



Centre for
**Strategy & Evaluation
Services**

Study to assess the performance and impact of the PRIMA programme

Final report

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Executive Summary

The European Commission will conduct an *Interim evaluation of the PRIMA programme* by June 2022, to be informed by the findings, conclusions, and recommendations from the present study. This report aims to facilitate the Commission's work by providing interim findings with regards to PRIMA's performance and impact to date.

This report provides key findings, conclusions, and recommendations concerning progress towards achieving the objectives defined when the programme was initiated. The report also provides a review of progress at the **programme level** (e.g., efficiency / effectiveness of management and administration, key achievements / the (expected) impacts and added value); and a review of progress at the **project level** (outputs and outcomes to date).

Context

The PRIMA programme was the last EU partnership launched under the previous EU R&I Framework Programme (Horizon 2020). The EC Decision governing the public-public partnership intervention was published in July 2017. As a ten-year initiative (2018-2028), PRIMA fosters joint research and innovation ("R&I") approaches among Mediterranean countries to improve water availability and sustainable agriculture and food production in a region that is heavily affected by climate change, urbanisation and population growth¹. Ultimately, it aims to contribute to deploying innovative solutions for "inclusive, healthy and prosperous Mediterranean societies".

The PRIMA Programme, which is a cooperation between North and South Mediterranean countries and therefore extends beyond the EU-27, refers to itself as a Partnership based on the principle of equal footing applied through co-decision, co-financing and co-management. As such, it has strong potential to develop as an instrument to promote scientific diplomacy and international engagement, including outside the EU.

Key findings and conclusions

The study found that **PRIMA's relevance to identified needs is high**. The programme is highly relevant for the Mediterranean basin Participating States and the region's R&I stakeholders alike. Given the wider socio-economic implications of climate change in the Mediterranean region, by extension PRIMA is also highly relevant to the achievement of key overall EU policy priorities (e.g. relating to the European Green Deal and the EU's contribution to the SDGs and climate change resilience and adaptation).

With regards to the **effectiveness** of PRIMA, **overall, positive progress has been made towards the objective of PRIMA's SRIA providing common R&I policy direction**. Given the heterogeneity of the PS involved in PRIMA and the fact that the programme itself is young, the establishment of PRIMA should be considered to be a fundamental achievement on which to build further in future.

PRIMA has funded a significant number of projects since the launch of its first call in 2018. To date, PRIMA has implemented a range of projects offering joint innovative solutions through Innovation Actions (IA) and Research and Innovation Actions (RIA). In its three full years of implementation to date (i.e. the 2018-2020 calls as although the 2021 call has been finalised, research projects have not yet commenced), PRIMA has delivered innovative solutions that are being piloted and tested on the ground, addressing joint regional challenges with the aim of making these solutions transferable beyond the Mediterranean area. However, many PRIMA projects are still underway, and some are still in their early stages. This, along with delays in project implementation due to the pandemic (a median delay of 4-6 months has been estimated by many project coordinators), makes it hard to assess

¹ PRIMA website, <https://prima-med.org/about-us/prima-in-brief/>

progress made related to enhancing innovative technology readiness of participating entities and the scalability of the proposed solutions.

With regards to **efficiency**, the key findings provide a mixed picture with the work of the PRIMA Foundation and Secretariat found to be highly efficient. However – as has been concluded in other studies on Article 185 initiatives – efficiency can be improved with regards to the implementation of the pooling of financial resources by the PS and through greater coordination of funding procedures and rules across the PRIMA PS.

As far as **internal and external coherence are concerned**, overall, the PRIMA programme appears to have achieved a good thematic and geographic balance, suggesting that it has been managed in an internally coherent manner to date. Moreover, synergies between created between different themes at the project level, as for instance, agro-food projects often have a water management dimension, water management projects sometimes consider farming systems etc. The PRIMA programme has demonstrated good external coherence overall in that there appear to be generally good synergies and complementarity between PRIMA and EU, national and regional R&I programmes in related thematic areas covering water management, farming systems and agro-food production.

The study's key finding regarding **added value** is that PRIMA plays a distinct role in the Mediterranean region that is complementary to those of other regional actors, such as the UfM CIHEAM, and the UN's FAO. The programme plays a specific role not played by others in strengthening R&I capacity and developing critical research mass across the Mediterranean area and in tackling inter-related issues relating to the need for innovative sustainable solutions in water management, agro-foods and farming systems, all crucial areas of the Mediterranean socio-economic ecosystem. The added value that PRIMA has already contributed could be further enhanced by deepening and systematising cooperation at a policy and funding level with other pan-Mediterranean organisations.

PRIMA's **added value from the national level perspective** is considered to be significant. From the perspective of the Participating States, there is a consensus that PRIMA adds value, however, the nature and extent of added value is perceived differently depending on the national circumstances. For example, from the perspective of the Southern Mediterranean countries, PRIMA constitutes a channel for participating in EU R&I transnational collaboration on more equal terms than that possible through other programmes (notably the EU Framework Programmes for RTD. This has in some instances provided access to R&I actors in such countries outside the EU to take part in transnational research projects for the first time, helping to build capacity as newcomers are gaining experience of project participation which could provide a springboard in future to being able to take part in Horizon Europe and other transnational R&I funded projects (e.g. Interreg MED Programme and the ENI CBC Med 2021-2027 initiative implemented under the new Neighbourhood, Development and International Cooperation Instrument). A key added value of PRIMA's role is in widening participation and in encouraging newcomers among research-performing organisations to apply for funding. In addition, in the southern Participant States, a key added value is that SMEs and industry are being encouraged to take part in projects in countries where national R&I funding programmes have typically focused on supporting publicly-funded research only. The role of PRIMA in promoting cultural shifts towards more public-private partnership-driven R&I approaches can be noted.

Recommendations for the PRIMA programme

- **Recommendation 1:** Whilst significant progress has been made in strengthening cooperation between national Ministries and funding agencies and R&I actors involved at the project level across the Mediterranean area, there is a need to further improve South-South cooperation in particular, and a need to build on the good progress already made in North-South cooperation.
- **Recommendation 2:** In order to improve on current shortcomings in Section 2 linked to funding arrangements, the PRIMA programme should work with PS to reform the current design of grant funding. In order to avoid a potential drop in demand for this funding instrument, the work to

improve the efficiency of Section 2 funding (including the possibility of full or partial harmonisation of the funding rules across PS) should be made a priority.

- **Recommendation 3:** PRIMA's work to align national research and innovation agendas and funding procedures has shown promising initial results. PRIMA should continue to work with PS to further align national funding procedures and continue to align national and regional R&I agendas with PRIMA's SRIA.
- **Recommendation 4:** Given the possible bias inherent in the programme design and calls for application procedure (focused on scientific excellence and proposal requirements most conducive to public research and innovation performers), PRIMA could consider encouraging wider innovation actors to apply for funding, including strengthening the participation of SMEs. This may include ensuring that evaluation panels for grant applications are widely represented and include representatives with good knowledge of higher TRLs and end-users. A further possibility might be to set up a small pilot programme for an SME-focused call in which SMEs might lead projects to harness technological innovation and to develop relevant solutions to address the economic, societal and environmental sustainability challenges identified by PRIMA in its SRIA.
- **Recommendation 5:** Opportunities to exchange knowledge, experiences and lessons learned between project coordinators and other participants should be strengthened even further, to build on the solid progress made so far. One possibility would be to organise webinars or events for projects that have either newly been funded or are in their early stages to learn from those that are already in their second or third year of implementation. This would promote the transfer of relevant experience between project participants and help to avoid risk of duplication in project research activities. This is already happening within the PRIMA programme to some degree, but could perhaps be expanded through, for example, the enhanced clustering of projects with similar or complementary topics and activities
- **Recommendation 6:** PRIMA has progressed well on the articulation of specific and operational objectives for the PRIMA. Overall, the objectives set are relevant for R&I activities in general as well as to the specific context in which the PRIMA programme is implemented. Suitable Key Performance Indicators have also been developed. To further improve on the current objectives and performance framework, PRIMA could consider shifting the current objectives, so that the specific objectives are referred to as general and the operational objectives become specific objectives. New operational objectives could then be – without much effort – derived from the current set of KPIs.

Recommendations for PRIMA Participating States

- **Recommendation 1:** Given the emerging promising results achieved by the PRIMA programme, this study recommends that Participating States continue their cooperation in PRIMA, building on the achievements to date. This should include further improving South-South cooperation and North-South cooperation.
- **Recommendation 2:** As a matter of priority, PS should work together to improve the efficiency of Section 2 funding and ensure that project proposals evaluated successfully are able to be funded and implemented during the originally envisaged period.
- **Recommendation 3:** In order to build on the initial results achieved, Participating States should continue to work with PRIMA and cooperate together to improve the efficiency and effectiveness of funding coordination. This includes ensuring, as far as financially feasible, that PRIMA project proposals that are successfully evaluated and selected for funding under Section 2 projects are fully funded by the PS.
- **Recommendation 4:** PS should, where feasible, review national procedures relevant to R&I funding to ensure that the administrative burden is minimised and the time to grant maximised.

- **Recommendation 5:** PS should, where feasible, reconsider the effectiveness in supporting private R&I performers, including SMEs, in order to provide broader and more comprehensive support for innovation activities in PRIMA.

1. Introduction

This report sets out the final report of the study to assess the performance and impact of the PRIMA programme. It presents the findings of the research carried out through primary and secondary data collection.

1.1 Study objectives

As set out in Art. 14 of the PRIMA Decision², the Commission will conduct an *Interim evaluation of the PRIMA programme* by June 2022, to be informed by the findings, conclusions and recommendations from the present study. The design and analysis of this assignment should therefore facilitate the Commission's work and take into account the nature of cooperation as facilitated by Article 185 Partnerships.

This study's objectives were, in summary, to:

- Evaluate the **programme's performance** in achieving the objectives defined when the programme was initiated;
- Review progress at the **programme level** (e.g. efficiency / effectiveness of management and administration, key achievements / the (expected) impacts and added value); and
- Review progress at the **project level** (outputs and outcomes to date).

More specifically, this evaluation concerns research outputs commissioned and created in collaboration between Mediterranean R&I funders, R&I performers and prospective end-users of research results, some of whom are involved in projects (including social groups, such as NGOs and farmers groups), supported with EU funds.

There is a possibility of PRIMA being continued beyond the 2017-2028 period, and this study therefore plays a crucial role in identifying lessons learned, and in casting light on the ongoing relevance, efficiency, effectiveness and value added of the programme, such that this could inform future decision-making on the PRIMA's programme. The evaluation also provides an opportunity to identify lessons learned and any good practices.

1.2 Contents of this report

This report presents the key findings of the study commissioned to assess the performance and impact of the PRIMA programme.

The final report is structured as follows.

- Section 2 describes the methodology underpinning the data collection, the timing of the research, and the approach to the synthesis analysis. It also explains the limitations of the study design.
- Section 3 provides an introduction to the PRIMA programme. It presents the background and rationale of the programme, its objectives and main activities. The intervention logic of the programme is also described. Section 3 also presents a portfolio analysis of the PRIMA projects funded to date.

² Decision (EU) 2017/1324 of the European Parliament and of the Council of 4 July 2017 on the participation of the Union in the Partnership for Research and Innovation in the Mediterranean Area (PRIMA) jointly undertaken by several Member States.

- Section 4 presents the key study findings. In accordance with the Better Regulation guidelines, this is structured according to the study's key evaluation criteria – Relevance, Effectiveness, Efficiency, Coherence and Added Value.
- Section 5 summarises the key conclusion and recommendations, including highlighting lessons learned and good practice examples identified through the research.

The report annexes provide supporting evidence.

- Annex 1 – sets out an evaluation framework with a set of evaluation questions.
- Annex 2 – outlines the types of stakeholders consulted.
- Annex 3 – provides a list of key literature consulted.
- Annex 4 – outlines the case studies.

2. Overview of the methodology

Section 2 presents an overview of the methodology and research tools guiding the assessment study. These were designed in line the Terms of Reference of the study and in line with the Better Regulation guidelines.

2.1 Main methods and research tools

The methodology design was centred around an evaluation questions framework with associated sub-questions, indicators, and data sources (see Annex 1). Each research question was addressed through more than one source to allow for triangulation of data.

The planning, data collection and analysis were structured around 3 Tasks (Task 0 Inception, Task 1 Data Collection, and Task 2 Analysis and reporting).

The main research tools used were:

- Desk-based review of primary and secondary evidence;
- Semi-structured interviews; and
- Development of qualitative case studies.

The research tools and analysis are described further below. In addition to these activities, the Contractor also supported the PRIMA Foundation in reconstructing the PRIMA intervention logic and providing input to a selection of draft KPIs for monitoring performance in future, with a focus on indicators relevant to PRIMA's specific and operational objectives.

2.1.1 Desk-based review of primary and secondary evidence

The desk research was driven by two main sources of information and data sources:

- **Collection of secondary data:** the research team assessed relevant documents according to the agreed research questions. Qualitative data (e.g., existing analysis) was synthesised and contrasted with other data to ultimately triangulate and draw the main findings and conclusions.
- **Collection of primary data:** Quantitative primary data (drawing on the PRIMA MEL database) was extracted and analysed. The overall purpose was to present data on the implementation of PRIMA projects and on financial data, e.g., programme level funding data by source and by theme, budget for projects funded and their characteristics, the lead coordinating organisation and participating organisations in projects, and other financial data.

The outputs of the desk-based review fed into the development of the progress and final reports. As well as using the desk research to feed into the results, the study team documented good practice and success stories, highlighting opportunities for PRIMA in the future, and documented challenges and failures.

Annex 3 contains the list of literature that contributed to the drafting of this report.

2.1.2 Semi-structured interviews

The study team carried out 25 semi-structured interviews with different types of PRIMA stakeholders.

The objective of the stakeholder interview programme was to engage with key stakeholders to discuss the programme's performance, effectiveness and expected outcomes. For this purpose, the study team developed semi-structured interview guides to facilitate the discussions. The interview guides were derived using the research questions framework as a foundation (see Annex 1). The interviews

were conducted as open discussions, allowing interviewees to express themselves openly and freely.

An overview of the interviews and a breakdown by stakeholder type is presented in Annex 2.

2.1.3 Development of qualitative case studies

The desk-based review and selected interviews with PRIMA project coordinators were developed into case study analyses (see Annex 4). The cases aim to highlight the state of play in implementation of a selected number of projects across different thematic areas, and to identify the outputs and results and emerging outcomes and impacts to date, as well as any good practices.

PRIMA projects were selected to be the subject of case studies based on various criteria including ensuring a geographic and thematic balance with regards to the PRIMA scope. There was also a temporal criterion to ensure that projects were mature enough to produce robust findings, including demonstrating preliminary outcomes. In one or two cases, however, projects that showed particular promise but are still at a relatively early stage in their implementation were also analysed.

The final case study selection covered the following themes:

- **Farming systems** - NEWFEED project (Turn Food Industry By-products into secondary Feedstuffs via Circular-Economy Schemes).
- **Agro-food production and value chain** – ARTISANEFood project (design of a safety decision support IT tool for artisanal food producers), the SUREFISH project (allow for traceability and authenticity of the fish along the entire supply chain, using RFID, blockchain, TTI and tamper-proof technologies), and CAMELMILK project (production and commercialisation of camel milk and camel milk products) will be provided.
- **Nexus** – Nexus-Ness (production of a comprehensive Water-Energy-Food Ecosystem system for optimal resource management).

Further projects at the mid-term review stage that show considerable promise but for which it was not possible to produce separate case studies, but which were nonetheless identified as being interesting with strong potential to achieve promising scientific results and innovative solutions are the following projects:

- **Water management - FIT4REUSE³** will provide safe, sustainable and accepted ways of water supply for the Mediterranean basin by exploiting non-conventional water resources, treated wastewater and desalinated water which has strong potential to contribute to addressing the gap between agricultural water demand and supply and providing consistently high-quality water throughout the year. The project focuses on innovative, sustainable and safe treatment technologies, and the use of treated wastewater and desalinated water in agriculture and for aquifer recharge.
- **Farming Systems - SUPROMED⁴** - the aim is to enhance the economic and environmental sustainability of Mediterranean farming systems through more efficient management of water, energy and fertilizers.
- **Agro-foods - SIMTAP⁵ – Self-sufficient Integrated Multi-Trophic AquaPonic systems** for improving food production sustainability and brackish water use and recycling.

³ <https://fit4reuse.org/>

⁴ <https://www.supromed.eu/index.php/en/>

⁵ <https://www.simtap.eu>

- **NEXUS⁶ - SIGMANEXUS.** The project has adopted an inter-disciplinary approach to developing an understanding as to how water management, food production and consumption, and ecosystems management are linked together in the Mediterranean region.

2.1.4 Analysis and reporting

The data collection Task was followed by an analysis of the data and the final reporting activities. This focused on assessing the data and information available relevant to each research question and triangulating the available information to arrive at key findings conclusions for each question.

The main output of the analysis is the final report, which is also the main study deliverable.

In addition to main conclusions, the study team has also developed recommendations addressing the main stakeholders of PRIMA. The key findings also identify good practice examples and emerging⁷ examples of interesting practices identified in the course of assessing the PRIMA programme activities.

2.2 Methodological and data limitations

The study was designed as an evaluative assessment of the PRIMA Programme's implementation to date during its first four years of implementation (i.e. 2018-2021). The study design was based on the Better Regulation approach to evaluation, although it was not a comprehensive evaluation design given the limited time and scope of the assignment. This study rather serves as evidence to feed into future assessments. More specifically, the study aimed to produce some robust findings and conclusions to feed into the European Commission's interim evaluation of the PRIMA Programme to be carried out by the summer of 2022.

A key strength of the data inputs used for this study is that there is comprehensive financial and basic monitoring data (e.g. outputs and some initial results) available on the implementation of the PRIMA programme to date. This has enabled the analysis to be both quantitative and qualitative in nature, with the qualitative inputs predominantly stemming from the stakeholder interviews. However, a limitation in the data is that across the portfolio of projects supported through PRIMA as a whole, many projects are at a relatively early stage in their implementation. Moreover, some projects have experienced delays in terms of results and outcomes materialising due to slippage in the overall project implementation timeframes due to CV-19.,

A further limitation of the study is that the analysis covered a large number of research questions which were to be addressed in a relatively short amount of time. In order to ensure that all research questions were sufficiently addressed (and data triangulated), resources had to be balanced across the questions. This has allowed the study to address all the specific questions, but has not allowed for an in-depth analysis in every instance.

⁶ <http://www.sigma-nexus.eu/> - the project is contributing to economic, social and technical (including hydrological and ecological) aspects of both theoretical and applied research on resilient and productive agro-ecosystems. In innovation, by designing and supporting the innovation digital portal, it will strengthen cross-sectoral communication, improve coordination between research and policymaking, and support scalability and technology diffusion.

⁷ i.e., examples of promising, innovative and effective solutions but which are not yet proven to constitute best practice but, with continued support, are expected to produce exceptional results

3. Context and background of the PRIMA programme

Section 3 presents a descriptive analysis explaining the wider context of the PRIMA programme. It first describes the key characteristics of PRIMA before presenting the programme's intervention logic. Section 3 then briefly summarises PRIMA's main achievements to date, before concluding by presenting an analysis of projects funded by PRIMA to date.

3.1 Programme background and rationale

The PRIMA programme was the last EU partnership launched under the previous EU R&I Framework Programme (Horizon 2020). The EC Decision governing the public-public partnership intervention was published in July 2017. Article 10 of the Decision summarises PRIMA's overall aim which is to:

*"implement a joint programme to foster research and innovation capacities and to develop knowledge and common innovative solutions for improving the efficiency, safety, security and sustainability of agro-food systems and of integrated water provision and management in the Mediterranean area. PRIMA should contribute to the achievement of the recently agreed Sustainable Development Goals and to the forthcoming European Sustainable Development Strategy as well as to the goals of the Paris Agreement."*⁸

As a ten-year initiative (2018-2028), PRIMA fosters joint research and innovation ("R&I") approaches among Mediterranean countries to improve water availability and sustainable agriculture and food production in a region that is heavily distressed by climate change, urbanisation and population growth⁹. Ultimately, it aims to contribute to deploying innovative solutions for "inclusive, healthy and prosperous Mediterranean societies".

PRIMA has the remit to support all types of R&I activities, including research, development and innovation projects, innovative demonstrators and pilot plants, capacity building, training, awareness-raising and dissemination actions, and researcher mobility. The programme should cater for a wide range of Technology Readiness Levels (TRLs) and is tasked with ensuring an appropriate balance between small and large projects.

PRIMA is a Public-Public Partnership set up as an Article 185 initiative. Under Horizon 2020, the European Union's Framework Programme for Research and Innovation, implementing Article 185 implies that the participating EU Member States voluntarily integrate their research efforts, and define and commit themselves to a joint research programme of added value to the EU. Article 185 initiatives therefore need to be designed as long-term public-public partnerships (P2), address common challenges through the creation of synergies and between the national and EU level and require a Dedicated Implementation Structure (DIS). Established through the EU ordinary legislative procedure, they qualify for financial support to the joint implementation as the EU promotes its integration of scientific, managerial, and financial aspects amongst national, regional and EU research programmes.¹⁰

It is important to note that during Horizon Europe, whilst Article 185 initiatives such as PRIMA will be continued, the overarching programming architecture has changed in that in the 2021-2027 period, all Art. 185 and Art. 187 Partnerships will be reclassified as European Partnerships, and will therefore

⁸ Decision (EU) 2017/1324 of the European Parliament and of the Council of 4 July 2017 on the participation of the Union in the Partnership for Research and Innovation in the Mediterranean Area (PRIMA) jointly undertaken by several Member States

⁹ PRIMA website, <https://prima-med.org/about-us/prima-in-brief/>

¹⁰ European Commission, *Article 185 initiatives*, Horizon 2020, available on <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/article-185>

be part of a broader grouping of Partnerships being supported through the EU RTD FPs consisting of the EIT's KICs and the new European Institutionalised Partnerships, which are thematic in nature.

This development has strategic implications for PRIMA entailing close cooperation with a number of other partnerships. PRIMA has established cooperation and is currently collaborating with other partnerships under H2020, for example JPI Water, FACCE-JPI (Joint Programming Initiative on Agriculture, Food Security and Climate Change), JPI HDHL (Healthy Diet for a Healthy Life), and the European Institute of Technology and Innovation on Food.

PRIMA is also seeking to establish links with EIT FOOD programme on water scarcity in the South.

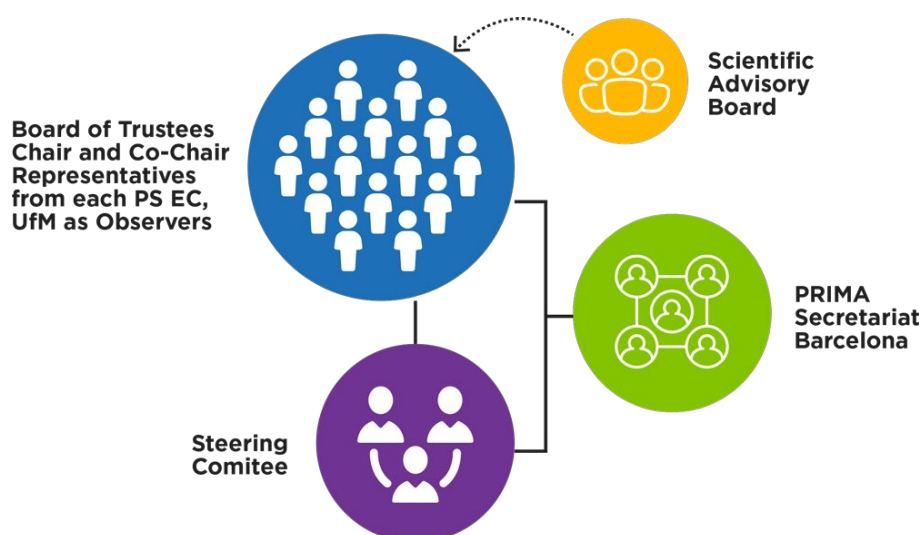
In parallel, PRIMA is establishing new collaborations with EU partnerships set up under Horizon Europe i.e. Water4all and the newly established EU Missions on a soil deal for Europe, Restore our Ocean and Waters, as well as the EU Mission Adaptation to Climate Change.

The most recent example of these new links is that PRIMA has drafted and has launched a call topic in close collaboration with EU Mission "A soil deal for Europe" in AWP2022.

Given that the geographical remit of PRIMA includes a significant number of non-EU countries that are Bordering Mediterranean Sea (MPC) countries not associated to Horizon 2020, international agreements for scientific and technological cooperation between the Union and these countries were required in order to extend to them the legal regime established by the programme Decision. These third countries are: Algeria, Egypt, Jordan, Lebanon and Morocco.

With the entry into force of PRIMA in August 2017, the PRIMA Foundation was established and is, with a Secretariat in Barcelona, responsible for the partnership implementation. Ever since, the PRIMA Participating States (PS) have expanded to 19 countries¹¹ which help increase the required scale and scope by bringing together financial and intellectual resources.

Figure 3-1: PRIMA Foundation overview



Source: PRIMA

As shown in the diagram above, the PRIMA Secretariat supports the PRIMA Steering Committee and the Board of Trustees, which is made up of a representative from each PS. The EC and the Union for Mediterranean (UfM) participate as observers in the Board. A Scientific Advisory Board (also known as the Scientific Advisory Committee), consisting of scientific representatives provide input on the R&I

¹¹ Current PRIMA Participating States countries are: Algeria, Croatia, Cyprus, Egypt, France, Germany, Greece, Israel, Italy, Jordan, Lebanon, Luxembourg, Malta, Morocco, Portugal, Slovenia, Spain, Tunisia and Turkey have formally become PRIMA.

direction. For example, they propose the content of the thematic part of the AWP which are then put forward to the PS before being agreed and finalised.

