions		x		IT	Regional and Local Authorities	CSP Design: Intervention setting CSP Monitoring: Performance
Rationale	This tool aims to ensure a more effective management and utilisation of data, specifically catering to the requirements laid out by the commission regulations. By centralising and categorising the information, it ensures seamless processing and administration of the European Agricultural funding at the regional level.					
Functioning	The regional management systems primarily collect data on those who benefit from the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD) on a regional scale. This information aids local and regional authorities in allocating and monitoring financial assistance.					
Types of outputs	Outputs from this system include comprehensive datasets detailing beneficiaries of the EAGF and the EAFRD at the regional level, which can be used for analysis, allocation, and monitoring.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Classyfarm	x			IT	Author: Ministry of Health (Istituto Zoprofilatticao Emilia Rimagna).	CSP Design: Other (Antibiotics in the food) CSP Monitoring: Compliance
Rationale	Classyfarm is established to enhance the efficacy of data and to align with the needs of the commission regulations. Furthermore, the tool bridges the communication gap between farmers and authorities, striving to elevate the safety and quality standards of products within the agri-food chain.					
Functioning	ClassyFarm operates as an integrated system for categorising breeding based on risk factors. It utilises scientifically validated coefficients to convert collected data into a numerical risk indicator for farms. The methodological transparency is maintained by publicly disclosing the risk assessment and categorisation processes.					
Types of outputs	The system provides a clear numerical indicator representing the current risk level of a farm. This indicator is determined by various scientifically validated coefficients that ensure the integrity of the assessment.					
Relevant CAP objective	SO1					
Relevant CAP intervention	Agro-Environenmental and climate measures (Art. 70)					
LAD IT system (Lauku atbalsta dienests - Rural support service)	x			LV	Author: Ministry of Agriculture	CSP Monitoring: Implementation, Monitoring and Evaluation
Rationale	The LAD IT system, having garnered multiple international accolades such as the "WSIS Prise 2017" and the "2015 United Nations Public Service Award," stands testament to its premium quality and pertinence in the execution of the CAP SP. Its excellence and relevance have been repeatedly recognised by global entities, underscoring its credibility in supporting rural developments.					

Functioning	Working steps of the RSS information system: 1. Identification of needs/requirements, identification, and analysis of indicators for the needs of the RSS, Ministry of Agriculture, and evaluators. 2. Inclusion of the required information in the application/reporting forms. 3. Farmers and beneficiaries enter the data in the Electronic Application System where logical controls and data existence controls are performed. 4. The data is managed in a structured way for most of indicators. 5. Creation of data classifiers in the database so data can be easily processed and analysed. 6. Data is transferred to the Oracle Business Intelligence data warehouse (OBI– tool used for reporting and data analysis) where it can be easily queried for the purpose of evaluation, reporting, or research in order to not overload the database with report requests.					
Types of outputs	An IT sysetm with around 650 users with over 80,000 external users for the EAS. The system currently has 17 sub-systems with various business system modules and more than 10 services for data exchange with external systems. The data warehouse can be accessed directly by 50 users including the RSS, Ministry of Agriculture, Institute of Agricultural Resources and Economics, evaluators, and others with more than 1000 different processes performed each day. Therefore, evaluators have information about applicants stored in other systems.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
BiedjaCam	x			MT	Owner: Agricultural and Rural Paying Agency	CSP Monitoring: Compliance
Rationale	BiedjaCam improves agricultural communication, fostering direct and multifaceted dialogues, augmented by remote verification via satellite imagery and geotagged captures. Designed with the agricultural sector at its core, BiedjaCam streamlines processes, provides farmers with indispensable information including targeted solutions for agriculture and financial support, and serves as a comprehensive digital hub catering to farmers.					
Functioning	Operating as a nexus between the Agency and farmers, BiedjaCam facilitates instant communication on matters ranging from notifications to clarifications. Geotagged images can be submitted by farmers, ensuring evidence-backed verification by the Agency.					