The PRIMA Programme refers to itself as a Partnership based on the principle of equal footing applied through co-decision, co-financing and co-management. These principles are reflected throughout programme management and implementation, for instance in the design and structure of the governance bodies, in decision-making, in the constitution of the evaluation panels and also within PRIMA staff. As such, the partnership principle has strong potential to develop as an instrument to promote scientific diplomacy.

The main steering document of PRIMA is the co-authored long-term Strategic Research and Innovation Agenda (SRIA)¹², which is the document which sets out the overall direction of the programme. The SRIA was developed with the help of a consultation process which encompassed the collection of inputs from a range of sources, including an online public consultation, analysis, workshops, and stakeholder events involving experts and multiple stakeholders, including government representatives from PS, R&I actors from PS, key regional partners etc. It is centred around three main research teams:

1. **Management of Water:** Integrated and sustainable management of water for arid and semi-arid Mediterranean areas
2. **Farming Systems:** Sustainable farming systems under Mediterranean environmental constraints
3. **Agro-food value chain:** Sustainable Mediterranean agro-food value chain for regional and local development.

The overall direction of the SRIA is reflected in the Annual Work Programmes (AWP) outlining the Calls for Proposals and other activities envisaged for the upcoming 12 months.¹³

With regards to the funding instruments, Calls for Proposals are sought through four Pillars, encompassing different types of activities:

Section 1 – Activities and actions organised, including Prizes, managed by the PRIMA-IS

Section 2 – Activities selected following transnational call organised by PRIMA -IS and funded by PS

Section 3 – Activities and actions organised, managed and funded by the PS

The main difference between Section 1 and Section 2 grants is i) the funding sources and funding rules (either national or EU), ii) and the management (either by PRIMA or at the national level). Whereas Section 1 grants are funded by financial contributions provided directly by the EU, Section 2 grants are funded by the Participating States who are represented in the relevant (successful) project consortia.

Section 3 activities comprise an array of national activities that contribute to the objectives of the PRIMA programme, in particular to the alignment of national programmes. They are managed, funded and implemented by the PS. Although not EU funded or funded directly through the PRIMA programme, they represent an important source of in-kind financial contribution by the PS, the count towards the matching of EU funds and towards the achievement of the PRIMA programme's objectives overall.

¹² https://prima-med.org/wp-content/uploads/documents/PRIMA-SRIA_Strategic-Research-and-Innovation-Agenda.pdf

¹³ <https://prima-med.org/documents-reports/>

Consortia composed of at least three legal entities established in three different PS can apply to the calls for R&I proposals¹⁴. Guidelines and requirements vary among activities established under Section 1, 2 and 3.¹⁵

3.2 The PRIMA Programme's objectives and intervention logic

The overall strategic direction and implementation structure was covered in section 3.1. Section 3.2 presents the intervention logic¹⁶ of the PRIMA programme.

The purpose of the intervention logic mapping is to set out the theory of action and to demonstrate the **inter-relationship and causal chains** between the **general, specific and operational objectives**, the **inputs** (human and financial resources) and activities being supported, and the **expected achievements**, assessed in terms of **outputs** (immediate/ short-term outcomes), **outcomes** (intermediate outcomes) and **impacts** (longer-term outcomes).

Firstly, the intervention logic summarises the **general goal of PRIMA** (to develop innovative, sustainable solutions in the field of water management and food systems) to tackle the problems identified (unsustainable water management of water provision and food systems in the Mediterranean). The problems that the PRIMA programme is designed to address are driven by the insufficient contribution of R&I to tackling the problems and challenges facing the Mediterranean region and insufficient cross-border coordination across the region. Programmes established as an Article 185 initiative, including PRIMA, have a political perspective (policy alignment and funding) as well as a financial element (funding of project consortia with both national and EU funds according to the Annual Work Plans).

The logic diagram also outlines the **specific and operational objectives** of PRIMA. The three specific objectives are to (1) align national R&I programmes and procedures, (2) promote the critical mass of R&I actors and resources and (3) to strengthen innovation capabilities. The specific objectives reflect the basic rationale of Article 185 initiatives to align agendas and to pool resources at the national level in order to more efficiently produce high-quality research and innovation outputs that benefit the whole region.

The operational objectives (as defined by the PRIMA Secretariat) relate to the activities in which PRIMA is active in, with a distinction between:

- the **political/policy/programme level** - supporting the increased coordination of national research and innovation agendas, by funding projects supporting innovation and policy and through monitoring and evaluation of the implementation of the PRIMA programme.
- the **project level involving R&I performing consortia** - e.g. through capacity building/knowledge transfer among research and innovation performers and end-users and by financially supporting increased collaboration and increased capacities.

The inputs and activities describe the resources put forward and activities carried out in order to achieve the objectives across the hierarchy of objectives defined (e.g. general, specific, operational). A distinction is again made between activities that aim to contribute to the policy/political objectives of PRIMA and those that aim to support project level activities.

¹⁴ Derogation to H2020 rules of participation to adjust the minimum eligibility conditions for participation in PRIMA indirect actions to be at least three independent legal entities. Those legal entities shall be established in three different countries considered to be Participating of which: (i) at least one is based in a Member State or third country associated to Horizon 2020 (ii); at least one is established in a third country bordering the Mediterranean Sea.

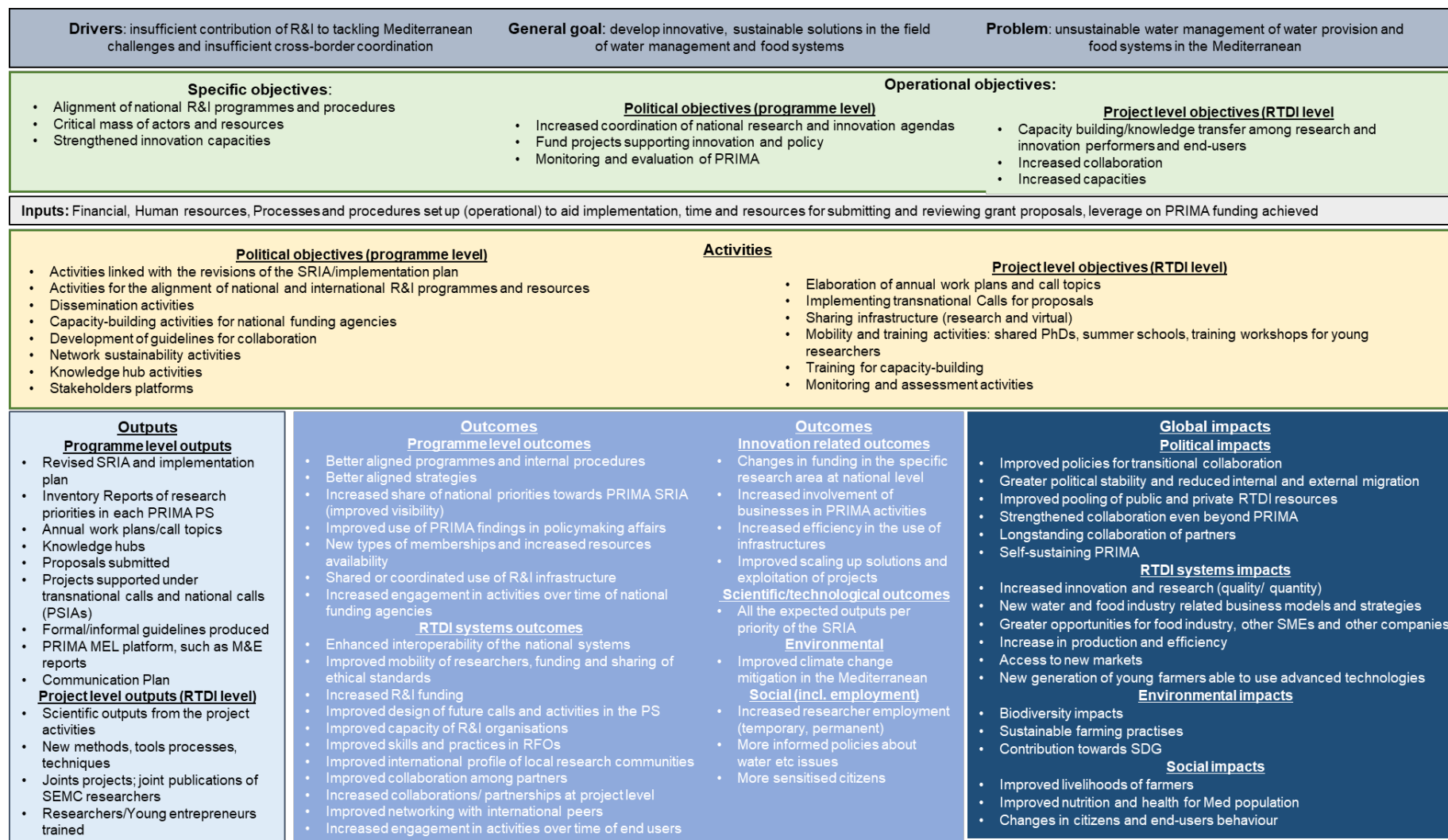
¹⁵ https://ec.europa.eu/info/research-and-innovation/research-area/environment/prima_en

¹⁶ The current version of the intervention logic was reviewed and revised by CSES and agreed with PRIMA in December 2021.

Subsequently, the outputs, expected outcomes and global (wider) impacts have been derived by the aforementioned activities. They have been categorised according to where (on which stakeholders) and how (in relation to the R&I system) they are expected to fall.

PRIMA's intervention logic is presented below.

Figure 3-2: PRIMA Intervention logic



3.3 Portfolio analysis (financial analysis and thematic review of projects)

This section provides an overview of the projects funded by the PRIMA programme between 2018 and 2021 (i.e. over 4 years). It provides statistical data on the number of projects, funding, thematic areas, action types, participating entities and the geographical distribution of projects, followed by an analysis of the data. The aim is to provide an in-depth analysis of the programme from different perspectives (e.g. funding by section, thematic type of project) to better understand how the programme has developed over the last few years, the amount of funding provided to beneficiaries, and how it has benefited local communities.

Table 3-1: Number of projects and total funding by year

Year	Number of projects	Funding/EUR
2018		
Section 1	9	17,983,646
Section 2	26	26,844,208
Total	35	44,827,854
2019		
Section 1	18	27,462,283
Section 2	30	26,758,366
Total	48	54,220,649
2020		
Section 1	15	33,186,107
Section 2	31	30,772,167
Total	46	63,958,274
2021		
Section 1	11	31,952,722
Section 2	28	29,249,766
Total	39	61,202,488
Grand total	168	224,209,265

Source: 2018-2020 Annual Activity Reports and Input report to the interim evaluation

This table illustrates the number of projects by year and the allocated funding, broken down between Section 1 and Section 2 projects. Overall, there are 53 Section 1 projects (funded by the EU) and 115 Section 2 projects (funded by participant states through national funding agencies). However, although there are significantly more Section 2 projects, the difference in funding over the four years only amounts to EUR 2.9 million, demonstrating the financial impetus provided by the EU to support the socio-economic development of the Mediterranean area, bringing about benefits for local communities. Indeed, other than in the PRIMA programme's inception year, when Section 2 projects received around EUR 9 million more in funding, similar levels of funding have been allocated to projects in both Sections.

For example, in 2019, Section 1 and 2 projects received a similar funding amount (EUR 27.46 million in the case of Section 1 and 26.76 million for Section 2), while in 2020 and 2021, Section 1 projects received around EUR 2.6 million more on average, reflecting more limited follow-through on original funding commitments by some national funding agencies in 2021. Whilst this has been compensated through increased direct funding and in-kind funding contributions through Section 3 projects, it is important that participating states continue to fulfil their agreed funding commitments to ensure a

positive leverage effect from EU funding and that all Section 2 projects selected as successful project applicants can be funded (see section 4.3 on efficiency).

Funding for projects has increased each year, except for 2021, when there was a slight decrease (around EUR 2.4 million) in the funding made available. At the inception of the programme, EU funding was lower since the European Commission wanted to verify the funding capacity of Participating States before increasing its financial contribution. Fewer projects received funding in 2021 than in 2019 and 2020, while funding has remained stable. As such, the COVID-19 pandemic has not had a huge impact on the level of funding for PRIMA projects. Rather, the pandemic has influenced the timing of project implementation and the submission of deliverables in some instances.

Table 3-2: Number of projects and funding by thematic area

Year/ section	Thematic areas							
	Water management		Farming systems		Agri-food value chain		Nexus theme	
	No. of projects	Funding/ EUR	No. of projects	Funding/ EUR	No. of projects	Funding/ EUR	No. of projects	Funding/ EUR
2018								
Section 1	3	5,881,900	3	6,145,366	3	5,956,238	-	-
Section 2	9	9,483,000	12	12,572,901	5	5,382,750	-	-
Total	12	15,364,900	15	18,718,267	8	11,338,988		
2019								
Section 1	4	6,029,000	7	10,783,438	4	6,209,781	3	4,440,476
Section 2	6	5,400,235	13	11,610,433	11	10,036,370	-	-
Total	10	11,429,235	20	22,393,871	15	16,246,151	3	4,440,476
2020								
Section 1	4	9,454,506	5	10,065,916	4	7,854,753	2	5,848,000
Section 2	5	5,025,247	18	18,039,652	8	7,662,968	-	-
Total	9	14,479,753	23	28,105,568	12	15,517,721	2	5,848,000
2021								
Section 1	3	8,049,850	3	8,249,437	3	7,769,848	2	7,883,584.38
Section 2	3	3,350,898	20	21,261,710	5	4,460,359	-	-
Total	6	11,400,748	23	29,511,147	8	12,230,207	2	7,883,584.38
Grand total	37 (22%)	52,674,636 (23.4%)	81 (48.2%)	98,728,853 (43.9%)	43 (25.6%)	55,333,067 (24.6%)	7 (4.2%)	18,172,060 (8.1%)

Source: 2018-2020 Annual Activity Reports and 2022 Interim Evaluation

This table shows the number of projects and allocated funding by thematic area. There are four thematic areas: **water management**, which aims to secure water availability and to improve wastewater management; **farming systems**, which aims to improve the productivity, efficiency and sustainability of agricultural farming systems; **agri-food value chain**, which aims to foster innovative solutions to improve the efficiency and sustainability of agri-food production; and **Nexus**, which aims to deliver synergies across water, farming and agri-food, which are deeply interconnected, through support for inter-disciplinary research projects.

Farming systems is the thematic area with the most projects funded compared with other thematic areas. Cumulatively, across the four years of projects supported so far by theme, farming projects

account for 43.9% of the total projects and nearly EUR 100 million of funding, while the funding allocated to agri-food projects represents around a quarter (24.4%) of total funding, demonstrating the economic importance of these sectors to communities in the Mediterranean. A similar amount of funding was allocated to water management projects. While funding increased for farming sector projects each year, funding for water management and agri-food projects has varied depending on the sub-topics being covered in annual calls for proposals under these respective themes

The agri-food sector, which accounts for 43 projects in total (2018-2021), witnessed an initial increase in the number of projects funded, before falling to eight in 2021, the same number of projects which were funded in 2018. Although Nexus projects account for the smallest amount of funding across the thematic areas, funding per project has increased significantly since 2019 and in 2021 stood at nearly EUR 4 million per project. This demonstrates the importance of bringing together all three thematic areas to deliver innovative solutions to strengthen water and food security, and contribute to environmental protection and political security. It should be noted that Nexus was only introduced in 2019, therefore data relates to the 2019-2021 period.

Table 3-3: Section 1 projects by action type

Year	Water management			Farming systems			Agri-food value chain			Nexus theme		
	RIA	IA	CSA	RIA	IA	CSA	RIA	IA	CSA	RIA	IA	CSA
2018	3			3				3				
2019	4			3	4			4		2		1
2020		4		2	3			4			2	
2021	3				3			3			2	
Total	10	4		8	10			14		2	4	1
Grand total	53											

Source: Input report to the interim evaluation

This table illustrates the number of projects by type of action in Section 1. There are three types of action: Research and Innovation Actions (RIA), which are collaborative projects funding research activities relatively upstream of a commercial product and concern projects with a TRL of 3-5; Innovation Actions (IA), which have a TRL of 6-7 and support the quick delivery of innovative, easily transferable solutions across the thematic areas; and Coordination and Support Actions (CSA), which concern activities such as networking and knowledge exchange. All Section 2 projects are RIAs.

Overall, there are significantly more IAs (32) than RIAs (20). There is only one CSA, under Nexus. As such, over the last few years, PRIMA has used the EU financial contribution to mainly fund projects with higher TRLs which can quickly deliver innovative solutions to market to support water management, farming and agri-food across the Mediterranean. Agri-food accounts for the highest number of IAs, at 14 projects. A couple of examples, which can be found in the case studies, are SUREFISH and CAMELMILK.

The SUREFISH and CAMELMILK projects - Examples of agro-food projects

Fish is a key component of the Mediterranean diet and the **SUREFISH project (2020-2022)**, an Innovation Action, aims to enhance the traceability and ensure the authenticity of fish along the entire supply chain, using RFID, blockchain, TTI and tamper-proof technologies to prevent fraud. It serves as a good example of a project with ambitions to increase its TRL and secure market-readiness. SUREFISH aims to increase its TRL from 5 to 7 during the lifecycle of the project, and to

achieve TRL 9 one year after project completion. Three of the four pilots are already underway (in Tunisia, Egypt and Lebanon). A communication plan and technical documents, such as on analytical techniques to identify fraud in fisheries have been developed and made publicly available.

The **CAMELMILK project (2019-2022)** aims to promote the production, processing and consumption of camel milk and camel dairy products in the Mediterranean, supporting smallholders and SMEs. The project has also sought to facilitate the development of new export markets for camel milk and to overcome barriers to exporting. The project involves 14 partners, which includes research centres, universities and companies) from seven different countries in the Mediterranean basin. There is also a strong focus on market analysis to support the uptake of the products, for instance by determining consumers' acceptance, knowledge and willingness to consume/pay for camel milk products. This project demonstrates the increasing importance of diversifying dairy products in the region.

There are 10 IAs and eight RIAs under the farming systems thematic area, while there are 10 RIAs out of the 14 projects under the water management area. This perhaps signifies that the majority of projects are still at an early stage, have a lower TRL, and can benefit from funding for the development of new methods and technologies.

Another important dimension in the portfolio analysis is to review the types of research and innovation actors from across the Mediterranean area, as well as end-users that have taken part in the PRIMA programme through funded RIAs and IAs to date. Among the issues of interest include the extent to which PRIMA has been successful in attracting a balanced combination of public and private sector R&I actors to apply and to participate in funded projects. Furthermore, the question of how successful PRIMA has been in engaging with broader stakeholders is also a central evaluation issue.

In the following table, an overview of the type of participants taking part in PRIMA by year and by section is provided.

Table 3-4: Number of beneficiaries

Year/section	Total	Higher education establishments	Research organisations	Public body	Private for-profit organisations	Other
2018						
Section 1		28	21	6	41	7
Section 2		102	80	6	21	6
Total	318	130	101	12	62	13
2019						
Section 1		48	37	8	45	31
Section 2		116	83	6	33	10
Total	417	164	120	14	78	41
2020						
Section 1		59	52	5	50	17
Section 2		120	86	6	41	15
Total	451	179	138	11	91	32
2021						
Section 1		39	34	11	40	26
Section 2		137	60	3	26	9
Total	385	176	94	14	66	35
Grand total	1571	649 (41.3%)	453 (28.8%)	51 (3.2%)	297 (18.9%)	121 (7.7%)

Source: *Input report to the interim evaluation*

As can be seen from the above table, higher education establishments account for the highest number of beneficiaries in the PRIMA programme. This category includes universities, institutes, laboratories and research councils, and accounts for 41.3% of all beneficiaries. This is unsurprising, given the role these entities play within the Mediterranean ecosystem and their role in delivering innovative solutions for water management, farming and agri-food at all stages of the projects. They are heavily involved in research and product development, and also play a role in coordination. Another reason for their heavy involvement could perhaps be their reliance on public funding to develop projects, whereas private companies may either fund their own research or seek private investment.

Additionally, given the nature of the projects, which cover water management, farming and agri-food, it is to be expected that research organisations will be actively involved as these areas are of strong research, economic and employment importance to communities in the Mediterranean. Research organisations include research centres, centres of excellence and academies, play a similar role and account for nearly 30% (28.8%) of the entities. Well-known examples include Fraunhofer Gesellschaft and the Luxembourg Institute of Science and Technology.

The remaining entities fall under the following categories: public bodies; private for-profit organisations; and other. These account for nearly 30% (29.8%) of all entities. SMEs and enterprises can be the end-users of the solutions and their involvement in PRIMA projects is encouraged given the importance placed on them in boosting the regional economy. SMEs can also be project coordinators. One example is Enco Consulting, which coordinates the SUREFISH project, ensuring networking and knowledge transfer between the partner countries in a business-driven approach to enhancing traceability and combatting fraud within the fish supply chain.

Table 3-5: Average value and number of beneficiaries per project

	2018		2019		2020		2021	
	S1	S2	S1	S2	S1	S2	S1	S2
No. of projects	9	26	18	30	15	31	11	28
No. of beneficiaries	103	214	169	248	183	266	149	239
Overall budget (EUR)	18M	26.8M	27.5M	26.8M	33.2M	30.8M	32M	29.2M
Average beneficiaries/project	11	8	9	8	12	8	13	8
Average value/project (EUR)	2M	1M	1.5M	0.9M	2.2M	1M	2.9M	1M

Source: *Input report to the interim evaluation*

This table illustrates the average value per project by year and sector, as well as the average number of beneficiaries. Overall, the average value is higher for Section 1 projects than Section 2 projects. This is to be expected, considering that, while there are significantly fewer Section 1 projects (53 compared with 115 Section 2 projects), the amount of funding allocated to Section 1 and Section 2 is relatively similar. However, this demonstrates the significant funding provided by the EU for Section 1 projects to develop the Mediterranean region and bridge the economic gap between EU and non-EU PRIMA members. Other than 2019, when there was a decrease in the average value per Section 1 project, the value has increased from EUR 2 million to EUR 2.9 million. The average value per Section 2 project has remained steady. However, these figures are relative to the overall budget allocated to projects.

There were found to be, on average, more beneficiaries per Section 1 project than Section 2 projects. Between 2018 and 2021, there was an average of 11 beneficiaries per Section 1 project, while that figure was eight for Section 2 projects. Both of these figures demonstrate the appeal of PRIMA projects to a wide range of stakeholders who are looking to deliver innovative solutions across sectors of high economic importance to countries in the Mediterranean region.

Table 3-6: Geographic distribution of projects (2018-2021)

Country	Number of projects	Number of beneficiaries
EU Members		
Croatia	10	18
Cyprus	14	20
France	89	144
Germany	54	67
Greece	69	116
Italy	129	273
Luxembourg	2	2
Malta	7	9
Portugal	51	83
Slovenia	9	12
Spain	120	230
Total	554 (57.4%)	974 (61.9%)
Non-EU Members		
Algeria	62	85
Egypt	56	75
Israel	12	16
Jordan	17	21
Lebanon	31	40
Morocco	71	118
Tunisia	103	155
Turkey	59	89
Total	411 (42.6%)	599 (38.1%)

Source: PRIMA Intelligent Analytical Tool 2018-2021

The table above illustrates the number of projects in which beneficiaries from different PRIMA participant states were involved, with the data shown disaggregated between EU Member States and participant states from outside the EU. As of the end of 2021, EU entities have been involved in 554 projects with 974 beneficiaries, while non-EU members participate in 411 projects with 599 beneficiaries. The data shows that non-EU entities participated in 42.5% of all projects and accounted for 38.1% of all beneficiaries. Given the importance of strengthening participation from southern Mediterranean countries outside the EU as a means of raising critical research mass with a view to facilitating access to participate in transnational research funding programmes in future, especially the RTD Framework Programmes beyond PRIMA (e.g. other H2020 and Horizon Europe funding opportunities), this can be considered a success.

Overall, the degree of involvement of participation differs by Member State. Italian and Spanish entities, for example, are involved in 249 projects, accounting for 44.9% of participant states' involvement from among EU-27 MS. Given the relative sizes of these countries and the strategic importance of the Mediterranean to their socio-economic development, this is perhaps unsurprising, however, this figure demonstrates their strong engagement in the PRIMA programme. Both countries have been impacted heavily not only by the financial crisis of 2008 but also COVID-19, thus the PRIMA programme is considered as an incentive to further boost economic development and bring about benefits for communities in the water management, farming and food sectors.

Additionally, this figure should be considered in the context of their geographical location. Both countries lie on the Mediterranean Sea and are in close proximity to countries in North Africa, several

of which are participant states (e.g. Egypt, Algeria, Tunisia). As such, there is enhanced scope for cooperation and delivering innovative solutions which can benefit communities on both sides of the Sea. Greece and Portugal are also actively involved in PRIMA projects and, like Italy and Spain, are in close proximity to countries in North Africa and the Middle East. Between them, they account for around a fifth (21.7%) of EU beneficiaries. Germany and France meanwhile, traditionally the economic powerhouses of Europe, are involved in a quarter (25.8%) of the projects which EU members participate in.

Of the non-EU members of the PRIMA programme, Tunisian entities account for around a quarter (25.1%) of the projects and there are 155 beneficiaries, significantly more than any other country in this group. Nearly half of all the projects are in the farming sector (48.2%) and around a quarter (25.6%) are in the agri-food sector, which is unsurprising, considering that agriculture accounts for around 10% of the national economy. One example is the SUSTAINOLIVE project, which aims to improve the sustainability of the olive oil sector through innovative sustainable management solutions and the exchange of knowledge. Another example is SUREFISH, which aims to ensure the traceability and authenticity of fish along the entire supply chain. Further details on both can be found in the case studies.

Turkish and Egyptian entities are involved in relatively fewer projects compared to their comparative populations but still account for nearly 30% (27.4%) of projects. Although the non-EU members of the PRIMA programme are involved in 411 projects, there are around 40% (38.5%) fewer beneficiaries than among participant states from EU Member States. There is a significant difference of about 25% (25.8%) in the number of project involvements but could perhaps be explained by the relative economic performance, national funding rules and issues around critical research mass and level of scientific excellence to be able to compete in the PRIMA programme, which like H2020 was highly competitive. The interview feedback suggests that the PRIMA programme has certainly been making good progress towards delivering on its objectives of achieving the necessary critical mass of actors and resources and strengthening R&I capacities on both sides of the Mediterranean Sea.

Participant States Initiated Activities, PSIAs. As noted in the AAR 2020, PRIMA PS implements and funds an array of national activities that contribute to the PRIMA Programme's objectives. This consist of the following types of activities:

- National research programmes implemented, managed and funded by the PS: referred to as "Participant States Initiated Activities" or PSIAs;
- Activities supporting programme operation funded and implemented by PS also referred to as "Other Activities".

During the 2018-2021 period, PS invested EUR 73,424,888 in 13 PSIAs. The following table demonstrates the breakdown in funding by PS.

Table 3-7: Amounts disbursed to PSIAs by NFA/country

NFA/Country	Disbursed amounts/EUR
CDTI/Spain	56,501,371
AEI/Spain	13,727,437
ANR/France	2,539,998
IIA/Israel	154,500
ISERD/Israel	400,000
BMBF/Germany	101,582
Total	73,424,888

Source: Input report to the interim evaluation

The vast majority of funding has been disbursed by Spanish organisations (EUR 70,228,808), accounting for 95.6%. These funds have been distributed to projects across all thematic areas, across all years and further demonstrate the country's commitment to the PRIMA programme (Spanish entities participate in the second highest number of Section 1 and 2 projects). Although only four PS have disbursed funds for PSiAs, the overall amount demonstrates the importance of PRIMA projects outside Sections 1 and 2.

3.4 The monitoring and evaluation function

3.4.1.1 Monitoring and evaluation function of PRIMA

Monitoring and evaluation is at the core of any performance assessment and provides useful feedback to improve the design and operation of the programme. The monitoring function has played a key role since PRIMA was first launched. Monitoring activities have been undertaken both in relation to the PRIMA programme overall (e.g. financial data across section 1 section and section 2 projects and section 3 activities and at a thematic level -see portfolio analysis in Section 3.3) and in keeping track of the achievements across the project portfolio overall.

As set out in Art 19 of the Delegation Agreement, PRIMA Secretariat monitors the alignment of the objectives and content of the individual Participating States Initiated Activities' (PSiAs) with those of PRIMA, and that the labelling requirement of all communications have been fulfilled. It does so by reviewing the technical reports provided by the PSs during the reporting period¹⁷, also included in the Annual Activity Reports. Indeed, PSs are requested to annually submit their PSiAs to the PRIMA Secretariat as part of Section 3 Activities included in the Annual Work Plans, demonstrating how much they support activities in the scope of PRIMA. The PRIMA Secretariat also monitors the eligibility of PSiAs as an in-kind contribution to the Programme through the scrutiny of an external panel of evaluators. The EC's acceptance of the European PSiAs as an in-kind contribution to the PRIMA programme according to the Delegation Agreement is dependent upon its approval of a technical and financial report submitted by the PSs.

Monitoring and evaluation is a mandatory requirement for all projects. Projects have to report on key achievements, for instance in their interim and final project reports. In addition, the PRIMA Secretariat also engages in periodic data collection to gather data on project achievements against the set of 20 Key Performance Indicators (KPIs) selected to keep track of project-level performance (not all KPIs are relevant to all projects).

At present, the PRIMA programme is still in the relatively early stages of its implementation, with 129 projects underway and a further series of projects selected in the 2021 call due to start shortly. Many projects only started within the past 12 – 24 months, and relatively few have yet been completed given the three-year duration of projects. This means that although some monitoring data is available, there are inherent evaluability constraints in terms of the scientific achievements and research results to date for many but not all projects. Where relevant, the evaluation therefore also considers the expected results, not only the results achieved to date (see Annex 4 – case studies).

The efficiency, effectiveness and relevance of the Key Performance Indicators (KPIs) developed by the PRIMA Secretariat progressively over time are examined in Section 4.3.4 (monitoring and indicators – findings).

¹⁷ In line with the overall Horizon 2020 project monitoring process, all PRIMA projects foresee reporting periods with a typical duration of 12-18 months. Throughout the project's lifetime, projects consortia are expected to perform 'continuous reporting' activities, such as submitting project deliverables following the timing described in their Grant Agreements.

3.4.1.2 Role of the Monitoring and Learning Platform (MEL)

Since 2019, the **Monitoring and Learning Platform (MEL)** has played an important role in facilitating programme monitoring. The MEL is described as “an integrated and adaptable online platform for projects, activities and knowledge management”. The MEL helps to provide a centralised managerial platform and tool to assist in carrying out international coordination across countries, funding agencies and beneficiaries. It is also used for administration and knowledge management purposes.

The MEL allows for the real-time collection of online monitoring data both in relation to the programme and project levels. This was deemed to be efficient in that it provides the necessary data to assess the progress being made by PRIMA towards achievement of its general, specific and operational objectives. The day-to-day monitoring phase became fully operational at the end of 2019 and will run until 2028.

Data and information can either be uploaded by project beneficiaries themselves, and/ or by the PRIMA Secretariat and PS. The MEL allows for project coordinators to efficiently input and correct data. The data is then aggregated via the platform, and is made available to users interested in the monitoring data with searchable filters such that users can search for many different variables of interest (e.g. the year of a project, thematic area, countries involved, funding amounts, any publications or research outputs, key deliverables produced so far). This relational database approach was assessed by the evaluation team as being efficient and effective as extensive data across many different variables is available.

3.4.1.3 PRIMA programme indicators

This sub-section provides a review of the KPIs selected by the PRIMA Secretariat for the monitoring framework and indicator system.

Initially when PRIMA was set up and began its operations in 2018, there was no programme level set of monitoring indicators and KPIs. However, over time, work has been undertaken to develop a suitable set of indicators. An initial set of performance indicators relating to outputs, outcomes (results) and impacts was developed to facilitate project monitoring and these indicators were integrated into the MEL for project beneficiaries to provide data on. Examples of such indicators were the number of publications and indicators relating to international cooperation.

2020 monitoring and indicator framework

A scoreboard of PRIMA indicators was developed based on the indicators used for Horizon 2020 As many projects are now well underway, and attention is turning to the interim evaluation and beyond, the PRIMA Secretariat has developed two further sets of indicators:

- A set of **strategic KPIs** linked to the specific objectives.
- A set of detailed **operational KPIs** relating to project-level achievements, which is quite focused on thematic-level achievements.

The proposed indicators are now presented in the following two tables, supported by an assessment of their appropriateness and relevance to the PRIMA programme’s objectives. Several aspects can be considered when reviewing and making a final selection of indicators from among the PRIMA longlist based on the type of information they would provide, its relevance and value to PRIMA monitoring (as well as informing future evaluation activities). These include:

- The type of indicator – whether it measures outputs, outcomes or impacts.
- The type of indicator in terms of whether it assesses progress towards thematic priorities (e.g. farming systems, agro-foods and water management) or whether it assess progress towards PRIMA’s general and specific objectives.

- Whether the indicator is qualitative or quantitative.
- The scope for aggregation across the programme as a whole (some indicators are highly specific and relevant in particular thematic area but can't be aggregated).
- Usefulness of the indicators in informing future evaluations e.g. contribution to either assessment or measurement of efficiency, effectiveness, relevance and impact.

Regarding good practices in indicator development, it is important that the 'SMART' criteria and 'RACER' principles as stressed in the EU's Better Regulation Toolbox are considered.

- The **SMART criteria** are: Specific, Measurable, Achievable/ attributable, Relevant, and Timely, time-bound and trackable; and
- The **RACER principles** are: Relevant, Accepted, Credible, Easy and Robust.

In terms of the implications of these criteria and principles for PRIMA:

- How can the SMART and RACER criteria be applied to the selection of indicators in the PRIMA programme?
- How can it be ensured that the indicators are accepted by PRIMA stakeholders e.g. participant states, project beneficiaries, regional stakeholders, the European Commission etc.?
- Are the project-specific indicators acceptable to the PRIMA lead project coordinators?
- Are data sources available to support the proposed new indicators? For instance, can the data collected be aggregated at the programme level, or are some indicators only suitable for specific types of projects?
- Is the proposed reporting frequency realistic?
- Is the number of detailed operational KPIs (21) appropriate or too burdensome for project leaders?
- How can alignment with indicators selected between the PRIMA programme indicators and other relevant programmes, especially the Horizon Europe indicators and those tailored to the new European Partnerships (of which PRIMA is now also such a Partnership)?

Table 3-7 - Suggested KPIs linked to the specific objectives of PRIMA

Specific Objectives	Suggested KPIs	Questions	Rationale/ commentary
<p>1 – Alignment of national R&I programmes and procedures</p> <p>‘Directionality’</p>	<ul style="list-style-type: none"> The number of PSIAs aligned with PRIMA programme The number of aligned national procedures Overall (public and private, in-kind and cash) /Additional investments mobilised towards EU priorities 	<ul style="list-style-type: none"> <i>What is the extent of alignment of national R&I programmes and procedures?</i> <i>To what extent has PRIMA contributed to increasing alignment?</i> <i>What has the leverage effect been (in kind and in cash) to date?</i> 	<ul style="list-style-type: none"> Alignment is a key objective mentioned in the SRIA, an assessment will need to combine qualitative and quantitative considerations. Issues with limited alignment in national processes for S2 (e.g. financial rules) point at the relevance to track the extent of alignment. S3 allows for limited monitoring as managed and implemented directly by the PS; monitoring PSIAs will require data collection/ reporting from PS
<p>2 – The critical mass of actors and resources</p> <p>‘Additionality’</p>	<p>Actors involved</p> <ul style="list-style-type: none"> The number of teams from public sector The number of teams from private sector <i>The number of researchers from public/private sector; public/private sector composition of a team in %</i> The number and types of organisations and countries most represented in the partnership (members) Evolution of memberships of countries and associations (no. and types of activities, cash and in-kind contributions) <p>Resources</p> <ul style="list-style-type: none"> Leverage of funds <i>% increase in funds leveraged from previous year</i> 	<ul style="list-style-type: none"> <i>What is the level/ share of contributions compared to initial commitments?</i> <i>What is the additional private and/or public R&I investments mobilised as a result of joint investment on EU priorities (leverage effect resulting from the Union intervention)?</i> <i>How do Partnerships facilitate the creation and expansion of R&I networks that bring together relevant and competent actors from across Europe, thus contributing to the realisation of the ERA</i> <i>Measures ensuring information to SMEs and promotion of their participation (notably for partnerships with industry participants).</i> 	<ul style="list-style-type: none"> Balance between KPIs on resources and researchers seems appropriate, additional level of granularity is likely to be available and add insights. A balance between indicators assessing the current situation and indicators looking at the evolution e.g. in number and types of activities would provide relevant insights regarding the overall evolution of PRIMA. Additional indicators covering coherence and synergies and international visibility and positioning are considered appropriate for the broader evaluation of PRIMA. This would however require a combination of quantitative and qualitative indicators (see new suggested indicators in italics). Visibility of PRIMA overall as well as visibility of partnerships in national, European, international policy/industry cycles provides

Specific Objectives	Suggested KPIs	Questions	Rationale/ commentary
	<ul style="list-style-type: none"> • <i>Financial and in-kind contribution as % of GDP/ as % of total national R&I investment/ per capita</i> • [direct leverage] Financial (€) and in-kind contributions, committed and actual <p>Coherence and synergies</p> <ul style="list-style-type: none"> • The number and type of coordinated and joint activities with other R&I Initiatives at EU /national/regional/sectorial level • Description of e.g., consequent calls in national programmes, capacity building or upscaling/exploitation actions at national / regional / sectorial level, etc <p>International visibility and positioning (quantitative)</p> <ul style="list-style-type: none"> • The number and type of dissemination activities of the partnership as a whole (passive and active communication channels) • <i>The number of collaborative relationships with regional and international partners.</i> • <i>The number of policy exchanges and events with regional and international partners in which PRIMA participates.</i> • <i>The number of platforms, task forces and other regional and international initiatives in which PRIMA participates.</i> • <i>The number of social media mentions of PRIMA by regional and international partners.</i> <p>International visibility and positioning</p>		<p>interesting insights on its ability and potential to disseminate knowledge across the Mediterranean region.</p> <ul style="list-style-type: none"> • Data collected needs to be normalised to account for the national differences and baselines.

Specific Objectives	Suggested KPIs	Questions	Rationale/ commentary
	<p>(qualitative)</p> <p>Examples of such indicators might be:</p> <ul style="list-style-type: none"> • <i>Intensity of collaborative relationships with regional and international partners.</i> • <i>External perceptions of PRIMA among regional and international partners (including any changes over time).</i> • <i>Added value of collaborative relationships between PRIMA and regional and international partners (generally, and in respect of specific initiatives, such as stakeholder platforms, policy fora).</i> • <i>Contribution of PRIMA to the Horizon Europe missions in specific thematic areas (e.g. water, soil).</i> 		
3 – Strengthening innovation capabilities-Cooperation	<ul style="list-style-type: none"> • <u>Publications</u> – Number of peer-reviewed scientific publications • <u>Skills</u> enhancement – Number of researchers involved in upskilling (training, mentoring/coaching, mobility and access to R&I infrastructures) activities in projects • <u>Sharing of knowledge</u> – share of research outputs (open data/publication/software etc.) resulting from the Programme shared through open knowledge infrastructures • Transnational cooperation: Number of new collaborations • <u>Strengthening innovation</u>: Number of projects reporting having delivered 	<ul style="list-style-type: none"> • <i>What is the level of openness in use of research result?</i> • <i>Are there open and transparent processes for consulting all relevant stakeholders and constituent entities in the identification of priorities?</i> • <i>Are there procedures / mechanisms in place to expand the partnership to involve new members at partnership and project level, as well as gradually engage a broader set of stakeholders across Europe?</i> • <i>Knowledge transfer and learning, which supports capacity development</i> 	<ul style="list-style-type: none"> • Level of innovation capabilities is challenging to measure, as reflected by the suggestion to track publications, skills and knowledge sharing. Looking at several dimensions is relevant to capture progress, as innovation can manifest in different ways. • Additional dimensions could include technology readiness, the degree of commercialisation of project-related products, and the level of environmental/ societal innovation.

Specific Objectives	Suggested KPIs	Questions	Rationale/ commentary
	innovative solutions/ an increase in TRL <ul style="list-style-type: none"> Number of full time equivalent (FTE) jobs created within projects 	<i>of less developed ones</i> <ul style="list-style-type: none"> <i>Shared resources and platforms facilitating the development of structures and solutions</i> 	

Source: Many of the KPIs were suggested by the PRIMA Secretariat and a commentary by the evaluation team on the rationale and suitability of the indicators is provided in the fourth column. Suggested new indicators by the evaluation team are in the second column and italicised.

In the table below, a set of 21 KPIs which were considered to be relevant across the different thematic areas being supported. In the first column, the relevance of the proposed KPI to the PRIMA thematic priorities is considered, and in the final column, any comments are provided on the rationale.

Table 3-8 – List of 21 KPIs developed by PRIMA for monitoring operational objectives and for thematic-level achievements.

Relevance of indicator to thematic priorities and/ or to interdisciplinarity	KPIs 1-21	Rationale / commentary (if any)
Relevant to all themes	1 - Developed/ Improved Solutions	<ul style="list-style-type: none"> Innovative solutions are a key objective of PRIMA so worth measuring. Qualitative case studies are important to help interpret monitoring data as the number of solutions developed is indicative and not meaningful in itself without further interpretation.
Relevant to all themes	2 - Living Labs	<ul style="list-style-type: none"> No comments
Relevant to all themes	3 - Demonstration Sites (TRL 7 or higher)	<ul style="list-style-type: none"> Demonstration sites are crucial for projects with higher TRLs, and for assessing how far PRIMA has advanced the TRL levels during projects.
Relevant to all themes	4 - Regional platform, hubs	<ul style="list-style-type: none"> The role of PRIMA as a new R&I programme in working through regional platforms, sectoral clusters etc. is relevant when assessing partnership working, networking building etc. through the programme. Could help to facilitate network analysis.
Relevant to all themes	5 - Stakeholders and end-users	<ul style="list-style-type: none"> The involvement of a broad range of stakeholders is important to strengthen the visibility of PRIMA, to develop R&I capacity and to ensure engagement with end-users to encourage the uptake of research results. Therefore, this indicator could inform several aspects of the assessment of PRIMA's performance.
Relevant to all themes	6 – Researchers engaged	<ul style="list-style-type: none"> Engaging with as wide a spectrum of researchers in the Mediterranean as possible, but especially young researchers, is of vital importance. This could help to strengthen R&I capacities by improving human resource quality of researchers and young researchers, preventing brain drain in widening countries, such as in the southern PS.

Relevance of indicator to thematic priorities and/ or to interdisciplinarity	KPIs 1-21	Rationale / commentary (if any)
Relevant to all themes	7 - Jobs created (FTE)	<ul style="list-style-type: none"> • Job creation is an important feature of many EU programmes. • However, it is not usually measured in R&I programmes, although jobs may be created either at the end of a project or after the project has been completed if research results are transferred to society and/ or commercialised. • Difficult in a R&I programme to track as most jobs created happen after the project has been completed implying monitoring burden. • However, this has been proposed by Horizon Europe as a possible indicator (both jobs created and maintained). However, the feasibility of monitoring this and whether jobs can realistically be created during a project is questionable.
Relevant to all themes	8 - Micro and small and medium-sized firms (MSMEs) created	<ul style="list-style-type: none"> • Micro and small SMEs are vital to the Mediterranean economy, and to the specific sectors being supported (e.g. smallholders under agro-foods, farming systems). • As such, the extent to which new firms are being created could be useful to examine. However, again, as with jobs, these will tend to materialise towards the end of projects or often afterwards e.g. through spin-offs, take-up of research results. Difficult to measure and resources required for post project follow-up surveys.
Relevant to all themes	9 - Technical or operational guideline/ manuals	<ul style="list-style-type: none"> • There are likely to be many deliverables during projects. Perhaps Technical or operational guideline/ manuals are more likely to be useful to other follow-up and future projects funded to ensure incremental use of results. • However, the number of manuals in itself won't show much without qualitative assessment through evaluation. Example – Camelmilk project (see case study) developed a manual to assess regulatory challenges to exporting foodstuffs to Europe, which has a practical use in ensuring that future projects are aware about export barriers and regulatory differences. • Some kind of mapping of such manuals with the titles and abstracts about what the manual contains would be the most useful form of monitoring data to ensure these are used and to avoid risk of duplication in future projects.

Relevance of indicator to thematic priorities and/ or to interdisciplinarity	KPIs 1-21	Rationale / commentary (if any)
Relevant to all themes	10 - Publications and outreach	<ul style="list-style-type: none"> No. of publications is a highly relevant indicator. This can help in strengthening the visibility of PRIMA projects. Possibly the number of citations of publications PRIMA funded projects could be included too (however, proportionality issue in no. of indicators). Publications may be available at different points in the project.
Relevant to all themes	11 - Communication & capacity building actions	<ul style="list-style-type: none"> Capacity-building is an important aim of PRIMA. Such activities should be monitored. Given the need to strengthen visibility, communication activities are also important.
Interdisciplinary / relevant to all themes	12 - SDGs addressed	<ul style="list-style-type: none"> The no. of SDGs contributed to should be monitored as these relate to programme objectives and project level activities.
Water management	13 - Non-Conventional Water Resources (NCWR)	<ul style="list-style-type: none"> Thematic-specific indicators are now considered. Water management indicators appear appropriate
Water management	14 - Innovative irrigation solutions applied	<ul style="list-style-type: none"> Water management indicators appear appropriate
Agri-food	15 - Agroecological Principles	<ul style="list-style-type: none"> Appropriate to assessing sustainability in agro-foods
Interdisciplinarity, sustainability	16 - % Decrease of Chemical Inputs	<ul style="list-style-type: none"> Appropriate to assessing Interdisciplinarity and sustainability
Farming systems	17 - Local breeds improved and / or conserved	<ul style="list-style-type: none"> Appropriate to assessing sustainability in farming systems
Farming systems	18 - New varieties/ hybrids	<ul style="list-style-type: none"> Appropriate to assessing sustainability in farming systems
Farming systems and agro-foods	19 New Healthy Mediterranean diet	<ul style="list-style-type: none"> Appropriate to assessing sustainability in farming systems and agro-foods
Farming systems and agro-foods	20 % Agrofood Waste Reduction & Valorisation	<ul style="list-style-type: none"> Appropriate to assessing sustainability in farming systems and agro-foods
Interdisciplinary	21- WEFE solutions (water, food, energy and ecosystems)	<ul style="list-style-type: none"> Appropriate to assessing Interdisciplinarity and sustainability

Source: Evaluation team judgement (third column) based on PRIMA KPIs and internal documentation

Across the portfolio of projects, the main observations are that some KPIs would be relevant to all projects, and are cross-cutting, whereas others are thematic-specific indicators relevant to the projects across different domains e.g., agri-food and farming systems, water management. This approach of having more specific indicators able to contribute to specific and operational objectives in particular areas of PRIMA is sensible. It is important to be able to assess progress in the main thematic areas in which PRIMA supports R&I projects in more detail as this will be essential for future evaluations.

3.4.1.4 Aligning the PRIMA monitoring framework with Horizon Europe indicators

The European Commission's Performance Framework for Horizon Europe builds on previous learnings from e.g. Horizon 2020 and outlines indicators in line with EU priorities. As such, the focus is to measure innovation in three dimensions: scientific impact, technological/ economic impact and societal impact¹⁸. In addition, it includes indicators capturing open science or widening participation, as well as synergies with other EU programmes and policies.

Some of these indicators could serve as inspiration and be used for the evaluation of the PRIMA programme. Although not all indicators included in the Horizon Europe framework are equally relevant for PRIMA, many could be appropriate. For example, under 'scientific impact', indicators tackle skills, knowledge sharing and diffusion and new collaborations, key goals of PRIMA. Under 'technological/ economic impact', on the other hand, the focus on innovative results, innovations and employment created is in line with PRIMA's objective, however the co-investment and contribution towards the 3% target would not be as insightful in the PRIMA context. Although PRIMA tracks its leverage effect to attract and multiply funding, this does not follow the 3% target set by the European Union. As for 'societal impacts', indicators for Horizon Europe address e.g. R&I mission outcomes or solutions towards the EU's policy priorities. Although these are also closely related to those of PRIMA, they would not fully capture the main contribution of PRIMA towards its thematic areas like water and farming, a stronger focus for the Mediterranean area than for the EU as a whole. In addition, the co-creation element in Horizon Europe refers to citizens and end-user involvement whereas in PRIMA the co-creation refers to partners from both side of the Mediterranean.

PRIMA has also stressed the importance in its indicator system of engaging with end-users, as being key to its longer-term success, not only through engagement, capacity-building and forging critical mass with research and innovation actors.

¹⁸https://ec.europa.eu/info/sites/default/files/about_the_european_commission/eu_budget/programme_and_performance_-_horizon_1.pdf

Table 3-9 Selected indicators from the Horizon Europe framework

Type of impact	Relevant indicators	Relevance for the PRIMA programme
Scientific impact	<ul style="list-style-type: none"> • Publications - Number of peer-reviewed scientific publications • Skills - Number of researchers involved in upskilling (training, mentoring/coaching, mobility and access to R&I infrastructures) activities in projects • Careers - Number of upskilled researchers with increased individual impact in their R&I field • Sharing and dissemination of knowledge and research results - share of research outputs (open data/publication/software etc.) resulting from the Programme shared through open access/ open data knowledge infrastructures • New collaborations - Number of upskilled researchers involved in the Programme with improved working conditions, including researchers' salaries 	<ul style="list-style-type: none"> • Scientific impact and the innovation dimensions are at the core of PRIMA. • Publications - relevant in most EU / part-EU funded R&I programmes • Skills and careers related indicators are relevant to PRIMA's goal of the strengthening of capacities. • Open science and open data are increasingly important in transnational research programmes e.g. HE but others too, and could be measured (MEL was designed to be open access). • Collaborative research could also be monitored as relevant to PRIMA funded transnational research projects.
Technological/ economic impact	<ul style="list-style-type: none"> • Innovative results - Number of innovative products, processes or methods resulting from the Programme (by type of innovation) & Intellectual Property Rights (IPR) applications • Innovations - Number of innovations resulting from the projects (by type of innovation) including from awarded IPRs from FP projects (by type of innovation) including from awarded IPRs • Economic growth - Creation, growth & market shares of companies having developed innovations in the Programme • Supported employment - Number of full time equivalent (FTE) jobs created, and jobs maintained in participating legal entities for the project funded 	<ul style="list-style-type: none"> • Innovative products and solutions are part of the core objectives of PRIMA and also relevant in HE. • As noted in previous table, question of how realistic job creation and retention is during projects other than monitoring those researchers and administrative staff directly involved in projects. • Economic growth of partners involved would be partly relevant, as many partners are universities and public research organisations.