Types of outputs	BiedjaCam minimises physical on-site checks by leveraging satellite imagery, allowing farmers to rectify issues and claim support scheme payments in a timely manner. Additionally, it provides an informational database detailing payments received under various ARPA-administered support schemes.					
Relevant CAP objective	All					
Relevant CAP intervention	The tool will be used to monitor in particular AECCs and eco-schemes.					
Satillite Area Monitoring System	x			MT	Owner: Agricultural and Rural Paying Agency	CSP Monitoring: Compliance
Rationale	This tool offers daily monitoring of fields using satellite images and geotagged photos. It compares this data with expected norms and uses a simple traffic light system to categorise results.					
Functioning	This tool gathers daily satellite images for crops and turns the data into graphics. These graphics are compared to what's typically expected for a given crop. The traffic light system shows if the data matches, is uncertain, or doesn't match the expectations. The tool also uses real photos from farmers to check the satellite data.					
Types of outputs	The tool provides graphical data, a traffic light system for quick checks, geotagged photos for reference, official verification reports, and field maintenance checks.					
Relevant CAP objective	All					
Relevant CAP intervention	The tool will be used to monitor in particular AECCs and eco-schemes.					
Refresh of the Land Parcel Identification System (LPIS)	x			MT	Owner: Ministry for Agriculture, Fisheries and Animal Rights	CSP Monitoring: Compliance
Rationale	Annual updates allow for comprehensive coverage, timely updates, farmer interactivity, and legal backing - Automatic Claim System.					

Functioning	This tool facilitates yearly inspections of agricultural parcels, maintaining an updated land parcel and farming practice database, with farmers able to propose changes for assessment by ARPA The results are integrated into the Land Parcel Identification System (LPIS), allowing farmers to confirm or contest data, ensuring accurate data and compliance. It supports informed decision-making for payments and agricultural policies based on an annual data cycle of data collection, analysis, and verification.					
Types of outputs	The system offers updated LPIS data, lets farmers confirm or dispute data, creates claims based on the data, and collects expected changes for future planning.					
Relevant CAP objective	All					
Relevant CAP intervention	The tool will be used to monitor in particular AECCs and eco-schemes.					
Project Closure Database		x		MT	Owner: Managing Authority	CSP Monitoring: Performance
Rationale	Project closure reports provide a good source of information to collect data for respective indicators and for evaluation purposes.					
Functioning	The database aims to make the information from project closure reports digital, including relevant indicators. The tool is expected to be an IT based system which can be linked to RD investment data given that it will contain information at the level of the beneficiaries. The tool is currently being developed. Its effective use depends on adequate planning of data to be collected from the beneficiaries. The tool is centred around the interventions and therefore requires specific links to other elements of the CAP SP such as the specific objectives.					
Types of outputs	The output expected to be produced by the tool are excel based tables which allow for the selection of relevant variables from the project closure reports.					
Relevant CAP objective	All					
Relevant CAP intervention	The tool will be used to monitor mainly investment related measures. Monitoring of land-based measures is managed through a separate database. Notwithstanding, the Paying Agency also collects relevant information form the beneficiaries of land-based measures and therefore discussions are being held to ensure that all relevant data is captured in the database.					
Official Statistics	x	x		IT	Author: ISTAT, MEF, Ministry of Agriculture, SIGRIAN (CREA)	CSP Design: Budget Allocation, Intervention Setting CSP Monitoring: Compliance, Performance
Rationale	Official statistics provide invaluable insights into the current status of farms in line with the CAP regulation. They offer a snapshot of the economic circumstances of these farms, making them indispensable for effective policy-making.					
Functioning	The tools offer insights into the current state of farms based on the CAP regulation. By analysing this data, stakeholders can assess the economic condition and compliance levels of the farms under scrutiny.					
Types of outputs	Comprehensive reports detailing the status, economic health, and compliance of farms under the CAP regulation.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
RD Investment Data		x		MT	Owner: Managing Authority	CSP Monitoring: Performance
Rationale	Used during the RDP 2014-2020 period, the RD Investment Data tool is being updated for the CSP interventions particularly to monitor investment-based interventions overseen by the Managing Authority.					