Type of impact	Relevant indicators	Relevance for the PRIMA programme
Societal impact	<ul style="list-style-type: none"> • <i>Outputs – number and type of end-users taking part in PRIMA projects (disaggregated by theme)</i> • Results - Number and share of results aimed at addressing EU policy priorities identified (e.g. the EGD) and global challenges (including the SDGs) (multidimensional: for each identified thematic priority) • Number and share of climate-relevant results aimed at delivering on the European Green Deal. <p>Societal R&I uptake indicators:</p> <p><u>Outputs</u></p> <ul style="list-style-type: none"> • Number of outreach activities • Number of innovative solutions/ products/ services developed <p><u>Results</u></p> <ul style="list-style-type: none"> • Uptake of innovative solutions/ products/ services by end-users • Uptake of other co-created scientific and research results by end-users • 	<ul style="list-style-type: none"> • • Monitoring end-user engagement by type in PRIMA projects is key. Whereas some projects may have commercial potential, others could if take up by end-users have positive societal impacts. • The % of research results that address key EU priorities e.g. the SDGs, the Green Deal, common agricultural policies, digitalisation are useful to assess contribution of PRIMA to HE and broader EU policies. • Uptake and outreach to society of research results and solutions is important (whereas in H2020 and earlier FPs, only a stress on commercialisation was placed). • Knowledge transfer to society could also be considered. • Suggest splitting the societal R&I uptake-related indicators into separate indicators. • Differentiate between outputs and results.

Source: Elaborated by the evaluation team based on indicators included in the Horizon Europe Programme

An additional consideration for the most appropriate selection of indicators is around data availability across countries and sources. With Horizon Europe indicators relying to a large extent on the European Commission collecting the data and other European-wide sources, coverage of non-EU countries would need to be ensured so as to also guarantee relevance for the PRIMA context. This would apply both for already existing indicators as well as new ones included under the Horizon Europe framework. Some of these are expected to become available only in 2026 (e.g., Number of upskilled researchers with increased individual impact in their R&I field) or in 2028 (e.g., Number of upskilled researchers involved in the Programme with improved working conditions, including researchers' salaries)¹⁹, which would possibly come in time for the final evaluation of PRIMA but not for its regular monitoring and evaluation efforts.

3.4.1.5 Monitoring of PSiAs under Section 3

Under Section 3 of the PRIMA programme, monitoring of PSiAs (funded by the Participating States without Union's financial contribution in the PRIMA work plans) is carried out by the PRIMA Secretariat, as set out in Art 19 of the Delegation Agreement (see section 3.4). This includes the alignment of objectives and the co-labelling as a PRIMA activity in dissemination materials.

¹⁹https://ec.europa.eu/info/sites/default/files/about_the_european_commission/eu_budget/programme_and_performance_-_horizon_1.pdf

As PSIAs are implemented by PS and funded by the respective National Funding Agency, monitoring information is not readily available to the PRIMA Secretariat as is the case for section 1 and section 2 projects, and needs to be provided by the PS on a regular basis. Furthermore, there is sometimes a time lag between the call and the selection of projects (e.g. the section 3 call launched in 2018 had some projects selected in 2020). This means that many of the projects selected under the PSIAs included in AWP 2018 and AWP 2019 were still in their relatively early stages, as the average duration of a PSIAs project is three years. This limits their evaluability at interim evaluation stage, although some initial monitoring was performed at the programme level in relation to the co-labelling requirement included in their websites. However, monitoring at the project level was postponed to a later stage of the project lifecycle. Additional efforts were conducted by the PRIMA Secretariat during the reporting time and more recently, in May 2020, to assess the extent of co-labelling compliance.

Despite data limitations given the early stages of the PSIAs, some evidence is available pointing to a high level of compliance by PS with the co-labelling requirements. For example, as reported in the PRIMA 2019 Annual Activity Report, out of 23 projects checked, 22 were in line with the PRIMA objectives and had successfully included the co-labelling requirements. As the projects advance further, a more detailed assessment of the contribution of PSIA's under Section 3 to PRIMA's overall to performance could be undertaken. This could be done separately or in the Annual Activity Reports (AARs) with section 1 and 2, and would require a close coordination with Funding Agencies to maximise data availability.

In addition, the monitoring framework implemented for PSIAs is considered to be proportionate and in line with the monitoring requirements for the PRIMA programme overall (e.g. Section 1 and 2 projects).

As for "Other activities" under Section 3, besides the PRIMA Secretariat, the involvement of external experts to verify if the requirements for their eligibility are respected adds a further level of scrutiny to ensure the highest quality standards and alignment with the PRIMA objectives.

4. Key findings

This section presents the key findings derived from the data collection and subsequent analysis. It is structured according to the evaluation criteria considered by the study – Relevance, Effectiveness, Efficiency, Coherence and Added value.

4.1 Relevance

The research questions under the Relevance criterion were concerned with several aspects. Firstly, they explored PRIMA's appropriateness in supporting **EU policy objectives** such as the ERA (the European Research Area) and the European Green Deal, and in supporting the **UN Sustainable Development Goals** (SDGs) respectively. Secondly, questions on Relevance sought information on to what extent **PRIMA and national research agendas align**.

With regards to what extent PRIMA objectives and activities are appropriate to support EU and international policies in the areas of R&I and climate action, the overall finding is positive.

Although PRIMA was set up 2017 (the first calls were launched in 2018), several preceding initiatives indicate a longstanding need for action. In terms of EU policy action, PRIMA's relevance dates back to the European Council held in Lisbon in June 1992 and which set up the Euro-Mediterranean Partnership, which was also known as the Barcelona Process. The Partnership subsequently become operational in 1995. A Monitoring Committee for Euro-Mediterranean cooperation was also created in 1995 to monitor and promote cooperation in RTD. Subsequent cooperation in the area of R&I played a key role in the implementation of projects in the successive EU Framework Programmes, although the form of cooperation has evolved in the decades since its initiation²⁰.

In parallel with high-level cooperation, Euro-Mediterranean R&I cooperation has also continued through a number of ERA-NETS in the areas of water and environment.

In this regard, PRIMA's relevance builds on past and continued EU initiatives. In addition, to R&I and climate, PRIMA also addresses the EC Communication published by the Juncker led Commission in 2012, "Enhancing and focusing EU international cooperation in research and innovation: a strategic approach"²¹ which in effects broadens the commitment of the ERA to also include EU Neighbourhood countries.

The strategic relevance of PRIMA described above is further reinforced by the findings of the interview programme. Key arguments advocating for the high relevance of PRIMA can be summarised as follows:

²⁰ The Monitoring Committee for Euro-Mediterranean cooperation was later renamed 'Mediterranean Group of Senior Officials in Research and Innovation' and later adapted to contribute to the implementation of the objectives of the Union for the Mediterranean (UfM) in the area of research and innovation.

²¹ COM/2012/497

The high relevance of the PRIMA SRIA in addressing the needs of the Participating States with regards to R&I and climate action. There is a consensus that the direction and content of the SRIA is highly relevant for addressing the problems faced by climate change and energy challenges in the Mediterranean region – both North and South.

With regards to PRIMA's appropriateness in supporting national policies and programmes. This study's overall assessment with regards to this point is positive. This assessment is predominantly based on the interview programme which found strong national support at the ministerial/policy for PRIMA objectives from Southern and Northern PS alike. PS recognise that the thematic areas of PRIMA are increasingly focused on climate change actions including mitigation of climate change. More specifically however, the common reliance on the agricultural sector (and in turn on water and sustainable energy sources) among the Mediterranean countries coupled with the fact that Mediterranean is one of the most vulnerable regions to climate change, increases the relevance of PRIMA beyond the alignment of R&I agendas – the PS also have a common socioeconomic challenge to solve in order to safeguard key economic sectors, employment opportunities and the wellbeing of the Participating States' population and physical environment.

The overall relevance of the Annual Work Programmes and Calls for Proposals. Stakeholders consulted also agreed on the high relevance of the AWP and CfPs. They considered PRIMA to be inclusive in their consultations on the content of the AWP although there was a recognition that the limited resources of the programme meant that not all PS priorities could be included. However, since most PS reported that PRIMA CfP receive high levels of interest from R&I performing institutions, there was also a recognition that the topics selected were appropriate.

PRIMA addresses the shared socio-economic problems faced by the Mediterranean countries. In addition to its scientific relevance, it was also recognised by PS and other regional stakeholders that PRIMA serves an important and relevant role in catering for the policy needs shared by the Mediterranean countries – with regards to challenges faced by climate change and with regards to the industrial and economic makeup of the Mediterranean countries. Although stakeholders recognised the importance of EU wide action, they also tended to emphasise the shared challenges that they considered specific to the Mediterranean basin area. In this regard, stakeholders concluded that the participation of Southern Mediterranean countries was especially relevant. Thus, stakeholders equally appreciated the diplomatic efforts that preceded the set-up of the PRIMA programme and highlighted the need for this programme to build closer cooperation, including among countries where political cooperation was generally challenging. The PRIMA principles of co-ownership, mutual interest and shared benefit²² were considered particularly relevant for the intervention. It was recognised among Participating States that PRIMA was a programme to fully serve the North and South Mediterranean countries alike.

From the EU's perspective, the fact that PRIMA is fully catered for active participation of South Mediterranean is an advantage in the Union's efforts to effectively address climate change challenges in that PRIMA has the ability to act as medium for action and collaboration. In this regard, PRIMA also becomes relevant for Northern and Eastern EU countries even though they are not part of the programme per se.

The concluding view of this study that PRIMA is highly relevant is demonstrated through high-level political commitment at the ministerial level. PRIMA is a politically relevant programme as well as relevant for the R&I community. In this regard, stakeholders from the Participating States agree that PRIMA, despite the challenges resulting from closer and more extensive cooperation (including relating to the pooling of resources), is best implemented as an Article 185 initiative and not in the form of an ERA-NET programme. This is because the former mechanism for cooperation is a more

²² Valletta Declaration on Strengthening Euro-Mediterranean Cooperation through Research and Innovation 2017

relevant form of cooperation to solve the strategic and systemic challenges that PRIMA is addressing.

Indeed, this argument was also outlined in the PRIMA Inception Impact Assessment which stated that “several initiatives have been launched at the Union level, mainly coordination and support actions and ERANET schemes, for supporting national and regional work programmes on water and food. However, these efforts lack a strategic cross-border programme collaboration and coordination and do not address issues related with the following problems.

1. Insufficient development and implementation of innovative solutions [...]
2. R&I governance issues to address common and inter-related problems [...]
3. Unattractive environment for private sector in the Mediterranean area [...]
4. Insufficient investments in R&I [...] ²³

With regards to PRIMA’s appropriateness to support the achievement of the UN Agenda 2030 through **the implementation of the SDGs in the Mediterranean Area**, the overall conclusion positively views PRIMA’s efforts in this area.

PRIMA objectives directly or indirectly support seven of the SDG goals²⁴

- SDG 6 on clean water and sanitation
- SDG 7 on affordable and clean energy
- SDG 8 on decent work and sustainable growth
- SDG 9 on industry, innovation and infrastructure
- SDG 10 on reduced inequalities
- SDG 12 on responsible consumption and production
- SDG 13 on climate action

At the operational level, the PRIMA programme includes a number of Key Performance Indicators (KPIs) on SDGs (e.g. impact indicators on a number of SDG goals are listed in the SRIA²⁵), however given that PRIMA is a relatively young programme, sufficiently comprehensive data on these KPIs are not yet available. Having said this, once the first round of PRIMA projects has been fully implemented (later in the year 2022²⁶) it will be feasible to analyse preliminary data on expected impacts on SDGs.

PRIMA’s appropriateness to support the implementation of SDGs also has a strategic dimension at the level of the Board of Trustees. Study interviews conducted with the PRIMA Board of Trustees confirm that the programme leadership is planning to take advantage of the fact that the COP27 meeting will be held in Cairo later in 2022 (Egypt being a PS of PRIMA). As further discussed in section 4.2.1, strategic and awareness raising activities will require an effective communications strategy, which is something that has been identified as a weakness of PRIMA.

²³ European Commission (2015) PRIMA Programme Inception Impact Assessment

²⁴ <https://www.un.org/development/desa/disabilities/about-us/sustainable-development-goals-sdgs-and-disability.html>

²⁵ See for instance page 37 of the SRIA – Table 4 Monitoring the impacts of general goals with Key Performance Indicators

²⁶ Due to the COVID-19 pandemic, the full implementation of PRIMA projects are delayed by 6 months.

4.2 Effectiveness

Section 4.2 presents the findings from the research questions under the Effectiveness criterion. A key aspect of effectiveness is assessing progress towards the specific and operational objectives of PRIMA.

4.2.1 Specific objective 1 – Alignment of national R&I programmes and procedures

The research questions considered in this analysis concern the i) extent to which there has been an alignment of national programmes and relevant R&I policy among the (19) Participating States, and ii) to what extent PRIMA achieved scientific, managerial, and financial integration?

With regards to the alignment of national **R&I policy** in line with the PRIMA programme, this study's key finding is that overall progress towards more commonalities in the R&I policy direction has been good. The findings from the interview programme with PS is that there is strong political support for the aims and objectives of PRIMA. In particular, PS consider that the geographical scope of PRIMA is a strength since the region faces many common challenges. The realisation of these common challenges then becomes a strong driver for improving alignment and cooperation.

Given the heterogeneity of the PS involved in PRIMA and the fact that the programme itself is young, many interviewees also highlight the fundamental achievement of establishing the PRIMA Foundation and the Dedicated Implementation Structure as the agreed mechanism for implementing the programme. The implementation of an effective and efficient Foundation and an agreed and effective operational structure has been achieved in a short amount of time. With an agreed governance and approach in place, the conditions for achieving better alignment in the Mediterranean region have significantly improved. This will then be a (continued) focus for the remaining programme period.

The process of establishing the SRIA and the content of the SRIA also receives wide support among national PRIMA stakeholders. The consultations preceding the finalisation of the SRIA were overall considered to be inclusive and a consensus on the content was achieved by keeping a balance of priorities. The PRIMA Scientific Advisory Committee (SAC), is also highly regarded by stakeholders who expressed trust in the scientific excellence and integrity of the work done by the Committee. With regards to the Annual Work Plans that are derived from the overall direction given by the SRIA, the topics selected by the SAC in consultation with PRIMA and PS were considered to be appropriate. However, in a few cases PS would have preferred to see a larger number of topics included that were relevant to their context. There was at the same time a recognition from these PS that PRIMA resources are finite and cannot be spread too thinly, at which point they become ineffective.

The progress in developing and implementing a common strategy as described above can be further contextualised by pointing out the heterogeneity among the PRIMA PS with regards to R&I capabilities, the sophistication and level internationalisation of national R&I systems, funding systems, prevailing R&I culture, political capital available, and so on. Although this heterogeneity is generally acknowledged as a challenge by stakeholders, it is not considered to surpass the benefits of cooperation through PRIMA.

Rather there is a need to create a more level playing field and common understanding of R&I policy in order to provide more consistent support to regional R&I performers. Important aspects of this debate include the role of business and private enterprise in R&I, how to encourage innovation and collaborative behaviour among R&I performers, including with international counterparts.

The AAR 2020 notes that Section 3 activities are crucial in terms of contributing to PS' R&I national programming alignment since national programmes are included under PRIMA's umbrella. This was seen as having allowed for more efficient use of scarce public resources and in having avoided duplications (pg. 5 AAR, 2020).

Along with R&I policy, **heterogeneity in procedures and processes governing R&I** programmes at national level constitute a challenge for coordination and implementation. This is further discussed in-depth in the Efficiency section, demonstrating PRIMA's progress in tackling this key challenge.

4.2.2 Specific objective 2 – The critical mass of actors and resources

The study's investigations into the critical mass of actors and resources through PRIMA has focused on the extent to which PRIMA activities have contributed to establishing durable cooperation between partners and the nature of this cooperation. The types of partners involved in PRIMA projects is also explored.

An initial key finding is that PRIMA has funded a significant number of projects since the launch of its first call in 2018. The portfolio analysis, presented in Section 3.4, provides an analysis of the characteristics of the projects funded.

This study's qualitative interviews with project coordinators indicate overall promising results in terms of progression towards critical mass, sharing of resources, and the creation of longer-term cooperation. Project coordinators have provided input into the rationale of their consortia which are typically built up according to expertise required along the value chain, expertise on specific topics, and geographical relevance.

Typically, PRIMA project consortia partly stem from previous cooperation (e.g., previous ERA-Net actions). In PRIMA, these consortia or networks are expanded or revised to reflect the geographical remit of PRIMA and the programme objectives focusing on the needs of the Mediterranean. In this sense, the project partnerships build on previous relationships, which could be interpreted as a positive indication of sustainability.

One current characteristic of project consortia, also observed by the PRIMA programme itself, is that there is limited South-South cooperation. This is a recognised shortcoming. The PRIMA programme is prepared to tackle this kind of polarisation through capacity building exercises and other such activities.

This study found that participation in PRIMA by R&I performers in the South Mediterranean is viewed very positively. This is partly thanks to the fact that they (as non-EU members) are able to participate on an equal footing in the programme and to access funding for large collaborative projects. In addition to the benefits of collaboration in PRIMA, participants also gain experience in how collaboration works in other EU programmes, thus increasing their chances and competitiveness for other funds including Horizon Europe.

In addition to Section 1 and Section 2 grants, which aim to build critical mass, PRIMA resources are also made available through Section 3 projects, which are activities undertaken at the national level by one or more Participant States. Examples of countries that have engaged in S3 projects are Spain, France, Algeria, Germany, Egypt, Morocco, Algeria, France, Italy, Cyprus, Lebanon and Tunisia. The types of activities supported vary. Some provide research funding which targets businesses in relevant thematic areas to PRIMA, or provide researcher mobility schemes. Other examples of activities supported are the strengthening of capacity-building and applied research.

Other activities constitute welcome support for potential PRIMA participants/coordinators who have less experience of EU funding instruments. Currently PRIMA is dominated (like most other EU R&I programmes) by higher education institutions (HEIs) and other public R&I performers who hold certain advantages compared to other potential project participants. Notably, public R&I performers have access to logistical support throughout the proposal writing period from support teams. Compared to non-academic researchers, they also have an in-depth understanding of the evaluation process of funding proposals under EU programmes.

Another factor which may contribute to limiting private sector involvement in PRIMA, including SMEs, is that the agencies representing PS in PRIMA tend to cater for public research organisations and less so innovation actors (with the exception of FR and ES). Some PS, notably from the South, do not – or have only recently begun to – support businesses and innovation more actively.

Several of the project coordinators interviewed suggested that knowledge exchange sessions could take place between PRIMA project coordinators and that this could be insightful, as other projects might be facing similar organisational challenges that could be addressed by similar solutions. These sessions could be organised every 3-6 months and be organised by the PRIMA Secretariat, and take the form of smaller focus groups held either in person or virtually.

However, another coordinator interviewed in a different thematic area stated that there had already been extensive opportunities through the organisation of PRIMA workshops and others to exchange information regarding different projects – their activities and research outcomes to date, and any mutual learning points through the exchange of good practices. A lesson learned perhaps is that coordinators strongly appreciate having the opportunity to network with their counterparts that lead other projects in the same thematic area, and that cooperation and knowledge exchange should be encouraged as widely as possible in future. The frequency of such exchanges between projects may need to vary depending on the theme in question, and how many projects have been selected in that particular annual call etc. This suggestion has been incorporated into the recommendations.

4.2.3 Specific objective 3 - Strengthening innovation capabilities

The third specific objective of PRIMA is to strengthen the R&I capacities and the implementation capabilities of all actors involved in R&I across participant states in the Mediterranean area. This includes both public and private sector R&I actors, such as universities and research institutes, SMEs, non-governmental organisations and local research centres.²⁷ In that sense, the development of innovative solutions is a core component of the programme's ambition to addressing the identified challenges in the Mediterranean area. Ultimately, the objective is to create a Common Knowledge and Innovation Space (CKIS) and a Common Mediterranean Research and Innovation Agenda across the participant states.

To date, PRIMA has implemented a range of projects offering joint innovative solutions through Innovation Actions (IA) and Research and Innovation Actions (RIA). In its three years so far, PRIMA has delivered innovative solutions that are being piloted and tested on the ground, addressing joint regional challenges with the aim of also making these solutions transferable beyond the Mediterranean area.

The Innovation Actions being supported are especially relevant to strengthening innovation capabilities as these focus on improving Technology Readiness Levels (TRLs) during projects. However, many PRIMA projects are still under way, and some are still in their early stages. This makes it hard to assess progress made related to enhancing innovative technology readiness of participating entities and the scalability of the proposed solutions. In addition, COVID-19 has been highlighted by several project coordinators as the main cause for delay in project implementation, resulting also in a delay in testing and demonstrating innovation potential. Nevertheless, some of the project coordinators highlighted early signs of improvements in the TRLs and were confident about further progress as the projects advanced.

For example, the SUREFISH project, which aims to assure fish authentication and reduce fraud, has already made some promising initial indications of potential commercialisation in Algeria; maximising the TRL of the solutions and ensuring market readiness will come later in the project. Throughout its

²⁷ Strategic Research and Innovation Agenda (SRIA)

lifecycle, the project aims to increase its TRL from 5 to 7 and to achieve TRL 9 one year after project completion.

Other demonstration projects have also started testing their solutions at micro and local scale. This is the case of the AWESOME project, which is developing a decision-analytic platform based on a multi-level, integrated water-ecosystem-food (WEF) model. It has started developing a demo-site of smart agricultural solutions including solar powered hydroponics, aquaculture, and aquaponics which will provide indications on suitability and sustainability of these new technology to back up existing systems in drying future. The case studies implemented in four countries for the project Plan B have started to demonstrate innovative results on the level of IPM tools development and the project SUSTAINOLIVE has experimental olive farms located in Portugal, Spain, Italy, Greece, Morocco and Tunisia²⁸. In addition, the SMARTIES project, intended to improve farm and irrigation district water use efficiency and farm profitability developing a real-time operational water and economic management web-gis system, started its activities at a TRL 4 – technology validated in lab and is expected to reach the TRL 7 – system prototype demonstration in operational environment. A similar progress is expected for the projects Fish-photoCAT and VALUEFARM: its readiness has different TRL steps, starting from the TRL starting point of Basic principles observed TRL 1 to the final with Technology demonstrated in relevant environment TRL 6, in the case of Fish-photoCAT in the form of demo fish farms.

4.3 Efficiency

Section 4.3 assesses the study research questions relevant to the Efficiency criterion. This section is structured according to the various activities carried out by PRIMA. The first section under Efficiency presents the study findings relating to PRIMA call preparations and funding procedures.

4.3.1 Call preparation and funding procedures

Since its establishment, PRIMA has prepared and implemented four rounds of Calls for Proposals in 2018, 2019, 2020 and 2021 respectively. PRIMA is currently launching its fifth round of calls.

The calls for proposals have been preceded by the design and agreement of Annual Work Plans (AWP) which outline the topics to be funded in that particular year. The work of developing the AWP is led by PRIMA including the SAC. PS are consulted before the AWP is finalised.

Annual Calls for Proposals (CfP) follow the publication of the AWP. The CfP proposals is led by PRIMA and concern proposals launched as Section 1 (EU funding) and Section 2 (co-funded by Participating States).

With regards to project proposal preparation, the feedback collected by project coordinators and from PS suggest that the PRIMA Secretariat performs well and is efficient in its support to potential project coordinators seeking advice in advance of submitting a bid. Interviews with project coordinators indicate that PRIMA officers are highly regarded in their support and particularly to ensure that the proposals submitted are aligned with PRIMA objectives. Successful project coordinators report that cooperation with PRIMA Secretariat during the award period is also positive. PRIMA officers are described as approachable and always helpful.

From the PS perspective, the study's impressions are that the scientific evaluation of proposals submitted to PRIMA is trusted as being rigorous and impartial. PS are not involved in the process led by scientific evaluators but only step in once the funding coordination of successful Section 2 proposals is due. Thus, the evaluation process of the scientific content is considered to be efficient.

²⁸ See Sustainolive project website, available on <https://sustainolive.eu/olive-farms/?lang=en>

There is however a consensus that inefficiencies arise in the process of awarding Section 2 funding, which is the grant instrument where funding from the relevant PS that have national research teams participating in the respective projects are needed.

The inefficiencies caused by lack of coordination of PS funds have a number of consequences:

1. Difficulties in ranking of proposals to ensure the ones of highest scientific quality are consistently funded. There is an issue that each year one or more PS are 'too successful' insofar as national research teams form part of a large number of successful PRIMA grants. This means that PS risk running out of budget without being able to co-fund their share of all successful projects. As a consequence, successful PRIMA projects risk not being granted funding or lose partners whose PS is not able to provide the funding. As a result, some projects are granted funds without the full consortium in place.

2. Double submissions of grant proposals required under Section 2. Proposals submitted to PRIMA under the Section 2 instrument also needs to be submitted to the relevant PS (this was particularly relevant for Italy and Spain). Since the national procedures – and the timing/deadlines of these procedures – differ across the PS, this potentially means a significant amount of double work for the coordinator team submitted the proposal. For example, in some countries, the national proposal should be submitted in the local language and not English meaning the complete proposal needs to be translated and edited to fit national templates. The different cycles in place in terms of processing applications also lead to waiting times before the project contracts can be signed etc. This is a disadvantage especially for innovation support given the need to move fast with new ideas, new technologies etc.

There is however a recognition that the double-submission constitutes a disproportionate administrative burden, and several PRIMA countries are working to simplify procedures. Some funding agencies, including the Jordanian Funding Agency HCST are putting in place a different procedure to avoid the double submission.

3. Delays in disbursement of PS funds and/or inconsistencies in timing of funds being released to projects (the Time to Grants (TTG) period is also longer for Section 2 compared to Section 1). This is further described in section 4.3.2 Implementation.

4.3.2 Implementation

With regards to the efficiency of the implementation of PRIMA activities (focusing on Section 1-3), the study findings are in line with the findings of 4.3.1 since the difficulties in implementation stem from the initial obstacles described during the call and award period.

Indeed, the main finding relating to the efficiency of implementation concerns the need to improve consistency between promised and actual commitments by PS and the need to improve, and make consistent, the TTG for Section 2 grants.

The main issue here is that the heterogeneity in PS procedures mean that PRIMA projects that are funded under Section 2 receives funds (from each PS) at different points in time. Some research teams, relying on PS funds, may wait 12 months or more for funding. This lack of coordination risks affecting the timely implementation of the projects and in particular individual work packages.

PRIMA is actively working to tackle the regulatory and administrative factors that hamper implementation. This is key to ensure an efficient PRIMA programme but equally has the benefit of improving implementation of other European partnerships since the funding agencies revising their procedures also participate in other EU collaborative programmes.

Aligning national granting processes and improving the synchronisation payments to beneficiaries of projects selected under Section 2 (with PRIMA PS funds)

The most critical issue identified by PRIMA as the cause affecting the efficient implementation of Section 2 grants, is the lack of synchronisation among national funding agencies' schedules for releasing funds to PRIMA project participants. PRIMA participation has led to NFAs adopting a mitigation plan that all projects should start six months after the final list of selected projects for funding has been approved. This means signing national contracts simultaneously and allowing all research teams participating in a project starting on the same date.

In addition to this, according to PRIMA, further mechanisms are planned, via dedicated Mutual Learning Workshops, that aim to establish better coordination and communication mechanisms among the different NFAs.

Encouraging PS to implement measures at the national level to speed up some PS administrative procedures

PRIMA's effort to improve funding coordination has been supported through several national level measures.

For example, the Italian Government issued on 20 May 2020 a Decree-Law that will allow Italian partners more effective and expedited participation in international projects. The signature of contracts from the Ministry of the University of Research may skip some checks implying the appointment of national experts after the signature of the grant agreements. This will allow for a quicker release of funds.

AEI Spanish funding agency implements a fast-track grant mechanism, which allows signing contracts very soon after PRIMA has produced its ranking list. The international evaluation conducted by PRIMA is accepted as a reliable evaluation and thus projects selected by PRIMA are automatically funded with no further evaluation. According to PRIMA, this action is estimated to save around six months compared to the previous procedure. As many Section 2 beneficiaries have partners in Spain and Italy, more efficient national processes implies that more projects will be able to start sooner, and synchronisation with other NFAs funding schedules will become more straightforward.

Egyptian public bodies involved in international cooperation projects currently need to obtain validation by a specific department in charge of national security affairs.²⁹ A contingency plan has been adopted by the Egyptian Ministry of Education to avoid delays in the signature of grant agreements. After announcing the results of PRIMA evaluations (Section 1 and 2), the Ministry will send formal letters to the EG public participants invited to the second stage to ask them to immediately apply for the national approvals. This improves the chances of EG organisations to get approval before the start of the PRIMA project.

The Jordanian funding agency (HCST) is currently implementing a fast-track grant mechanism, which allows the signing of contracts very soon after PRIMA has produced its ranking list. The international evaluation conducted by PRIMA is accepted as a reliable evaluation and thus projects selected by PRIMA are automatically funded with no further evaluation. This will avoid that evaluation performed at national level excluding projects that have been considered of high-quality standards by PRIMA international peer evaluation process of proposals.

Preventing National Funding Agencies from reducing beneficiaries' budgets during the signature of contract in order to fund more projects The practice of some NFAs to change their budget commitments to try to accommodate for (too much) demand in terms of successful grant applications is being addressed by PRIMA through trainings provided to PRIMA National Contact Points to help them better support applicants by proposing more realistic budgets with eligible costs according to the national regulations.

Increasing interest in PRIMA participation through more appealing national regulations

According to PRIMA, some PS have increased the maximum funding rate allowed per entity. For example, the Egyptian Funding Agency, and the EG Academy of Scientific Research and Technology have raised the budgets for Egyptian organisations as follows: EUR 250,000 (from EUR 175,000) for participating entities with a coordinator role and EUR 200,000 (from EUR 150,000) for participating legal entities with a partner role in the action.

²⁹ The Egyptian participants cannot join the consortium and sign grant agreements if they do not get the approval for participating in an international project by the internal Security Authorities (the so called 'non-technical' approvals for EG public entities).

PRIMA has also piloted widening participation-type mechanisms (building on H2020 practices) with the aim of increasing the participation of legal entities from underrepresented countries.

During the evaluation of the proposal (after first stage evaluation), the coordinator/partners of the project(s) invited to the second stage submission process were allowed to find suitable partners from a given list of countries/regions which otherwise would not be able to spend their allocated budgets. This proposed action was tested to incorporate French legal entities in consortia having passed the first stage evaluation process. The outcome of the pilot was positive, with an increase in the allocated budget of the French National Funding Agency of more than 50 %.

Aligning national regulations to ensure interoperability of rules and have a common understanding

According to PRIMA, during two subsequent Section 2 calls for proposals (Call 2019 and Call 2020) 70% of Jordanian applicants were eliminated at the first-stage eligibility check due to difficulties in interpreting the rules. The Jordan funding agencies HCST and SRISF have since aligned their national regulations to improve understanding of their rules.

4.3.3 Operation of the PRIMA Foundation and Secretariat

The PRIMA Foundation and its Secretariat are overall highly regarded by stakeholders. There is a consensus that the PRIMA operations are efficiently run on the principles of joint leadership, joint management and joint cooperation. This approach receives strong support.

Due consideration is also given to the efforts made by the PRIMA Foundation (and individual national Ministries before PRIMA was set up) to secure political and financial commitment from the PS that today participate in the programme. This is seen by PS as a significant diplomatic achievement.

With regards to the current workflow between PRIMA and national ministries, this is overall considered to be satisfactory with internal communication and procedures seen to be efficient despite tight deadlines.

Good progress has already been made in putting PRIMA on the map in terms of strengthening its visibility among regional stakeholders and R&I actors in the Mediterranean region. For instance, PRIMA is often invited to attend policy workshops and events by UfM, CIHEAM and other stakeholders, and PRIMA in return has engaged with these stakeholders and invited them to take part in PRIMA-led initiatives. Furthermore, some joint initiatives have been undertaken, such as the Stakeholder Platform on Sustainable Foods mentioned earlier. In terms of room for improvement with regards to PRIMA's operations, a further emphasis could be placed on strengthening external communications by PRIMA to build on progress already made and to develop an even stronger brand.

4.3.4 Monitoring and indicators - findings

4.3.4.1 Monitoring and evaluation in PRIMA

As explained in Section 3.4 on monitoring and evaluation, which provides a factual description of the main arrangements, the monitoring function has been a central component of the activities of PRIMA since the outset, both at the programme and project level.

At the project level, all projects are subject to monitoring and evaluation requirements, and the means of gathering data through the MEL directly from lead coordinators appears to be efficient and seen as a useful tool.

It is not possible to provide a full assessment of the indicator system itself, as this is still evolving and has developed over time. Overall, the indicators selected appear to be relevant, efficient and effective.

However, there is a need to align the PRIMA indicator system at programme level with the new Horizon Europe indicator system (particularly the guidance developed for European Partnerships)³⁰.

4.3.4.2 Monitoring and Learning Platform (MEL)

Regarding the efficiency and effectiveness of monitoring activities, at the programme level, the PRIMA Secretariat invested in 2019 in the MEL platform, with a contractor appointed to develop a suitable online database and to customise the monitoring framework to identified needs. This approach appears to have been efficient and effective as gathering data from all the projects manually would be a lot more time consuming and human resource intensive for the PRIMA Secretariat. This has therefore led to efficiency savings, which whilst difficult to quantify, can nonetheless be noted.

The MEL is highly commendable and represents a good practice in transnational R&I programmes. For instance, MEL has put a strong emphasis on the concept of co-creation through an open access approach. External donors also contribute information and data about projects funded through donor programmes that could be complementary to those being supported under PRIMA in particular thematic fields e.g. the World Food Programme, Gates Foundation. The intention is that MEL can “promote the programme’s overall impact and attract audiences providing Open Access visibility to research results, while acknowledging donors, intellectual property and knowledge authorship”³¹.

It is difficult at this relatively early stage whilst the MEL is also still under development to provide an assessment of all aspects, such as the level of success of the open access dimension of the MEL.

Nonetheless, some findings can be reported based on the assessment of the MEL as it stands in January 2022. The data variables of interest can be customised by users themselves and are easily navigable. There are many different presentational ways of displaying the monitoring data and information, with strong data visualisation capabilities e.g. in graph form with numbers and percentages with visually attractive infographics providing highlights.

The approach is user-friendly and UX-centric and means that the data can be customised depending on the needs of particular users i.e. whether this be the PRIMA Secretariat, funders from the PS, lead coordinators from among project beneficiaries or external donors interested in potential synergies between their programme and PRIMA. The data provided are comprehensive, and make excellent use of the automation potential of monitoring data through the use of APIs to plug in real-time data.

4.3.5 Collaboration of Participating States

PRIMA’s funding model aims to attract additional resources through a ‘leverage effect’: this consists of contributions by Participating States further multiplying Horizon 2020 budget resources and other activities. National contributions can be:

- *in cash* contributions to the PRIMA Section 2;
- *in-kind* contributions dedicated to the implementation of proposals resulting from Section 2 transnational calls;
- *in-kind* contributions through Participant States Initiated Activities (PSIAs) and Other Activities under Section 3.

Such contributions provide additional funding to the programme and further advance the alignment of national priorities with PRIMA’s strategic objectives. As outlined in the table below, the leverage effect has so far proved effective as contributions by PS have generally grown between 2018 and 2021.

³⁰ A robust and harmonised framework for reporting and monitoring European Partnerships in Horizon Europe, European Commission Directorate-General for Research and Innovation, First Interim Report, 2021

³¹ This approach is explained in an interview with the PRIMA Secretariat person responsible for managing the MEL with an external contractor - <https://prima-med.org/mel/>

The exception was 2020, when there was a decrease, however the amount still surpassed the EUR 20 million mark.

Table 4-1 – In-kind and in-cash disbursed amounts by NFAs in 2018, 2019, 2020 and 2021 (in EUR)

	(A) In-cash contributions S2	(B) In-kind contributions S2	C) In-kind contributions S3
Disbursed amounts AWP 2018	17,017,869	1,809,681	6,419,151
Disbursed amounts AWP 2019	8,628,376	854,559	20,469,928
Disbursed amounts AWP 2020	5,210,178	1,034,918	13,876,980
Disbursed amounts AWP 2021	0	409,268	33,892,651
Sub-Total in-cash	30,856,423		
Total Sub-Total in-kind		4,108,426	74,658,710
Total in-kind contributions (B+C)			78,767,136
Total in-cash and in-kind (A+B+C)		109,623,559	

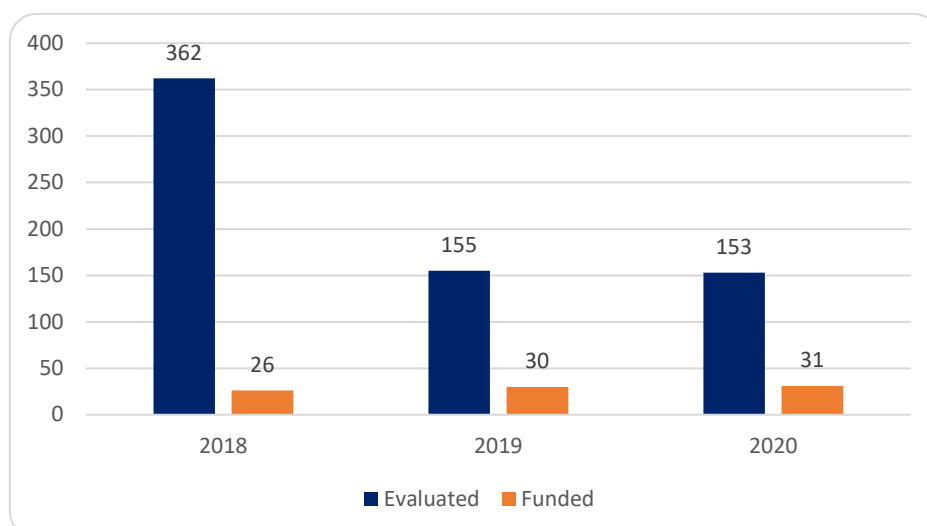
Source: Input report to the interim evaluation

Lessons learned regarding the implementation of such contributions mainly relate to the coordination of the broad variety of activities to be delivered under the PRIMA programme.

Therefore, careful consideration needs to be given to planning and successfully implementing such activities, as the responsibility relies to a great extent with the National Funding Agencies and not PRIMA itself. For example, KPIs related to PRIMA's efficiency monitored for section 1, including the time needed to grant, sign and pay, cannot be used for section 2 as out of PRIMA's control. NAFs also tend to have different funding schedules, which might present obstacles to the payment of project beneficiaries due to lack of coordination. PRIMA has already started building on existing collaborations among partner institutions to set up shared best practices and procedures to implement the programme, especially in relation to the management of activities funded by NAFs and their coordination and communication.

There is an overall low success rates for proposals across section 2 which has evolved positively over the last years: 7.4% in 2018, 19.5% in 2019 and 20.26% in 2020. The rising success rate is motivated mainly by a decreasing number of proposals being submitted, as shown in the graph below. This suggests that the PRIMA calls are very competitive and attract a high level of interest, with only very few projects actually being selected and funded. Additional funding would presumably be very welcome, either from the currently involved entities or from other national funding agencies.

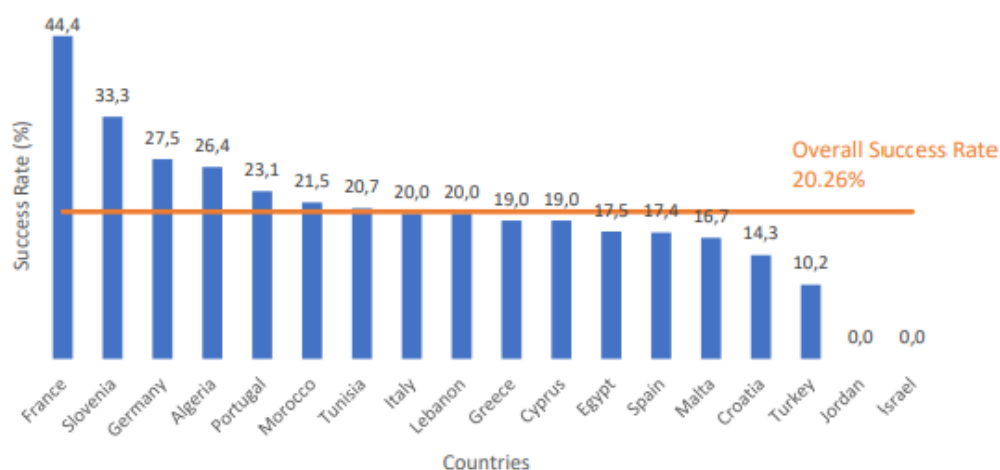
Figure 4-1 Section 2 success rate of proposals 2018-2020



Source: Annexes to the Annual Activity Report 2020

Differences in success rates across countries persist, pointing at the need for greater efforts to ensure equal participation across countries.

Figure 4-2 - Success Rates of proposals by country – Section 2



Source: Annexes to the Annual Activity Report 2020

PRIMA has undertaken efforts to increase both the participation and coordination of legal entities from PRIMA PS with lower submission rates in 2019³². For example, an Action Plan was put into place to strengthen the participation of less represented PRIMA PS, in particular non-EU PS. Among others, training workshops were delivered by PRIMA staff and hosted by the respective NFAs (e.g. in Algeria, Egypt, Jordan, Morocco, Tunisia and Turkey) with the objective of fostering proposal drafting skills of potential applicants. This is seen as having contributed to a more balanced allocation of funds in 2019. In addition, interview feedback suggests that there might be room for additional capacity-building session to take place which would further even the playing field on both sides of the Mediterranean.

³² Annual Activity Report 2019

4.4 Coherence

The question of coherence was examined through the evaluation study. A distinction was made in the analysis between:

- **Internal coherence** – the extent to which PRIMA has been implemented in an internally coherent way, especially in terms of the balance between different types of projects across the different thematic priorities of PRIMA, and their relation to programme objectives. The extent to which projects funded are complementary and have generated synergies between different themes is explored.
- **External coherence** – extent to which the PRIMA Programme is coherent with other regional, national, EU and international initiatives and/or policies that have similar objectives. The degree to which there is also any evidence of complementarity, synergies and overlap between PRIMA and these other programmes.

4.4.1 Internal coherence

This section examines the extent to which the PRIMA programme has been implemented in an internally coherent way.

Looking at the overall balance in financial allocations between 2018 and 2021 and across different thematic priorities, there have generally been increases in funding each year (apart from a slight dip between 2020 and 2021). The funding has been allocated reasonably evenly across the three and a half years of PRIMA's operations to date.

Regarding coherence in terms of the thematic division of projects across different areas, farming systems accounted for the largest percentage of projects (48.2%), while water management (22%) and agri-food (25.6%) are relatively evenly balanced. Further details in this regard can be found in the portfolio analysis (Section 3.4). In terms of the balance in projects funded through PRIMA across different types of research projects, there was found to be a good mix between RIAs and IAs, indicating the PRIMA programme has struck a reasonable balance between projects at lower and higher TRL levels i.e. between more fundamental research and research that is closer to the market that can be commercialised and/ or can be rolled out for societal benefits.

Some observations can be made based on the data presented earlier in the portfolio analysis. Firstly, a strong emphasis has been placed on the farming sector. Farming is important for communities across the Mediterranean region and, as such, it makes sense to allocate more projects and funding to a sector which could greatly benefit from the strengthening of R&I capacities and increased stakeholder buy-in, developing the critical mass of actors and resources required, as well as furthering progress towards the achievement of the SDGs. Secondly, the allocation of broadly similar funding levels to water management and agri-food demonstrates that both sectors have been prioritised under the PRIMA programme. Further evidence that PRIMA has been implemented in a balanced way across thematic priorities is that average project values were similar across all three thematic areas. This suggests an even balance in terms of the importance placed by the PRIMA Secretariat between different thematic priorities at the level of individual projects.

Based on the case study research and interviews with lead project coordinators, some evidence was found of synergies between the water management, farming and agri-food sectors. Local communities were already found to have benefited from innovative solutions developed across different thematic areas, but in order to maximise the PRIMA programme's effectiveness and value added in future, there is a need for increased engagement between different actors in different sectors. Such synergies can also be created through the NEXUS theme, which aims to support the water, farming and agri-food sectors through inter-disciplinary research projects. NEXUS projects have strong potential to strengthen cross-sectoral engagement further in future, building on the progress already made.

An example of a NEXUS project is Phemac³³, which aims to develop an interactive platform with best practices in the farming, water and agri-food sectors, bringing together a wide range of stakeholders. The platform will help all stakeholders to better understand what has already been developed and implemented, avoiding duplication and consolidating existing knowledge to create added value. In particular, public-private partnerships are encouraged to challenge the inefficient use of resources.

Nexus projects have the potential to develop efficient solutions to increase food and water security in the Mediterranean, while contributing to the fight against climate change. Only seven Nexus projects were funded between 2019 and 2021, accounting for 4.2% of all projects. Given the benefits that could be generated from bringing stakeholders across all thematic areas together in a project setting, there is scope to increase the number of Nexus projects, which would boost PRIMA's overall internal coherence. However, Nexus projects benefit from significantly more funding on average (EUR 2.6 million), demonstrating their importance to achieving the PRIMA programme's objectives.

In terms of the geographic distribution of projects, 38.1% of beneficiaries were from outside the EU. The extent of involvement of non-EU participating states can be considered a success in achieving PRIMA's objectives and their involvement in projects should be further encouraged in the coming years. Given that among the specific objectives of PRIMA are to strengthen the critical mass of actors and resources and to strengthen R&I capacities, the high level of participation by participant states in third countries is encouraging.

Overall, the PRIMA programme appears to have achieved a good thematic and geographic balance, suggesting that it has been managed in an internally coherent manner to date. Moreover, synergies between created between different themes at the project level, as for instance, agro-food projects often have a water management dimension, water management projects sometimes consider farming systems etc.

4.4.2 External coherence

In assessing external coherence, the first issue considered was the extent to which the PRIMA Programme is coherent with other regional, national, EU and international initiatives and/or policies that share similar objectives with PRIMA.

Assessment of coherence between PRIMA and different funding programmes (EU, national, regional)

A number of different regional, national, bilateral and transnational instruments have been considered, namely:

- The EU RTD Framework Programmes, i.e. Horizon 2020 and the new Horizon Europe;
- European Partnerships in Horizon Europe
- The Interreg MED Programme³⁴ supported in 2007-2013, 2014-2020 and 2021-2027;
- The ENI CBC MED Programme³⁵ 2014-2020 and the successor NEXT MED Programme 2021-2027, funded through the Neighbourhood, Development and International Cooperation Instrument (NDICI);
- National and regional R&I programmes in fields relevant to PRIMA (which are meant to be aligned);

³³ <https://www.phemac.eu/>

³⁴ The INTERREG MED Programme - <https://interreg-med.eu/about-us/futureinterregmedprogramme/>

³⁵ <https://www.enicbcmmed.eu/about-us/the-programme-at-a-glance>

- Regional institutional players e.g. the Union for the Mediterranean (UfM), an intergovernmental institution; and
- Bilateral cooperation agreements between the EU and southern countries.

4.4.2.1 Coherence with the EU RTD Framework Programmes

This sub-section considers the coherence between the PRIMA Programme, Horizon 2020, Horizon Europe and the European Partnerships within Horizon Europe.

The most important alternative, but complementary funding sources to PRIMA are the **EU RTD Framework Programmes**, i.e. Horizon 2020 in PRIMA's 2018-2020 period and during the remainder of the current PRIMA programme to 2027, the new Horizon Europe programme.

The topics supported under H2020 were broadly complementary to those supported under PRIMA. For instance, one of the areas in focus under the **"Climate action, environment, resource efficiency and raw materials Challenge" in Horizon 2020**³⁶ was water. In the 2016-2017 AWP in H2020³⁷, for instance, there was support for (1) Supporting international cooperation activities on water (SC5-11-2016) (2) Food systems and water resources for the development of inclusive, sustainable and healthy Euro-Mediterranean societies (SC5-12-2016) and (3) Closing the water gap (reconciling water supply and demand in both quantitative and qualitative terms) SC5-33-2017. Since 2018, PRIMA has built on earlier AWP's under H2020 by providing complementary support targeted at Mediterranean countries through the theme of water management.

The SRIA developed through PRIMA is complementary to the progress being made through broader EU initiatives, namely the **Strategic Research and Innovation Agenda of the Water Joint Programming Initiative (JPI)**³⁸. It should be noted that whereas PRIMA focuses on the Mediterranean area, the JPI is more broadly focused on the whole of Europe. The Water JPI SRIA 2025 core research themes are 1) Ecosystems, 2) Health and Wellbeing, 3) Water Value and Usage and 4) Sustainable Water Management. Therefore, the thematic areas within the JPI are different in some cases, or where there are overlaps with PRIMA (e.g. Water Value and Usage and Sustainable Water Management), are complementary, given the different geographic focus (EU-wide vs. PRIMA focusing on water management as a tool to meet growing needs and to overcome scarcity in the context of climate change). There are strong synergies and complementarities between the Water JPI SRIA, the PRIMA SRIA and the focus on water management at the thematic level through PRIMA projects supported during the 2018-2021 period to date.

PRIMA's SRIA and the specific objectives outlined under the water management theme are making a direct contribution towards addressing the needs of the **United Nations (UN) Sustainable Development Goals (SDGs)**, in particular to UN SDG 6 ("Ensure availability and sustainable management of water and sanitation for all"), and the **European Green Deal**, while also strengthening EU and international cooperation through joint efforts to address global water challenges. For instance, examples of topics covered under PRIMA calls under the water management theme include *inter alia*: (1) Sustainable soil and water management for combating land degradation and desertification and promoting ecosystem restoration (2) Sustainable and integrated management of natural and artificial water storage systems and distribution infrastructure and (3) Alleviating Mediterranean water scarcity through adaptive water governance. Thematic areas addressed include aquifer modelling (storage, depletion trajectory), sea water intrusion and salinization, combatting contamination of the water cycle and transnational cooperation in the sustainable management of

³⁶ Horizon 2020 climate action, environment, resource efficiency and raw materials challenge -

<https://op.europa.eu/en/publication-detail/-/publication/8b288534-275a-477a-af39-4fb77439c91c>

³⁷ https://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-climate_en.pdf

³⁸ <http://www.waterjpi.eu/mapping-agenda/strategic-research-and-innovation-agenda-sria>

water resources. These priorities within water management are highly relevant to the Water JPI SRIA 2025 and to SDG6.

Regarding the PRIMA thematic area of strengthening agro-food production, this is an important economic and social priority in participant states across the Mediterranean. The focus on agro-food has strong synergies with other transnational R&I programmes and is also a major priority of other regional R&I and policy actors in the Mediterranean basin. Regarding synergies between PRIMA and the EU RTD Framework Programmes (FPs) H2020 has also supported agro-food production through the broader thematic focus on **Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and the Bioeconomy**³⁹. Whereas the focus in H2020 was broader in terms of thematic and sectoral focus, PRIMA has a more specialist focus on strengthening agro-food production both in conventional and/or organic farming systems.

Thematic level synergies between PRIMA and the EU RTD FPs appear likely to continue during **Horizon Europe**. For example, under Horizon Europe, there has been a Call on Land, ocean and water for climate action (HORIZON-CL6-2021-CLIMATE-01) as part of the European Partnership Water Security for the Planet (Water4All)⁴⁰. The purpose of research projects being funded is to foster the adaptation of water resources to climate change, which is complementary to PRIMA's water management annual calls for proposals. However, the latter is spatially targeted on participant states in the Mediterranean area, whereas R&I actors in all countries can apply to Horizon Europe's Water4All.