Functioning	This monitoring tool tracks expenditure, budget, output, and result indicators. All relevant data, such as budgetary information, applicant details, and specific objectives, are uploaded into the database. The system's functionality is inclusive of various modules, ensuring a comprehensive overview of the CSP interventions.The IT system will include elements of both EAGF and EAFRD as well as new requirements not previously included in the APR (AIR 2014-2020). The IT System linking the numerous schemes and interventions will monitor expenditure, outputs and results throughout the programming period.					

Types of outputs	Detailed database in an excel format including selected variables for all project applications.					
Relevant CAP objective	All					
Relevant CAP intervention	The tool is mainly used for investment-based measures and LEADER. Land based measures are monitored through the abovementioned tools.					
In-depth Interviews		x		AT	Federal Institute of Agricultural Economics	CSP Design: SWOT Analysis CSP Monitoring: Performance
Rationale	In-depth interviews are one of the few practical tools available for data collection, offering reliability unmatched by other methods.					
Functioning	The method involves conducting thorough interviews to facilitate current analysis and reliably verify agro-statistical data.					
Types of outputs	The data derived provides information essential for monitoring performance and ensuring compliance.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Statistical and environmental data analysis		x		AT	Federal Institute of Agricultural Economics	CSP Design: SWOT Analysis CSP Monitoring: Performance
Rationale	This is a prevalent method for data collection and analysis, providing insights into the environment and statistics related to agriculture.					
Functioning	The process offers precise and representative insights into the field, ensuring accuracy and relevance.					
Types of outputs	The resultant data is useful for gauging performance and checking compliance.					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Configuration tool		x		NL	Owner: Netherlands Enterprise Agency (RvO)	CSP performance monitoring
Rationale	RvO utilises a configuation tool to monitor progress with regards the various result indicators in the Dutch context. The data in the tool (dashboard) are used to compile an annual progress report for the Netherlands.					
Functioning	The tool is used internally by RvO to keep track of the various indicators. RvO is responsible for the quantiative analysis and the Ministry is responsible for providing a qualitative explanation to the results in case certain targets are not achieved.					
Types of outputs	Annual performance report					
Relevant CAP objective	All					
Relevant CAP intervention	All					
Satillite Area Monitoring System	x			NL	Owner: Netherlands Enterprise Agency (RvO)	CSP Monitoring: Compliance
Rationale	This tool provides comprehensive, monitoring of fields, improving efficiency compared to traditional methods. It ensures data accuracy through comparison of satellite images and real-time geotagged photos. Its traffic light system enables early detection of potential issues. The tool's automated data translation increases resource efficiency, and its user-friendly app interface caters to farmers without demanding extensive technical knowledge. Finally, the provision for field visits and a system of accountability enhances verification processes and reliability of farming practices.					
Functioning	The Netherlands is using a comprehensive monitoring tool in the agricultural sector, specifically for tomato crops, which combines satellite technology, algorithm-based data interpretation, a traffic light system, and on-ground verification. Satellite images and data are collected daily and translated into a graphical form by an algorithm. The system compares the satellite data with expected norms indicating match, uncertainty, or mismatch. Further accuracy is ensured by comparing real-time geotagged photos taken by farmers using an app with the satellite data. Doubts are resolved through official reviews and potential field visits. This tool is also evolving, with the development of a minimum maintenance field algorithm.					

Types of outputs	The tool in use for agricultural monitoring in the Netherlands is multifaceted, focusing on satellite data collection, algorithmic data translation, and on-the-ground verification. The outputs produced include graphical data for easy interpretation, traffic light indicators to verify the fields crop, geotagged photos for real-world reference, official verification reports, and assessments of field maintenance standards via a specialised algorithm.
Relevant CAP objective	All
Relevant CAP intervention	The tool will be used to monitor in particular GAECs and eco-schemes.