European Partnerships are a new structure within Horizon Europe designed to bring the European Commission and private and/or public partners together to address some of Europe's most pressing challenges through concerted research and innovation initiatives. However, these include Art. 185 and 187 partnerships, which build on those supported in Horizon 2020 (which includes PRIMA as an Art. 185 initiative). In addition, there will be funding support for Institutionalised European Partnerships which build on the Joint Programming Initiatives in H2020⁴¹. In addition, the EIT Knowledge and Innovation Communities (KICs) are also institutionalised partnerships. They were already established under Horizon 2020 and typical partners in EIT KICs include higher education institutions, research organisations, companies and other stakeholders. The two EITs that appear most relevant to the work of PRIMA are:

- EIT Food: EIT Food connects businesses, research centres, universities and consumers.
- EIT Climate-KIC: Drivers of climate innovation in Europe and beyond.

There could potentially be synergies at the policy level and through partnerships between the above-mentioned KICs and PRIMA, given the inter-relationship with some of the thematic priorities being supported through PRIMA. There are synergies between PRIMA and EIT food and climate KICs and their activities are very relevant. For instance, EIT food doing some work on the south - focusing on water scarcity. There has been contact and PRIMA and these two EIT KICs invite one another regularly to participate in meetings. However, there has not been any substantive cooperation unlike with the UfM.

The interview programme and case study research found that many R&I actors (especially those from EU Member States) participating in PRIMA had also been taking part in H2020 projects. However, especially in some southern participant states outside the EU, there have also been many new R&I actors that had participated in PRIMA that had not previously been successful in applying to H2020, the best-known transnational R&I excellence programme globally, which is highly competitive. In this

³⁹ <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/food-security-sustainable-agriculture-and-forestry-marine-maritime-and-inland-water>

⁴⁰ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl6-2021-climate-01-02>

⁴¹ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe_en

sense, through the participation of north African and Mediterranean PS (see data in the portfolio analysis in Section 3.4), PRIMA has contributed to the objective of widening participation within H2020 and Horizon Europe. As such, by supporting both better established R&I actors across the Mediterranean region and relative newcomers, PRIMA has shown strong coherence with the RTD FPs and in so doing has contributed to its own objectives of enhancing research capacities and strengthening the ability of R&I actors from outside the EU to participate in transnational, excellence-driven research and innovation programmes.

4.4.2.2 Coherence with other transnational programmes focused on the Mediterranean area

The **Interreg MED Programme 2014-2020** was a transnational European Cooperation Programme for the Mediterranean area. It brought together 13 European countries from the Northern shore of the Mediterranean that work together to promote sustainable regional growth⁴². The budget for the 2014-2020 period was approximately 265 Mio €, 224 Mio of € ERDF (European Regional Development Fund), 9 Mio IPA (Instrument of Pre-Accession) and national co-funding. The programme supported projects that develop innovative concepts and practices to promote better use of resources. This EU-funded cooperation and partnership-based initiative in the Mediterranean area programme is already in its third cycle. The priorities included *inter alia* job creation, the inclusion of young people, climate change, economic integration, etc.

The main objective of the follow-up **Interreg Euro-MED 2021-2027 Programme** is to contribute to the transition towards a climate-neutral and resilient society, to combat the impact of climate change on Mediterranean resources, whilst ensuring sustainable growth and well-being among citizens. INTERREG EURO-MED will co-finance transnational projects to fulfil its 4 missions. These missions are:

- Mission 1: Strengthen an innovative sustainable economy (including the transition to a circular economy).
- Mission 2: Protect, restore and valorise the natural environment and heritage.
- Mission 3: Promote green living areas
- Mission 4: Enhancing sustainable tourism. This mission will concern all projects that fit into the 3 above mentioned missions.

The programme's total budget is expected to be about 281 million € in total and will be financed through Interreg funds (ERDF and IPA), around 225 million €, with national contributions from Member States participating in the Programme (56M €).

The Programme will welcome 2 new countries, Bulgaria and Republic of North Macedonia (IPA country) and 3 new Spanish regions: Castilla-la-Mancha, Comunidad de Madrid and Extremadura bringing the total of participating Spanish autonomous regions to 9.

There are distinctions in terms of the thematic areas within focus. Whereas PRIMA focuses on water management, agro-foods and farming systems (along with multi-disciplinary approaches to promoting sustainable development), INTERREG EURO-MED focuses more on protecting the environment and heritage, promoting green living areas and tourism. A commonality between PRIMA and the Interreg MED and Interreg EURO-MED Programme are they are both focused strongly on strengthening the sustainability and resilience of the Mediterranean area and as such, are aligned with the UN SGDs and the European Green Deal.

The **ENI CBC MED Programme 2014-2020** also aimed to foster closer transnational cooperation between different Mediterranean countries. The aims were to foster fair, equitable and sustainable development on both sides of the EU's external borders. The overarching objective was to promote economic and social development, and more specific objectives were *inter alia*, promote business and

⁴² <https://interreg.eu/programme/mediterranean/>

SMEs development, support technological transfer and commercialisation of research results, strengthen the linkages between research, industry and other private sector actors, including in accessing research and innovation, also through clustering, to encourage sustainable tourism initiatives, and to promote social inclusion and the fight against poverty⁴³. The programme was the largest Cross-Border Cooperation (CBC) initiative implemented by the EU under the European Neighbourhood Instrument (ENI).

Its successor, the **NEXT MED Programme 2021-2027** will involve a broader range of 15 countries - Algeria, Cyprus, Egypt, France, Greece, Jordan, Israel, Italy, Lebanon, Malta, Palestine, Portugal, Spain, Tunisia, and Turkey. Whilst there is some overlap between the participant countries in **NEXT MED and in the PRIMA Programme**, the thematic focus is different (as with the Interreg EURO-MED Programme). The ENI CBC MED Programme will be funded by the Neighbourhood, Development and International Cooperation Instrument (NDICI) in 2021-2027.

Regarding thematic objectives and priorities, the strategic programming framework in the 2021-2027 programme is based on 4 Thematic Objectives and 11 Priorities as a contribution to the main socio-economic and environmental challenges of the Mediterranean region. Some thematic areas being supported are much broader than in PRIMA e.g. sustainable tourism, social economy and solidarity, waste management, energy efficiency and renewable energy. However, there are some thematic areas that are complementary to those being supported under PRIMA such as technology transfer and innovation and SME's access to R&I. The closest thematic overlap is in respect of water efficiency i.e. supporting sustainable initiatives targeting innovative and technological solutions to increase water efficiency and encourage the use of non-conventional water supply. However, this could be argued to be complementary with PRIMA given the scale of the challenges facing the Mediterranean area in light of climate change, and the importance of water to a broad range of sectors, including agro-foods and farming systems.

The overall EU contribution of the Programme for the 2014-2020 period is € 209 million, out of which €188 for project financing. Nearly €20 million are dedicated to Technical Assistance in order to ensure the timely, smooth and efficient implementation of the Programme. A key difference with PRIMA is that projects can be 90% EU funded, whereas under PRIMA Section 2 projects, as an Article 185 initiative, joint financing is required between the EU and participant states.

4.4.2.3 Coherence with regional and national R&I programmes

Regarding the role of **regional and national R&I programmes** and their thematic coherence with PRIMA, some countries also support initiatives that are complementary to PRIMA. The relevance of PRIMA's thematic support for water management in terms of the alignment with national R&I strategies can be evidenced by the fact that some Member States have developed strategies in areas such as water management, agriculture, fisheries, sustainable food production. For instance:

- Malta is a PS and has produced a National Strategy for Malta on Research and Innovation in Energy and Water for the 2021-2030 period ⁴⁴.
- The Strategy for Water in the Western Mediterranean (WSWM) aims to preserve water quality and to balance the quantity of used and available water to achieve regional sustainable economic growth, social prosperity, access to water for all and environmental protection.⁴⁵ Algeria and Spain led the process of developing the strategy in collaboration with France, Italy, Libya,

⁴³ CROSS BORDER COOPERATION WITHIN THE EUROPEAN NEIGHBOURHOOD INSTRUMENT (ENI) - MEDITERRANEAN SEA BASIN PROGRAMME 2014-2020

https://www.enicbmed.eu/sites/default/files/Documents/ENI%20CBC%20MED_%20JOP_Mod.%20July%202021_C_2021_4327_1.PDF

⁴⁴ <https://sustainabledevelopment.gov.mt/wp-content/uploads/2021/10/Draft-National-Strategy-for-Research-and-Innovation-in-Energy-and-Water-2021-2030.pdf>

⁴⁵ https://remoc.org/wswm/WSWM_032015.pdf

Mauritania, Morocco, Portugal, Tunisia and Malta.

- Spain has issued a water governance strategy which emphasises the efficient, sustainable use of water guaranteeing supply for all.⁴⁶ In 2019, the government published the Digitisation Strategy for the Agri-food and Forestry Sector and Rural Areas.⁴⁷
- Croatia's Water Management Strategy provides a framework for the sustainable use of water in the country.⁴⁸
- In Turkey, the Strategic Plan of the Ministry of Agriculture and Forestry aims to enhance food security, public health and economic growth through value added plant and livestock breeding in an efficient, productive and ecologically sustainable manner.⁴⁹
- The Smart Specialization Strategy for Cyprus contains agriculture and food as a priority area, which is concerned with agricultural and livestock production and food security.⁵⁰
- In France, the municipalities are responsible for water management. Local water agencies distribute funds for water management projects, such as the restoration of waterways.
- More generally, the Portuguese Environment Agency (APA) has outlined its role in the management of water, including its efficient use as a scarce resource.

Regarding the alignment of national strategies and research programmes between PRIMA and national programmes, the **4PRIMA CSA project**⁵¹ worked specifically in this area between 2016-2018 prior to the establishment of PRIMA. The purpose was to ensure alignment of national strategies and research programmes on food systems and water use in the Euro-Mediterranean Area with the PRIMA priorities. The 4PRIMA project helped contribute to optimising the dedicated resources and overall cooperation of development of national strategies. This was achieved by having major stakeholders involved in activities to develop national strategies from the very beginning.

The regional and national R&I programmes identified do not however appear to duplicate PRIMA as they involve national programmes, whereas PRIMA's focus is on transnational R&I cooperation.

4.4.2.4 Coherence between the work of PRIMA and key regional and international actors (e.g. UfM, CIHEAM, FAO)

The **Union for the Mediterranean (UfM)** is an intergovernmental institution set up in 2008 bringing together 42 countries to promote dialogue and cooperation, and to increase the potential for regional integration and cohesion among Euro-Mediterranean countries. The interviews with UfM staff responsible for different thematic areas and desk research identified strong complementarity between the work of the UfM and the PRIMA Programme. In particular, whereas the UfM focused on addressing policy-related challenges common to the broad spectrum of Mediterranean countries involved, PRIMA provides funding support to turn policy ideas into practical R&I-led solutions. For this end, the UfM's strong political support, given strong diplomatic representation from all participant countries, and its focus on developing proposed policy solutions to deep-seated challenges inherently support PRIMA's effort of developing joint solutions to shared challenges. As such, the activities of the UfM and PRIMA are closely symbiotic.

Furthermore, in terms of priority areas, it is not surprising that both UfM and PRIMA have a strong focus on water, given the challenges faced in the Mediterranean around water scarcity and

⁴⁶ https://www.miteco.gob.es/es/agua/temas/sistema-espaniol-gestion-agua/0%20Catalogo%20gobernanza%20del%20agua_tcm30-215766.pdf

⁴⁷ https://www.mapa.gob.es/images/en/digitisationstrategy_tcm38-513192.pdf

⁴⁸ <http://extwprlegs1.fao.org/docs/pdf/cro186416.pdf>

⁴⁹ <http://extwprlegs1.fao.org/docs/pdf/tur193517.pdf>

⁵⁰ https://www.structuralfunds.org.cy/uploadfiles/e-Library/S3CY_FINAL%20corrections%2031032015.pdf

⁵¹ <https://cordis.europa.eu/project/id/724060/reporting>

management. In that sense, the UfM's priority thematic areas include for example the Water-Energy-Food-Ecosystem Nexus (WEFE)⁵², very present across PRIMA projects as well. Besides, sustainable food production is a further shared priority highlighted by interviewees as relevant to both entities under their efforts on Green/Blue circular economies. This has allowed for the partnership to expand, generating new opportunities to cooperate in which UfM provides the political context and PRIMA the practical stimulation by offering funding and the scientific implementation. Further synergies are brought to live given the very close collaboration between UfM and PRIMA, with for example UfM contributing to the co-creation process of the SRIA.

UfM, PRIMA and other regional stakeholders have also been working together on specific initiatives. For instance, the Sustainable Food Systems (SFS) initiative is supported by the FAO, the CIHEAM and the UfMs, and is affiliated to the UN #OnePlanetNetwork Sustainable Food System. This multi-stakeholder initiative was jointly developed by the UfM and PRIMA. A big conference is planned in 2022.

In addition, PRIMA has actively engaged with the European Commission's Community of Practice organised by DG RTD and the JRC. PRIMA will contribute to a CoP on the NEXUS approach. The intention is to bring together researchers and scientists, practitioners, policymakers and other stakeholders coming together as a Community of Practice at a regional network of demonstration sites⁵³.

A further organisation that has PRIMA has engaged closely with CIHEAM (the International Centre for Advanced Mediterranean Agronomic Studies) during the 2018-2021 period. CIHEAM is also involved in the SFS platform mentioned above.

PRIMA has also engaged with international organisations that work in similar thematic areas to strengthen coordination and cooperation, and to promote synergies where possible. For example, PRIMA has strong relations in the area of agro-foods with the Food and Agriculture Organization of the United Nations (FAO). A recent example of such cooperation is that within the framework of the 2021 UN Food Systems Summit, the FAO, CIHEAM, and the Secretariat of the Union for the Mediterranean (UfMS), and the PRIMA Foundation co-organised two Independent Food Systems Summit Dialogues on "Pathways for the future of Sustainable Food Systems in the Mediterranean".

The dialogues fostered a broader common understanding of the complex environment of Sustainable Food Systems (SFS) for coping with the growing and interdependent challenges facing the Mediterranean region. This took place within the context of the One Planet Network's Sustainable Food Systems Programme (OPN-SFSP).

Overall, in pursuing cooperation with regional and international partners, PRIMA has been successful in engaging with relevant stakeholders. PRIMA has successfully established itself as a key player in thematic areas such as agro-food and water management. PRIMA has gained experience in taking part in multi-stakeholder and multi-disciplinary fora through scientific, technical and policy dialogue. Whilst partnership-based cooperation with such stakeholders has been successful to date, the PRIMA Foundation needs to continue to build on initial successes in taking part in multi-stakeholder initiatives and to strengthen its visibility, including international presence outside the Mediterranean, as there may be scope for cooperation with wider partners in geographic areas facing similar challenges.

It can also be noted that both the FAO and UfM have experts that sit on the new Scientific Advisory Committee of the PRIMA Foundation (SAC). This should help to reinforce coordination and cooperation with these important stakeholders (both in the Mediterranean area and internationally).

⁵² https://ec.europa.eu/environment/enlarg/med/ufm_en.htm

⁵³ Translating the Water, Energy, Food and Ecosystem (WEFE) Nexus Approach Into Practice: Towards A Mediterranean WEFE Nexus Community Of Practice.

4.4.2.5 Bilateral EU-Mediterranean relations

It is also important to mention the relevance of **bilateral EU-Mediterranean relations**. Whereas the UfM is the main regional forum, EU-Southern Mediterranean relations are managed predominantly through Euro-Mediterranean Association Agreements with individual countries⁵⁴. The agreements between the EU and the southern Mediterranean countries were formerly based on the Euro-Mediterranean Partnership before this was dissolved and transformed into the UfM. Each agreement is adapted to the specificities of the non-EU country concerned, but shares the same basic structure covering a broad range of issues (e.g. political dialogue; the free movement of goods and establishment of services, etc. The main areas with relevance to PRIMA are arguably: economic cooperation, and cooperation on environmental protection. These agreements provide a broad cooperation framework, which is helpful strategically from a coherence perspective for PRIMA in ensuring that there is an overarching political framework in which cooperation between EU MS and Mediterranean countries outside the EU that are participant states in PRIMA can cooperate.

4.4.2.6 Coherence between PRIMA's thematic priorities and wider EU policies

Lastly, synergies between PRIMA support for water management and to strengthen agro-food production through the use of innovative technologies and the contribution towards the achievement of **broader EU policies and initiatives** can also be noted.

Examples are EU policies such as the European Green Deal, and the new EU Strategy on Adaptation to Climate Change, the Farm to Fork Strategy (the role in the area of R&I and sustainable food), the Zero pollution Action Plan, and the EU Water Framework Directive (WFD).

PRIMA is also aligned with the key EU policy goal of achieving Green transition: climate resilience, energy, and environment key action identified in the “Joint Communication on a renewed partnership for the Southern Neighbourhood” called “The new Agenda for the Mediterranean”, which offers opportunities for new partnerships on strategic priorities of green and digital transition and is centred on a partnership-based approach⁵⁵. This agenda will guide the cooperation 2021-2027 with the Southern Neighbourhood countries, which have also been recalled in the recently adopted EU communication on Europe's Global Approach to Research and Innovation, Europe's strategy for international cooperation in a changing world.

At the **regional level**, PRIMA has achieved strong alignment between its SRIA and strategic planning activities and the broader UfM policy framework, including the UfM Ministerial Declaration on the UfM Water Agenda, the UfM Ministerial Declaration on Environment and Climate Change, and the Valletta Declaration on Strengthening Euro-Mediterranean Cooperation through Research and Innovation.

More broadly, PRIMA's activities and thematic focus also have some relevance to the EU Common Agricultural Policy (CAP) and European Innovation Partnership for Agricultural Productivity and Sustainability (EIP AGRI), the EU Bioeconomy Strategy, and the EU Integrated Maritime Policy and the EU Common Fisheries Policy.

4.5 Added value

A number of research questions under the Added value criterion are concerned with PRIMA's role compared to what is possible to achieve through regional, national and bilateral or transnational efforts. PRIMA's added value with regards to leveraging of resources is specifically explored.

⁵⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Ar14104>

⁵⁵ Renewed partnership with the Southern Neighbourhood, A new Agenda for the Mediterranean, Brussels, 9.2.2021, JOIN(2021) 2 final, https://eeas.europa.eu/sites/default/files/joint_communication_renewed_partnership_southern_neighbourhood.pdf

The study's key finding in this regard is that PRIMA plays a distinct if not unique role in the Mediterranean region. PRIMA builds on previous initiatives addressing R&I cooperation in the region, and the programme also works in parallel with other Mediterranean initiatives, however at the same time, the programme serves a specific role not occupied by others.

Desk research and stakeholder interviews point to that PRIMA's role is complementary to the work carried out by other regional stakeholders. In this sense there is high degree of coherence between initiatives (see section 4.4). With regards to PRIMA's added value in the Mediterranean region, PRIMA's activities add value to other initiatives that support demonstration and pilot projects in the region. In this regard, PRIMA supports a wider range of TRLs which is viewed as a positive in terms of funders being able to offer a wider range of support. Compared to other Mediterranean transnational programmes, PRIMA's thematic focus is more targeted on selected sectors. This is another added value. Finally, PRIMA's geographical scope is wider than e.g. relevant Mediterranean Interreg programmes and thus allows for a wider participation of countries across the basin. This is considered to be a key added value of PRIMA since the programme can bring non-EU countries into closer cooperation in key issues affecting the region. This would potentially amplify the scope of impact possible to achieve.

In terms of room for improvement to better make use of the added value that PRIMA is considered to possess within the wider regional network, stakeholders would welcome a closer and more systematic cooperation at policy and funding level.

With regards to PRIMA's **added value from the national level perspective**, this is considered to be significant overall. From the perspective of the Participating States, there is a consensus that PRIMA provides added value, however this added value is described differently depending on the national circumstances. All Participating States consider PRIMA's general objective of pooling resources and aligning research agendas to be an added value not fully attainable through other programmes. The fact that PRIMA is, in line with Article 185 initiatives, both a political tool as well as a funding tool, makes it an important forum in which to invest. National stakeholders from across the Mediterranean region also recognise the political investments and diplomacy behind the establishment of PRIMA and the ministerial support behind these efforts. This adds significance to PRIMA compared to other EU and regional initiatives. Stakeholders also recognise the importance of the principles of joint leadership, joint management and joint cooperation.

From the perspective of the South Mediterranean countries, PRIMA constitutes a channel for participating in EU R&I collaboration on more equal terms than what is possible through other programmes (notably the EU Framework Programmes for RTD). This statement is generally agreed by both PS policymakers from the South as well as PRIMA project coordinators based in South Mediterranean countries. From a policy perspective, PRIMA constitutes a forum for exchanging experiences and views on R&I policy management. As described elsewhere in this report, this policy exchange has led to changes in R&I management. From the perspective of R&I performers, participation in PRIMA is an entry way into further EU cooperation. It also constitutes a quality stamp important to R&I performing individuals and organisations alike.

For PRIMA project coordinators, an added value is the possibility of cooperating more widely with other R&I actors and other relevant stakeholders, such as end-users, across the Mediterranean. Wider participation in terms of geographical translates into better access to research teams and end users across the Mediterranean. This has important scientific consequences as well as positive outcomes on R&I networks.

Regarding the **leveraging of resources** by PRIMA, indicative EU funding of €220 million to the programme funded through Horizon 2020 and Horizon Europe respectively has generated a positive leverage effect to date by securing additional financial and non-financial contributions from across the 19 Participating States taking part in PRIMA.

A detailed definition was provided as to how the leverage effect has been assessed in the cumulative report 2018-2021.⁵⁶

$$\text{Leverage} = \frac{\Sigma FC PS (\text{Sec.2 fin.contr} + \text{Sec.2 inkind} + \text{Sec.3 In kind})}{\Sigma EU contribution}^{57}$$

Source: PRIMA Foundation Cumulative Report 2018-2021. Note – FC PS = financial contribution of Participant States.

The leverage ratio has been estimated by the PRIMA Foundation in the Cumulative Report 2018-2021 based on data set out in the AARs. The leverage effect varied slightly each year but was above 1:1. The detailed calculations and input values (e.g. direct financial contributions, in-kind contributions, Section 3 activities) for assessing the leverage effect each year are set out in the cumulative report. In summary, the average leverage effect in 2018-2021 was 1:1.40. The data each year since PRIMA began was:

Year	Leverage
2018	1.55
2019	1.69
2020	1.03
2021	n/a
Total 2018-2020	1.40

Source: PRIMA Cumulative Report 2018-2021

A key finding from the interviews was that financial commitments in the form of co-funding from Participant States were not always forthcoming. However, this is not uncommon in Art. 185 and Art. 187 initiatives involving public private partnerships. More positively, despite the difficulties in securing the funding commitments made by PS to funding Section 2 projects in full, there have been additional financial inputs and in-kind contributions to PRIMA by some PS through Section 3 projects involving nationally-funded activities. Section 3 projects have therefore helped compensate for the difficulties in implementation relating to the materialisation of all funding commitments to the PRIMA programme. This has maintained the overall leverage effect as there has been additional PS funding for national projects which have also been crucial in ensuring alignment between PRIMA's strategic objectives as outlined in the SRIA and in national / regional R&I programmes and strategies. For 2021, it can be noted that there has been a significant increase in Section 3 funding to EUR 61.77 million^{34,301,918} compared with EUR 25.1820.12 million in 2020, EUR 34.0929.95 million in 2019 and EUR 8.0225.25 million in 2018.

⁵⁶ The leverage effect is the ratio between the costs incurred by PRIMA PS and the total amount of EU funding paid to PRIMA beneficiaries at the cut-off date of the data reported in the Annual Activity Reports. PS contributions take into account not only the direct financial contributions to beneficiaries from PS (Section 2 calls), but also the costs incurred by all funding bodies in the implementation of indirect actions (in-kind contributions of Section 2 calls), and the costs of other activities (in-kind contributions for Section 3 activities).

⁵⁷ EU funding paid to PRIMA beneficiaries at the cut-off date of the data reported in the Annual Activity Reports.

5. Conclusions and recommendations

Section 5 presents the study conclusions and recommendations to assess the performance and impact of the PRIMA programme. In addition to the main conclusions and recommendations, Section 5 also highlights examples of good practice identified.

5.1 Conclusions

The conclusions are drawn from the key evaluation findings presented in Section 4. They are structured according to the five evaluation criteria under consideration.

5.1.1 Conclusions on the Relevance of PRIMA

The overall conclusion of this study is that PRIMA's relevance is high. The programme is highly relevant for the Mediterranean basin Participating States and the region's R&I stakeholders alike. Given the wider socioeconomic implications of climate change in the Mediterranean region, by extension PRIMA is also highly relevant to the achievement of key overall EU policy priorities (e.g. relating to the European Green Deal and the EU's contribution to the SDGs and climate change resilience and adaptation).

The PRIMA's SRIA was considered to be highly relevant to the identified needs of the Mediterranean in terms of the general and specific objectives that have been set. These have proved pertinent in providing an overall focus for the programme. The SRIA is considered to be robust and relevant from a scientific perspective and to be highly relevant to the needs of policymakers and R&I performers. Given that finite resources are available through the PRIMA budget, the balance between the topics and projects funded is considered to be fair overall (i.e. topics supported in annual calls are relevant to the PS across the Mediterranean region).

The PRIMA programme was established in 2017, but builds on previous relevant initiatives. In contrast to preceding comparable programmes (e.g. ERA-NETs), PRIMA was set up as an Article 185 initiative, implying closer coordination by the PS at the policy and funding levels than other types of cooperation. Although this set-up requires more efforts and dialogue by PS, stakeholders recognised the strategic benefits and relevance of this closer cooperation in bringing about more sustainable forms of cooperation than would have been the case outside an Art. 185 structure.

The fact that PRIMA promotes cooperation on an equal footing (including governance of the programme) between the North and South Mediterranean has helped to foster cooperation between relevant R&I actors across the region although further efforts are needed in this regard. The approach to cooperation adopted to date can be seen as unique and an example of good practice.

Although PRIMA is technically open to a wider range public and private R&I performers, including SMEs, the programme has had lower participation from the private than the public sector, but this is not uncommon for R&I initiatives of this type. There are several factors contributing to this. At the programme level, there is a lack of PS ministries and agencies representing industry and SMEs. Moreover, in some PS, the allocation of R&I funding to private sector organisations and businesses is only beginning to emerge as a policy concept. Thirdly, PRIMA's call for proposals and evaluation procedures are in line with EU funding guidelines, which tend to favour well-established universities who are (generally) closely familiar with the application procedures, project management and coordination arrangements, including the role of the lead coordinator, and are also better at demonstrating scientific excellence at proposal stage compared with other R&I performers.

5.1.2 Conclusions on the Effectiveness of PRIMA

The assessment of effectiveness considered the extent to which the general and specific objectives of PRIMA have been achieved to date. It should firstly be recognised that as this is an interim evaluation, it is only possible to assess progress in the 2018-2021 period, and therefore, whilst there are many outputs and initial results, some of the outcomes are preliminary in nature.

The overall conclusion is that the PRIMA has been effective, but this needs to be put into context.

Regarding the **general objectives** set out in the PRIMA SRIA, the programme has made good progress in strengthening research and innovation capacities in the Mediterranean area across the different thematic areas it supports (e.g. agro-food systems, integrated water provision and management, and strengthening farming systems). The SRIA provided an agreed strategic framework in the form of the SRIA that influences the programme's overall direction of travel and which helps to align national and regional R&I strategies with those of PRIMA (and vice versa).

Consequently, the programme enjoys strong political support across the PS at the ministerial level and among regional Mediterranean stakeholders (e.g. UfM, with its extensive political and diplomatic representation in addition to its technical policy know-how among its permanent staff). Given the heterogeneity of the PS and the fact that PRIMA PS include a number of countries with emerging rather than established national R&I systems, this represents positive progress to date.

In terms of progress towards the development of knowledge and common innovative solutions, it is too early to assess this general objective fully, as at interim evaluation stage, many projects are ongoing. Cumulatively, however, through its various projects, the programme has generated some useful knowledge across projects supported through its core thematic areas of intervention.

More generally, PRIMA has contributing to strengthening the capacity of R&I actors and broader societal and economic actors to become more climate-resilient, for instance by contributing to solving water scarcity, and enhancing food security through improved agro-food production techniques. The large number of demonstration sites and living labs constitutes a promising sign of future innovative solutions for market readiness. It is also a positive indication of user involvement in PRIMA projects.

Regarding **progress towards specific objectives**, as far as the alignment of national R&I programmes and procedures is concerned, evidence showed that some national R&I programmes have been developed in a way that suggests alignment with the PRIMA's SRIA. This reflects the fact that the PS were closely involved in the process of elaborating the SRIA, with feedback from the bottom up being taken into account in drafting the SRIA. Moreover, interviewees suggested that PRIMA's objectives and thematic priorities are highly relevant in addressing the identified needs of the Mediterranean area.

PRIMA has also shown effectiveness in its ability to encourage closer funding procedure alignment among some of its PS (e.g. Egypt, Italy and Spain and Jordan). Less positively, Section 2 projects were regarded as having been less successful in terms of alignment of procedures overall, as the PS funding of projects was subject to national financing rules, which in many PS were seen by project coordinators (and some national funding agencies) as being overly complex and administratively bureaucratic, whereas Section 1 projects were EU funded and the procedures used by PRIMA to manage the calls largely mirrored the H2020 rules that were already familiar to applicants and to participants.

Regarding how far PRIMA has contributed towards the achievement of the critical mass of actors and resources, insofar as the programme has encouraged participation by a wide range of R&I actors evidenced by the high number of beneficiaries and participations which has helped to widen participation by newcomers to transnational R&I projects. The programme has fostered critical research mass and enabled resources to be concentrated in those thematic areas identified as being pertinent to identified needs of the Mediterranean area.

At the programme (policy) level of PRIMA, the Board of Trustees, Steering Committee and Secretariat have made good progress in establishing an implementation structure for cooperation and implementation. This has provided a solid foundation to facilitate the programme objectives for the whole programming period.

The PRIMA programme has been effective in fostering closer cooperation and coordination in R&I between relevant R&I actors across the Mediterranean basin. This has taken place both at the project level, where a wide variety of R&I actors were involved and at other levels (e.g. cooperation and engagement by ministries (e.g. of research and innovation, education and science) and national funding agencies from PS, who previously often did not cooperate with one another, especially in terms of the absence of south-south cooperation (at least in all PS) prior to PRIMA.

To build on the various achievements outlined above, the next steps for PRIMA presumably include – in addition to continuing to encourage further alignment and coordination between PRIMA and national and regional R&I strategies – strengthening the programme identity through further regional engagement and more effective communication.

PRIMA has also been effective in the development of Annual Work Plans and in managing the launch, closure and evaluation of calls for proposals for R&I funding under the different thematic calls. Since 2018, 168 projects worth a total of EUR 226.8 million have been funded by the programme across the different thematic areas, with funding increasing every year until 2021, when the programme experienced a marginal dip in funding. Each project has an average value of EUR 1.4 million and 10 participants and there is a good mix of IAs and RIAs, demonstrating the programme's commitment to funding projects at all stages of development.

With regard to the PRIMA funding instruments, feedback from project coordinators and PS indicate that Section 1 grants have been implemented more effectively compared to Section 2 grants, as a result of the complex coordination required by the latter. This complexity has caused delays to some Section 2 projects and also hampered the implementation of some Section 2 projects in the cases where national co-funding has become unavailable for some project partners and thus in effect cancelled or amended work packages envisaged at the proposal and evaluation stage.

This shortcoming is one barrier to effective implementation also identified in other Article 185 initiatives⁵⁸. Given the wide awareness among PS that the lack of efficient coordination of funding hampers the overall effectiveness of the programme, this is a solvable problem.

With regards to assessing the effectiveness of individual project implementation, the conclusion at the interim stage of PRIMA is cautiously optimistic. As a result of the pandemic, all PRIMA projects have experienced delays and project coordinators have had to mitigate for travel restrictions etc. Nevertheless, this study's analysis indicates on the whole the quality and relevance of the projects funded indicate that their outputs will strongly contribute to the desired effects of PRIMA.

5.1.3 Conclusions of the Efficiency of PRIMA

The overall conclusion with regards the research questions concerning Efficiency is positive. However, this is concluded on balance taking into account the workings of PRIMA overall. While some of PRIMA's operations should be considered as highly efficient, at the same time, there is significant room for improvement in specific aspects.

There is a consensus that the PRIMA Secretariat is highly efficient. This conclusion is derived from an assessment of the costs of the Secretariat compared to its outputs and from the interview programme. There is a consensus from PRIMA stakeholders and project coordination that the work of the Secretariat and the support received from Secretariat staff is highly efficient. Efficiency is highlighted

⁵⁸ See for example the 2019 Impact Study on ECSEL JU.

by the fact that PRIMA manages projects funded by the EU and PS but its administrative costs are calculated only by the projects receiving EU funds that is less than half of the total.

The findings from this study also indicate that the Secretariat's operations related to the Annual Work Programmes (AWPs) and Call for Proposals are well implemented.

The work of the Secretariat and the Scientific Advisory Committee is trusted by Participant States. This includes the evaluation of project proposals which is managed by PRIMA independently.

The main barrier to efficiency in the evaluation of PRIMA project proposals is related to the availability/non-availability of PS funds which risks affecting the number of successful projects that can be funded and in some countries, the final list of successful projects, as some may have to be dropped if there is a funding shortfall from the national level.

Regarding the leverage effect of PRIMA, the programme has had a positive effect to date in terms of catalysing funding resources and in-kind contributions from across the PS in contributing towards the shared goals between PRIMA and PS set out in PRIMA's SRIA. The leverage ratio has varied between 1:1.73 and 1.01 in the years of implementation to date, but has remained above 1:1 since inception. This can be considered a successful achievement in terms of leverage on EU funding. Notwithstanding the difficulties mentioned above in securing consistent funding contributions from all PS (a problem in other Article 185 initiatives), this has been compensated by some of the PS' readiness to invest in Section 3 projects at national level in a way that has resulted in strategic alignment between PRIMA and national programmes and initiatives.

The aspect where there is most room for improving Efficiency is in the coordination and implementation of Section 2 grants which is the PRIMA funding instrument co-funded by PS.

Regarding the efficiency and effectiveness of the monitoring and indicator system, the MEL platform has since 2019 been a highly efficient means of gathering monitoring data, presenting and visualising the data and as such represents a powerful analytical tool for evaluation activities.

The data contained in the monitoring system is easily navigable by users and data visualisation is very strong and user-friendly. Moreover, the MEL can be accessed not only by the PRIMA Secretariat, participant states and project coordinators, but also some external stakeholders. This could help to strengthen the visibility of PRIMA over time. As such, this is a very useful tool that is already well developed, but with additional prototypes under development which could help to even further customise functionality in future.

Regarding the selection of indicators, the main conclusion is that PRIMA needs to collect monitoring data at different levels 1) thematic-level indicators to shed light on the scientific and technical achievements and research results generated by projects and 2) project-level indicators that can be aggregated across all themes to the programme level to shed light on progress towards the general, specific and operational objectives. In addition, 3) indicators to demonstrate how PRIMA is contributing towards the achievements of Horizon Europe related objectives, given that this is a major funding component, and more specifically, those indicators relevant to European Partnerships are needed, given that PRIMA as an Art. 185 initiative has been grouped together in 2021-2027 with a broader range of Partnerships than was the case in Horizon 2020.

5.1.4 Conclusions of the Coherence of PRIMA

5.1.4.1 Internal coherence

The PRIMA programme shows strong internal coherence in terms of the balance between funding, and regarding the spread of projects across different thematic areas and the geographic distribution of projects. This suggests coherent and effective management and planning by the PRIMA Secretariat working together with national authorities in PS in programme planning and in the development of

the AWP. There appears to have been effective coordination and communication between all partners and the PRIMA Secretariat in this regard, which has helped to ensure the coherence of the AWP across the 2018-2021 period to date.

There appears to be a good balance of projects funded across the four thematic areas, with a strong focus on supporting farming systems, which is considered to be central to the economy of the Mediterranean region. There is also a good balance between RIAs and IAs, indicating the PRIMA programme's support for projects at all stages in the R&I process across most TRLs.

The programme has also been coherent in ensuring that there was reasonably equitable participation across all PS, including those outside the EU. About 38% of beneficiaries were from outside the EU, which indicates a success in achieving PRIMA's objectives of widening participation and enhancing cooperation among partners in the Mediterranean.

5.1.4.2 External coherence

The PRIMA programme has demonstrated good external coherence overall in that there appear to be generally good synergies and complementarity between PRIMA and EU, national and regional R&I programmes in related thematic areas covering water management, farming systems and agro-food production.

Whilst there is some overlap between priorities under PRIMA and those under the EU RTD FPs, PRIMA is more geographically targeted on the Mediterranean area, including participant states outside the EU in a stronger way than Horizon 2020 or Horizon Europe.

PRIMA was found to be strongly complementary to some of the EU Partnerships, such as the strong links between PRIMA's water management priority and the new proposed European Partnership under Horizon Europe, WATER4ALL – Water Security for the Planet⁵⁹.

There are some additional major, part-EU funded transnational R&I programmes focused on the Mediterranean area, such as the Interreg MED Programme (2014-2020 and 2021-2027) and the ENI CBC MED Programme 2014-2020 and the NEXT MED Programme 2021-2027. However, these programmes are funded under different programming instruments (e.g. INTERREG, CBC, ENI, NDICI), and therefore, their objectives and thematic and funding priorities typically differ, although there are some areas of complementarity in the sense that some of these programmes focus on strengthening business and SME competitiveness, technology transfer and on improving access to R&I for SMEs, whereas PRIMA is much more targeted in these areas on the specific sectors it supports e.g. water management, farming systems and agro-food production.

A commonality between PRIMA and other EU and nationally co-funded programmes such as the Interreg MED Programme and the NEXT MED Programme 2021-2027 is that they focus strongly on strengthening transnational cooperation between relevant actors, the difference being that PRIMA focuses on R&I actors in the public and private sectors in the thematic areas covering water management, farming systems and agro-food production.

5.1.5 Conclusions of the Added Value of PRIMA

The overall conclusion with regards to added value is that PRIMA occupies a unique space in the network of pan-Mediterranean initiatives (see the assessment of external coherence in Section 4.4.2 which considers other programmes also targeted at the Mediterranean).

With regards to the added value of PS, the scale of PRIMA activities and funding cannot be replicated through national, bilateral or transnational efforts. Although other pan-Mediterranean funding instruments exist, the objectives supported by PRIMA but also the specific thematic priorities of water

⁵⁹ https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/ec_rtd_he-partnerships-water4all.pdf

management, agro-foods and farming systems are unique in terms of geographically targeted transnational R&I programmes. Whilst there is some overlap with Horizon 2020 and Horizon Europe thematic calls which touch on similar topics, PRIMA has added value by focusing specifically on these themes in the Mediterranean PS and actively encourages the participation of non-EU PS.

PRIMA's role is complementary to the funding instruments managed by other regional stakeholders, however thanks to the fact that PRIMA supports a wider range of TRLs, the programme offers additional R&I support not found elsewhere, with a strong focus on improving research excellence and enhancing critical research mass of R&I actors in PS, which has added value in terms of strengthening access to participate in transnational research programmes (e.g. in countries with a less successful track record of participation in H2020 and the EU RTD FPs). In this sense, an added value has been contributing not only towards PRIMA's own objectives but also widening participation under the R&I Framework Programmes.

PRIMA's geographical scope is wider than relevant Mediterranean Interreg and cross-border cooperation and neighbourhood instrument programmes and thus allows for a wider participation of countries across the basin. This is a positive aspect for improving North-South cooperation in the Mediterranean region. As seen in the portfolio analysis and also the case studies, the PRIMA programme has enabled the strengthening of cooperation between EU PS and countries in North Africa and the Middle East. Morocco and Tunisia, for example, have a significant number of beneficiaries involved in several projects across the different thematic areas. To some extent, the PRIMA programme has enabled countries across the Mediterranean to collaborate on new, innovative issues outside of the traditional areas of cooperation (e.g. security and immigration).

An unusual feature of PRIMA in terms of its added value is that it has fostered not only North-South cooperation in the Med, but also South-South, although greater difficulties remain in respect of ensuring full participation by all PS. However, interview feedback has suggested that partners are committed to finding the most effective ways of working together, embracing the cultural differences.

5.2 Recommendations

Section 5.2 presents the recommendations developed based on the study analysis and conclusions. The Recommendations section is presented according to the institutions to whom the recommendations are addressed.

5.2.1 Recommendations for the PRIMA programme

The PRIMA programme has produced promising research, knowledge and other outputs and outcomes in its first years. The high relevance of the programme to the Mediterranean region and the widespread support received by PS indicate that the programme should continue to build on its current achievements in the direction set out in the PRIMA programme's SRIA. However, there are a number of ways in which it might be improved.

- **Recommendation 1:** Whilst significant progress has been made in strengthening cooperation between national Ministries and funding agencies and R&I actors involved at the project level across the Mediterranean area, there is a need to further improve South-South cooperation in particular, and a need to build on the good progress already made in North-South cooperation.
- **Recommendation 2:** In order to improve on current shortcomings in Section 2 linked to funding arrangements, the PRIMA programme should work with PS to reform the current design of grant funding. In order to avoid a potential drop in demand for this funding instrument, the work to improve the efficiency of Section 2 funding (including the possibility of full or partial harmonisation of the funding rules across PS) should be made a priority.
- **Recommendation 3:** Given that PRIMA's work to align national research and innovation agendas

and funding procedures has shown promising initial results, PRIMA should continue to work with PS to streamline national funding procedures and continue to further align national and regional R&I agendas with PRIMA's SRIA.

- **Recommendation 4:** Given the possible bias inherent in the programme design and calls for application procedure (focused on scientific excellence and proposal requirements most conducive to public research and innovation performers), PRIMA could consider encouraging wider innovation actors to apply for funding, including strengthening the participation of SMEs. This may include ensuring that evaluation panels for grant applications are widely represented and include representatives with good knowledge of higher TRLs and end-users. A further possibility might be to set up a small pilot programme for an SME-focused call in which SMEs might lead projects to harness technological innovation and solutions of relevance to the economic, societal and environmental sustainability challenges being addressed by PRIMA.
- **Recommendation 5:** Opportunities to exchange knowledge, experiences and lessons learned between project coordinators and other participants should be strengthened even further, to build on the solid progress made so far. One possibility would be to organise webinars or events for projects that have either newly been funded or are in their early stages to learn from those that are already in their second or third year of implementation. This would promote the transfer of relevant experience between project participants and help to avoid risk of duplication in project research activities. This is already happening within the PRIMA programme to some degree, but could perhaps be expanded through, for example, the enhanced clustering of projects with similar or complementary topics and activities
- **Recommendation 6:** PRIMA has progressed well on the articulation of specific and operational objectives for the PRIMA. Overall, the objectives set are relevant for R&I activities in general as well as to the specific context in which the PRIMA programme is implemented. Suitable Key Performance Indicators have also been developed. To further improve on the current objectives and performance framework, PRIMA could consider shifting the current objectives, so that the specific objectives are referred to as general and the operational objectives become specific objectives. New operational objectives could then be – without much effort – derived from the current set of KPIs.
- **Recommendation 7:** Whilst good progress has been made in developing a set of monitoring indicators, additional indicators should be agreed upon in relation to those types of indicators presently missing e.g. indicators relating to how PRIMA will contribute to the achievement of Horizon Europe Partnerships. Indicators could also be strengthened in some areas (e.g. international engagement and the visibility of PRIMA).
- **Recommendation 8:** Whilst targets were set relatively recently in respect of 21 KPIs linked to operational objectives, target-setting for these KPIs could be reviewed to ensure that the targets are as realistic as possible (e.g. neither easy nor difficult to achieve but set at realistic level). Moreover, targets could perhaps be upset for measuring PRIMA's progress towards quantitative specific objectives wherever feasible.

5.2.2 Recommendation 9: The inter-disciplinary approach under NEXUS was effective in delivering innovative solutions. Therefore, the PRIMA Foundation should consider in parallel to having dedicated calls on NEXUS, the possibility of integrating interdisciplinarity as a horizontal theme formally in projects supported under other thematic areas. Recommendations for PRIMA Participating States

Section 5.2.2 presents recommendations addressed to PRIMA Participating States.

- **Recommendation 1:** Given the emerging promising results achieved by the PRIMA programme, this study recommends that Participating States continue their cooperation in PRIMA, building on the achievements to date. This should include further improving South-South cooperation and

North-South cooperation.

- **Recommendation 2:** Participating States in PRIMA should work together as a matter of priority to improve the efficiency of Section 2 funding and ensure that project proposals evaluated successfully are able to be funded and implemented during the originally envisaged period.
- The leverage effect of PRIMA has been positive and remained above 1:1 in all years to date. However, there is a need for the PS' funding agencies to reinforce their funding commitments as national partners in PRIMA to ensure that EU funding is matched in a way that ensures that Section 2 projects can be funded to the same degree as Section 1 projects, where there has been stronger funding reliability. **Recommendation 3:** In order to build on the initial results achieved, Participating States should continue to work with PRIMA and cooperate together to improve the efficiency and effectiveness of funding coordination. This includes ensuring, as far as financially feasible, that PRIMA project proposals that are successfully evaluated and selected for funding under Section 2 projects are fully funded by the PS.
- **Recommendation 4:** PS should, where feasible, review national procedures relevant to R&I funding to ensure that the administrative burden is minimised and the time to grant maximised.
- **Recommendation 5:** PS should, where feasible, reconsider the effectiveness in supporting private R&I performers, including SMEs, in order to provide broader and more comprehensive support for innovation activities in PRIMA. Agencies able to fund private entities should adhere to the Programme to enhance their participation

Annex 1 Evaluation Questions Framework

Table 5-1: Evaluations questions matrix

Research question (terms of references)	Sub-questions	Data sources	Indicators
Effectiveness			
What are the outcomes and impacts that have been realised so far in terms of operational alignment, national programmes alignment and policy alignment? Consider the alignment of internal programme procedures with the transnational initiative (criteria, calls, decision making, etc.)	<ul style="list-style-type: none"> What are the key achievements and outputs from the projects funded by the PRIMA programme? What types of (expected) outcomes can/will be observed? What are they key achievements observed at the programme level? E.g., through cooperation between participating states. To what extent has the PRIMA programme implemented effective internal procedures? In addition to the RTDI projects funded, what kind of activities have been carried out thanks to PRIMA? What have been the What stakeholder groups and countries have observed strong / weak outcomes? What are the main drivers and barriers behind outputs and outcomes? 	<ul style="list-style-type: none"> Monitoring and Learning Platform Project level documentation Programme level documentation Interview programme Case studies 	<ul style="list-style-type: none"> Extent and type of PRIMA project outputs Extent of change in the level of cooperation of PS Extent of PS investment? Extent to which PRIMA activities have been carried out according to the envisaged timeline
To what extent PRIMA is likely to achieve its objectives in terms of increased R&I capacities?	<ul style="list-style-type: none"> What are the key objectives for PRIMA to achieve in terms of increased R&I capacities? To what extent have the individual key objectives been achieved? What have been the main drivers and barriers to achieving each objective? To what extent are the key achievements likely to be sustainable? 	<ul style="list-style-type: none"> Monitoring and Learning Platform Project level documentation Interview programme Case studies 	<ul style="list-style-type: none"> Extent to which PRIMA projects have contributed towards improved R&I capacities
To what extent is PRIMA likely to achieve objectives in critical mass and contribute to establishing durable cooperation between partners? Consider the critical mass of potential clients (size, structure, on topic and preferred countries for cooperation)	<ul style="list-style-type: none"> What are the key objectives for PRIMA to achieve in critical mass and contribute to establishing durable cooperation between partners? To what extent have the individual key objectives been achieved? What have been the main drivers and barriers to achieving each objective? What stakeholder groups and countries have observed strong / weak outcomes? To what extent are the key achievements likely to be sustainable? 	<ul style="list-style-type: none"> Monitoring and Learning Platform Project level documentation Interview programme Case studies 	<ul style="list-style-type: none"> Size and scope of PRIMA projects (compared to national, regional, H2020 projects) Cooperation trends (network creation)

Research question (terms of references)	Sub-questions	Data sources	Indicators
To what extent PRIMA has achieved scientific, managerial, and financial integration?	<ul style="list-style-type: none"> • What have been the main mechanisms for scientific, managerial, and financial integration? • To what extent have these mechanisms been effective? • What have worked well/less well? What can be improved in terms of achieving integration? 	<ul style="list-style-type: none"> • Programme level documentation • Interview programme • Case studies 	<ul style="list-style-type: none"> • Extent to which scientific, managerial, and financial procedures are streamlined/integrated compared to before PRIMA
What are the main activities other than joint calls that have been implemented?	<ul style="list-style-type: none"> • What kind of activities have been funded by PRIMA other than calls? • To what extent have these activities produced outputs and outcomes? What has been achieved? 	<ul style="list-style-type: none"> • Programme level documentation • Interview programme 	<ul style="list-style-type: none"> • Level of cooperation outside of projects • Level of cooperation at the programme level
To what extent do PRIMA actions support the achievement of the overarching global objective of implementing the UN Sustainable Development Goals?	<ul style="list-style-type: none"> • What kind of activities have been more/less important for achieving the UN SDGs? • What drivers and barriers can be identified in terms of effectiveness of these activities? 	<ul style="list-style-type: none"> • Monitoring and Learning Platform • Project level documentation • Interview programme • Case studies 	<ul style="list-style-type: none"> • Level of alignment with the UN Sustainable Development Goals
To what extent do projects funded by PRIMA take into account innovation aspects?	<ul style="list-style-type: none"> • What kind of innovation have been funded? • How have innovation projects been evaluated and selected? • To what extent have the work programmes and SRIA been effective in supporting innovation? 	<ul style="list-style-type: none"> • Monitoring and Learning Platform • Project level documentation • Interview programme 	<ul style="list-style-type: none"> • Extent of innovation activities funded • Sophistication of innovation activities • Relevance of innovation activities

Research question (terms of references)	Sub-questions	Data sources	Indicators
To what extent do projects funded by PRIMA consider socio-economic aspects and involve end-users, particularly SMEs?	<ul style="list-style-type: none"> • How does PRIMA project ensure that socio-economic aspects end-users, particularly SMEs are catered for? • To what extent have these aspects been catered for effectively? • What have been the main drivers and barriers? 	<ul style="list-style-type: none"> • Monitoring and Learning Platform • Project level documentation • Interview programme • Case studies 	<ul style="list-style-type: none"> • Level of SME involvement in PRIMA projects (also role in value chain) • Level of end user involvement in PRIMA projects (also role in value chain) • Extent to which projects have socio-economic objectives
Efficiency			
What are the main problems and obstacles encountered in the preparation and submission of the proposals??	<ul style="list-style-type: none"> • What are the main problems and obstacles encountered in the preparation and submission of the proposals from the point of view of different kinds of RTDI performers? • What are main drivers and barriers behind these problems? • What works well in terms of the preparation and submission of the proposals? 	<ul style="list-style-type: none"> • Programme level documentation • Interview programme 	<ul style="list-style-type: none"> • Time/resources required for the proposal procedure • RTDI performers preference for participating in PRIMA compared to other instruments • Extent to which expert evaluators can be found
Is the proposal evaluation by external experts efficient? Consider transparency of evaluations	<ul style="list-style-type: none"> • To what extent do different kinds of RTDI performers find the evaluation review by external experts efficient? • To what extent do the external reviews find the process efficient? • To what extent do the PRIMA secretariat find the process efficient? • What works well and what could be improved? 	<ul style="list-style-type: none"> • Programme level documentation • Interview programme 	<ul style="list-style-type: none"> • Extent to which expert evaluators can be recruited • Suitability of expert evaluators • RTDI performers preference for participating in PRIMA compared to other instruments

Research question (terms of references)	Sub-questions	Data sources	Indicators
Do proposers, FA or PRIMA Foundation Secretariat encounter any problems in the grant preparation? Assess the efficiency of proposal review procedures, time to grant for S1 and S2 proposals, project negotiations, project delays, etc.	<ul style="list-style-type: none"> To what extent do proposers, FA or PRIMA Foundation Secretariat agree that <ul style="list-style-type: none"> the evaluation process is timely overall? 2 the first / second stage of the process is efficient? Project negotiations are carried out efficiently. What works well and what could be improved? 	<ul style="list-style-type: none"> Programme level documentation Interview programme 	<ul style="list-style-type: none"> Time to grant Time/resources required before projects can start
Are effective monitoring arrangements in place to ensure adequate monitoring of the actions? Have the activities been implemented under the provisions of the model grant agreement?	<ul style="list-style-type: none"> What monitoring data are available? What are the arrangements for collecting monitoring data? To what extent could these be considered to be efficient for project participants and for PRIMA staff? To what extent are the under the provisions of the model grant agreement take into account and how? What works well and what could be improved? 	<ul style="list-style-type: none"> Monitoring and Learning Platform Programme level documentation Interview programme Case studies 	<ul style="list-style-type: none"> Extent to which monitoring procedures produce relevant and timely data Use of monitoring data
What are the main problems encountered in the implementation of the activities? a. Section 1 Actions b. Section 2 Activities c. Section 3 Activities PSiAs and Other Activities?	<ul style="list-style-type: none"> To what extent do the various activities work well: <ul style="list-style-type: none"> Section 1 – Activities and actions organised, managed by the PRIMA-IS (including prizes) Section 2 – Activities selected following transnational call organised by PRIMA -IS and funded by PS Section 3 – Activities and actions organised, managed and funded by the PS Other What are the drivers and barriers encountered through different funding models represented by Sections? What works well and what could be improved? 	<ul style="list-style-type: none"> Programme level documentation Interview programme 	Efficiency of calls/ project funded under different Sections

Research question (terms of references)	Sub-questions	Data sources	Indicators
Are the activities cost-effective? Were the costs involved justified, given the changes/effects which have been achieved?	<ul style="list-style-type: none"> What have been the costs involved? Benefits? Are these comparable to other P2Ps, other collaborations and/or national instruments? 	<ul style="list-style-type: none"> Monitoring and Learning Platform TBC Programme level documentation Interview programme 	<ul style="list-style-type: none"> Cost effectiveness of different Sections
Is support provided sufficient, or is additional support needed for the preparation and implementation of PRIMA proposals?	<ul style="list-style-type: none"> What kind of support is in place? What have been the benefits of the support provided? What works well and what could be improved? 	<ul style="list-style-type: none"> Interview programme Case studies 	<ul style="list-style-type: none"> Extent and type of support Extent and type of problems encountered by consortia
Are the proposed contractual procedures, national and H2020 rules likely to facilitate the implementation of the actions?	<ul style="list-style-type: none"> What are the main contractual procedures and rules in place? To what extent do national rules and procedures differ? What, if any, have been the consequences for PRIMA projects and other activities? What works well and what could be improved? 	<ul style="list-style-type: none"> Interview programme 	<ul style="list-style-type: none"> Extent and type of rules Level of alignment with national rules/procedures
What lessons can be learned about implementing the PRIMA PS in-kind and in-cash-based contribution to the programme?	<ul style="list-style-type: none"> What have been the main contributions in-kind and in-cash-based? Who have been the main contributors? What works well and what could be improved? 	<ul style="list-style-type: none"> Interview programme Case studies 	<ul style="list-style-type: none"> Extent and type of in-kind contributions Extent and type of in-cash-based contributions

Research question (terms of references)	Sub-questions	Data sources	Indicators
<p>Assess the financial contributions from the Participating States taking into account their initial commitments and the needs of the PRIMA programme</p> <p>Consider how the commitment for participation was secured Consider the internal workflow within the agency and the external workflow (coop with ministry)</p> <p>Consider the resources allocated and the integration of any external resources Is there adequate/ sufficient financial commitment by each PRIMA PS</p> <p>Consider any difficulties or structural deficits within the consortium (composition of partners, financial)</p>	<ul style="list-style-type: none"> • What have been the financial contributions from the Participating States? • To what extent have these matched their initial commitments? • To what extent have these matched the needs of the PRIMA programme? • How has these commitments for participation been secured? What drivers and barriers have been in place for securing commitments? • To what extent have the resources allocated and the integration of any external resources been adequate/ sufficient? • To what extent have the PRIMA project consortia experienced difficulties or structural deficits within projects? • To which extent have the PRIMA funding agencies allocated the funds in PRIMA projects with regard to the initial financial planned contributions provided for each Annual Work Plans? • How do Funding Agencies have addressed underspending of their initial planned financial contributions? 	<ul style="list-style-type: none"> • Programme level documentation • Interview programme • Case studies 	<ul style="list-style-type: none"> • Extent of financial contributions from the Participating States • Extent to which actual commitments match expected commitments
<p>Is there a long-term perspective for the network? Consider the maturity of the network, its coordination (overall performance) and sustainability</p>	<ul style="list-style-type: none"> • To what extent have networks developed as part of PRIMA projects? • To what extent have networks developed as part of other PRIMA activities? • Who – what type of actors – are involved and drive these networks? • What are the key factors behind successful networks? 	<ul style="list-style-type: none"> • Project level documentation • Programme level documentation • Interview programme • Case studies 	<ul style="list-style-type: none"> • Type and extent of PRIMA participants • Relationship between participants (extent of cooperation before and after)
<p>Are the activities implemented efficiently? Have the management aspects been adequately addressed?</p>	<ul style="list-style-type: none"> • To what extent have PRIMA projects been implemented efficiently? • To what extent have PRIMA coordinators collaborated with the PRIMA secretariat? • What works well and what can be improved? 	<ul style="list-style-type: none"> • Monitoring and Learning Platform • Project level documentation • Programme level documentation • Interview programme 	<ul style="list-style-type: none"> • Extent of project delays • Extent of communication and cooperation between projects and the Secretariat

Research question (terms of references)	Sub-questions	Data sources	Indicators
Relevance			
Is PRIMA appropriate to support the realisation of the EU policy objectives (ERA and EU Green Deal)	<ul style="list-style-type: none"> To what extent have PRIMA activities contributed to the i) ERA and ii) EU Green Deal respectively? What areas of PRIMA has been more/less relevant? 	<ul style="list-style-type: none"> Monitoring and Learning Platform Project level documentation Programme level documentation Interview programme 	<ul style="list-style-type: none"> Extent of alignment
To what extent are PRIMA actions are embedded in national policy portfolios? To what extent do PRIMA actions complement national research programmes?	<ul style="list-style-type: none"> To what extent have PRIMA actions shaped national policy agendas (vs the other way around)? What actions/areas have been considered more/less relevant by i) PS, ii) RTDI performers? 	<ul style="list-style-type: none"> Monitoring and Learning Platform Project level documentation Programme level documentation Interview programme Case studies 	<ul style="list-style-type: none"> Extent of alignment
Is PRIMA appropriate to support the achievement of the UN Agenda 2030 through the implementation of the SDGs in the Mediterranean Area	<ul style="list-style-type: none"> To what extent are PRIMA actions relevant to UN Agenda 2030 through the implementation of the SDGs in the Mediterranean Area? What alignments can be observed? To what extent can relevance of PRIMA actions be improved? 	<ul style="list-style-type: none"> Monitoring and Learning Platform Project level documentation Programme level documentation Interview programme Case studies 	<ul style="list-style-type: none"> Extent of alignment Extent of other instruments relevant to the SDGs
Coherence			

Research question (terms of references)	Sub-questions	Data sources	Indicators
<p>To what extent is PRIMA coherent with other initiatives and/or policies that have similar objectives Consider national, regional, bilateral instruments like Horizon Europe, EU partnerships, Regional programmes (i.e UfM, InterregMedNext, NDICI), national or bilateral programmes Consider which measures have been taken (at the preparation phase, in the definition of annual priorities call topics to ensure coordination with other partnerships and avoid duplication</p> <p>What are the relations (complementarity, synergies, overlapping, etc.)?</p>	<ul style="list-style-type: none"> To what extent are PRIMA actions complementary with other relevant programmes? To what extent do PRIMA actions overlap with other relevant programmes? What alignments can be observed? To what extent can relevance of PRIMA actions be improved to better align with European, national and regional initiatives? What works well and what can be improved in terms of relevance and alignment? 	<ul style="list-style-type: none"> Wider literature review of comparable international programmes Project level documentation Programme level documentation Interview programme 	<ul style="list-style-type: none"> Extent of alignment/complementarity/overlap in activities and priorities
Added value			
<p>What is the additional value resulting from PRIMA implementation, compared to what would have been achieved by PS at national and regional levels?</p>	<ul style="list-style-type: none"> To what extent to PRIMA actions create added value to different PS and/or RTDI performers? What actions are considered to add most / least value? Why? What works well and what can be improved in terms of EU added value? 	<ul style="list-style-type: none"> Project level documentation Programme level documentation Interview programme Case studies 	<ul style="list-style-type: none"> Extent to which PRIMA activities cannot be implemented through other means
<p>What is the additional value resulting from PRIMA, compared to what could be achieved by other similar trans-national initiatives with similar objectives?</p>	<ul style="list-style-type: none"> To what extent do RTDI performers prefer to carry out projects within PRIMA compared to alternatives? Why? What PRIMA activities are considered to carry added value? Why? How? To what extent do PRIMA projects strengthen cooperation outside of the programme? 	<ul style="list-style-type: none"> Project level documentation Programme level documentation Interview programme Case studies 	<ul style="list-style-type: none"> Extent to which PRIMA activities cannot be implemented through other means

Research question (terms of references)	Sub-questions	Data sources	Indicators
What has been achieved in term of International leadership, global cooperation and the European Neighbourhood South Consider impact international cooperation, science diplomacy ⁶⁰	<ul style="list-style-type: none"> To what extent have the PRIMA programme contributed towards outcomes related to international cooperation (Euro-Mediterranean cooperation) and science diplomacy? What PRIMA related projects have been effective in this regard? What works well and what can be improved? 	<ul style="list-style-type: none"> Project level documentation Programme level documentation Interview programme 	<ul style="list-style-type: none"> Extent and type of PRIMA activities related to international cooperation and science diplomacy
Are PRIMA actions implemented in areas in which the added value is demonstrated? Show the specificity of the initiative compared to others with similar objectives or regional focus.	<ul style="list-style-type: none"> To what extent has the PRIMA programme focused on areas with the most added value? How were these areas selected? To what extent can PRIMA projects be implemented at the national or regional level (including bilaterally)? What works well and what can be improved in terms of added value creation? 	<ul style="list-style-type: none"> Project level documentation Programme level documentation Interview programme 	<ul style="list-style-type: none"> Extent to which PRIMA focuses on areas of most added value
What is the added value in terms of leveraging of resources (financial contributions)	<ul style="list-style-type: none"> To what extent do PS agree that PRIMA funding has brought value for money? To what extent can PRIMA projects be implemented at the national or regional level (including bilaterally)? 	<ul style="list-style-type: none"> Project level documentation Programme level documentation Interview programme Case studies 	<ul style="list-style-type: none"> Added value in terms of leveraging of resources (quantitative and qualitative)

⁶⁰ See for example the 2017 Valletta Declaration on Strengthening EuroMediterranean Cooperation through Research and Innovation https://ufmsecretariat.org/wp-content/uploads/2017/10/Declaration_EuroMed-Cooperation-in-Research-and-Innovation.pdf and the Global Approach Strategy https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2465

Annex 2 List of stakeholders consulted (anonymised)

No.	Position/ Role in PRIMA	Project/ section	Country
1	Board of Trustees	n/a	IT
2	Board of Trustees	n/a	EG
3	National Funding Agency	n/a	ES
4	National Funding Agency	n/a	ES
5	National Funding Agency	n/a	MT
6	National Funding Agency	n/a	IT
7	National Funding Agency	n/a	IL
8	National Funding Agency	n/a	PT
9	National Funding Agency	n/a	DZ
10	National Funding Agency	n/a	DE
11	Project coordinator 1	SUPROMED/ S1	n/a
12	Project coordinator 2	DSWAP/ S1	n/a
13	Project coordinator 3	FIT4Reuse / S1	n/a
14	Project coordinator 4	DAINME-SME/ S1	n/a
15	Project coordinator 5	ArtiSaneFood/ S2	n/a
16	Project coordinator 6	Surefish/ S1	n/a
17	Project coordinator 7	PHEMAC/ S1	n/a
18	Project coordinator 8	NEXUS NESS	IT
19	Project coordinator 9	SustainOlive	ES
20	Project coordinator 10	NEWFEED	ES
21	Regional Intergovernmental organisation and programmes with similar regional focus	Union for the Mediterranean (UfM)	n/a
22	Regional Intergovernmental organisation and programmes with similar regional focus	Union for the Mediterranean (UfM)	n/a
23	Regional Intergovernmental organisation and programmes with similar regional focus	ENI CBC MED	n/a
24	Regional Intergovernmental organisation and programmes with similar regional focus	Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC)	n/a
25	PRIMA scientific advisory committee	n/a	ES

Annex 3 List of literature

Overarching documentation

- Regulation 1291/2013 establishing the Horizon 2020 programme
- Horizon 2020 Impact Assessment EC(2011) 1427 final
- COM/2012/497
- The H2020 financial regulation and the rules for participation¹² (1290/2013) and the EU Financial Regulation (sets out the general rules on EU funding). The FR sets out the principle of co-financing, the non-profit rule for EU funded projects, the principles of efficiency and effectiveness, general criteria for the reimbursement of costs, etc.
- National/sector specific reports on the Mediterranean region relevant to climate change and mitigation
- Position/opinion papers. At the design/consultation stage of Horizon 2020 many R&I interest groups developed and published opinion/position papers. It would be particularly interesting to compare these analyses with any more recent papers available which assess progress
- Data sources – e.g. CORDIS, any data that PRIMA is able to provide drawing on the e-CORDA database.
- Evaluation of EU Participation in R&D programmes undertaken by several MS Art 185
- Valletta Declaration on Strengthening Euro-Mediterranean Cooperation through Research and Innovation 2017

National level documentation

- National level strategies on R&I and environmental innovation in the 19 participating countries.
- Any national documentation referring to PRIMA

PRIMA documentation – provided by the PRIMA Secretariat

- Decision (EU) 2017/1324 of the European Parliament and of the Council of 4 July 2017 on the participation of the Union in the Partnership for Research and Innovation in the Mediterranean Area (PRIMA) jointly undertaken by several Member States.
- European Commission (2015) PRIMA Programme Inception Impact Assessment
- Ex-ante assessment and Impact Assessment on PRIMA.
- PRIMA Statutes
- PRIMA Decision (Basic Act)
- Strategic Research and Innovation Agenda (SRIA)
- Annual Work Plans
- PRIMA Model Grant Agreement (MGA)
- Multi-beneficiary Model Grant Agreement
- Annotated Model Grant Agreement
- Electronic-submission-system-Handbook.pdf
- Guidelines for Applicants Section 1
- Call Texts for Nexus, Agro-food Value Chain, Farming Systems, Water Management
- National Regulations 2021
- Project deliverables (interim or final reports) whenever available

Websites

<https://www.un.org/development/desa/disabilities/about-us/sustainable-development-goals-sdgs-and-disability.html>

<https://prima-med.org/about-us/prima-in-brief/>

European Commission, *Article 185 initiatives*, Horizon 2020, available on <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/article-185>

https://prima-med.org/wp-content/uploads/documents/PRIMA-SRIA_Strategic-Research-and-Innovation-Agenda.pdf

<https://prima-med.org/documents-reports/>

https://ec.europa.eu/info/research-and-innovation/research-area/environment/prima_en

<https://sciencebusiness.net/international-news/prima-project-road-mediterranean-research-cooperation-gets-bumpy>

Annex 4 Case studies

A number of case studies have been undertaken to assess progress in implementing selected projects. These were based on a combination of desk research and interviews with project coordinators. The cases were then validated by the person interviewed.

An overview of the case studies within the thematic areas is now provided:

- **Farming systems** - NEWFEED project (Turn Food Industry By-products into secondary Feedstuffs via Circular-Economy Schemes).
- **Agro-food production and value chain** – ARTISANEFood project (design of a safety decision support IT tool for artisanal food producers), the SUREFISH project (allow for traceability and authenticity of the fish along the entire supply chain, using RFID, blockchain, TTI and tamper-proof technologies), and the CAMELMILK project (production and commercialisation of camel milk and camel milk products).
- **Water management** – No case study for the thematic section on water management is included in this version of the report, due to little data availability through open sources and limited response from project partners. The study team will aim to identify an additional case study for submission.
- **Nexus** – Nexus-Ness (production of a comprehensive Water-Energy-Food Ecosystem system for optimal resource management).

The case studies were selected to cover the four thematic areas of PRIMA as well as a wide range of countries and types of partners. In addition, a diverse range of types of innovations were explored, thereby exemplifying the variety of projects supported by PRIMA across the Mediterranean.

The case studies are presented in the form of individual fiches outlining in the first section the key details of the project, followed by an overview of the experience of implementation to date and the resulting conclusions and identified best practices. The information granularity varies across fiches, as projects are at different implementation stages. The case studies are now provided.

Case study 1 – NEWFEED⁶¹ Project

Project overview and title – NEWFEED project (Turn Food Industry By-products into secondary Feedstuffs via Circular-Economy Schemes).
PRIMA thematic area: Farming Systems
Type of project (i): <i>type of PRIMA project</i> – Section 1 Type of project (ii): Innovation Action (IA)
Lead partner organisations: AZTI technology centre ⁶² , SEVT – Federation of Hellenic Food Industries ⁶³ Lead partner countries: Spain, Greece
Number and type of partners and countries taking part: 14 partners from 4 countries (Spain, Greece, Turkey, Egypt). Coordinated by the AZTI research centre and SEVT food industries' federation, this international project involves the participation of R&D Institutes, Universities, Federations, Neiker, the Spanish Confederation of Compound Animal Feed Manufacturers (CESFAC), the Álava Agricultural and Livestock Union (UAGA), Bodegas Baigorri, Riera Nadeu (industrial equipment supplier), organic food producer iSiS Organic, Sekem Development Foundation (SEKEM) – an umbrella-organisation consociating socially-responsible agro-industry companies and NGOs in Egypt, Elgo Dimitra – the organisation under the auspices of a Greek

⁶¹ The website of the project available via: <https://newfeed-prima.eu/>.

⁶² <https://www.azti.es/en/about-azti/>

⁶³ <https://www.sevt.gr/?lang=en>

Project overview and title – NEWFEED project (Turn Food Industry By-products into secondary Feedstuffs via Circular-Economy Schemes).

ministry of agriculture providing research and training for the agricultural sector in Greece.

Project duration and commencement/ end date: 48 months - from 01.07.2021 to 30.06.2025.

Project budget: € 2,202,371.84

Short description of project: The objectives of the *NEWFEED* project include testing and demonstrating the feasibility of the utilisation of by-products from the Mediterranean food industries (orange peels, olive cake and grape stems) for the manufacturing of secondary feedstuffs for poultry and ruminants.

The project will be carried out in the form of three separate case studies rooted in the economic and agricultural contexts of three different countries. It is addressing niches in the livestock breeding and rearing and food production sectors, focusing on those narrow areas of agriculture that are already well-rooted and important for the local economies of the countries participating in the project.

The methodology of the project focuses on activities aiming at testing and demonstrating the technical and economic viability of alternative feed resources from improved food industry by-products in the Mediterranean Area:

- **Study in Spain.** Valorisation of grape stem from wineries as a second-generation feedstuff to produce a new feed ingredient for ruminants (dairy sheep and cattle).
- **Study in Greece.** Valorisation of orange peel from orange juice industries to produce an improved feed ingredient for ruminants (dairy sheep).
- **Study in Egypt.** Valorisation of olive cake from olive oil industry to produce feed ingredient for poultry (broiler chicken).

The products developed during the project will be a part of the *value chains*, the complex scenarios of practices leading to the implementation of developed products into the commercial market. The value chains will involve different stakeholders, e.g. food industries, those involved in logistics, processing, feedstuff companies and livestock companies. *NEWFEED* aims to reduce the negative human impact on the environment through the enhanced sustainability of livestock breeding and food production in the region. The research process is planned to be concluded with the assessment of the business potential of each of the products developed during the project and presenting them to the relevant stakeholders during workshops held in the various Mediterranean countries taking part in the project.

Expected achievements:

- The project, currently (January 2022) in the first year of its execution, is expected to develop three alternative feed value chains in three different countries. These will later be assessed from the perspective of their commercial application potential and presented to stakeholders.
- Through valorisation of Mediterranean food industry by-products, the project is expected to contribute to the implementation of the circular economy in Europe, one of the most important elements of the European Green Deal⁶⁴ at the same time, to reinforce efforts towards achievement of the UN's SDGs.
- *NEWFEED* is expected to substantially contribute towards the creation of sustainable employment in the local agricultural sectors of the Mediterranean basin economies.
- Moreover, the project aims to address priorities defined within the *Farming Systems* thematic call for proposals of PRIMA, by helping to facilitate the adaptation of the

⁶⁴ https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en.

Project overview and title – NEWFEED project (Turn Food Industry By-products into secondary Feedstuffs via Circular-Economy Schemes).

agricultural industry to address the challenges of climate change and to support the development of a sustainable and efficient economy based around food production.

- Through the involvement of several stakeholders from different areas of industry, located in several different Mediterranean countries, NEWFEED is expected to enhance intersectoral and international cooperation. That, together with the project's commitment to the technological advance of the economy of the Mediterranean agricultural economies, locates *NEWFEED* at the very core of the PRIMA's long-perspective efforts.

Actual activities and achievements to date

The main activities supported to date were:

- During the first 6 months, the project partners have established the methodology to identify the main hurdles and bottlenecks of the three value chains.
- They have designed the experiments for optimization of the valorisation strategies for the three by-products under study.
- Finally, they have further set out the definition of the bases that will govern the management of the project and protection of the results obtained, as well as the dissemination strategy.

To date, the project's implementation has proceeded well. As the project is only in its first year, it is too early to assess its achievements. However, among those worth noting are:

- The project website and social media channels have been launched, and a press release issued, which have contributed to the external visibility of the project and of PRIMA.
- The questionnaire to identify the hurdles and bottlenecks connected to the implementation of the solutions of food by-products valorisation has been launched; the first responses have started to come in.
- The first laboratory tests for the valorisation of different by-products have been carried out.

Experience of implementation (including drivers and barriers to achieving results)

Regarding implementation experience to date, according to the lead project coordinator, the project has been proceeding well. It was observed that contact with PRIMA has been fast and easy, and feedback was provided on queries raised when needed. This has helped to promote smooth implementation.

Drivers and barriers to achieving project results are now considered.

Drivers

- The parties coordinating the project had limited knowledge of the local markets in the countries where they are not physically operating on an everyday basis. Thus, reaching out to local stakeholders, e.g. local industry associations, helped them to develop their networks in the countries that they have chosen as potential commercial target markets. This proved crucial for the overall success of the project so far.
- Such contacts and newly established networks might turn into long-lasting connections and potentially benefit both sides of the exchange in the future. The presence of such cooperation and access to local advisory turns out to be a crucial circumstance for effective international transfer and implementation of the project solutions.

Project overview and title – NEWFEED project (Turn Food Industry By-products into secondary Feedstuffs via Circular-Economy Schemes).

Barriers

- The project is executed by the stakeholders grounded in the academic environment who are relatively more experienced in conducting the research within academia than in the implementation of the research outcomes in a commercial market. The authors of the project think it would be beneficial if they were supported by a third party experienced in reaching out to business (e.g. investors), promotion and implementation of the developed products in the commercial market. That could be provided either in a form of external support, or as a part of the very PRIMA programme.
- The authors of NEWFEED find it potentially difficult to promote the outcomes of the project outside of academia since it requires adjusting hermetic, technical language utilised for the research to the needs of the stakeholders outside of the university. Perhaps support with that could also be provided as a part of a support with promoting the project in the commercial market.
- A bulk of the project tasks can be conducted via remote work, but it would be beneficial if it was possible to travel between the three case-study countries and meet face to face with the engaged stakeholders. That has been made difficult due to the COVID-19 pandemic.
- Differences in knowledge/technological development between academic stakeholders in Europe coordinating the project and the African partners carrying out their parts of the study have been causing some difficulties along the way. Provision of some additional training and methodological adjustments have already been and might be needed/necessary to provide equal quality and coherence of all case studies conducted in Europe and in Africa. It is possible that at some future stages of the project the African partners might visit their European counterparts in their laboratories in order to receive support and learning. That on the one hand requires additional effort from the authors of the project, but on the other is an opportunity to exchange knowledge and build networking capacity.

Conclusions and possible good practices

- The fact that the project will be carried out through a case study-based approach closely customised to address the different economic and agricultural contexts of three different countries should strengthen the feasibility of the solutions developed by ensuring their relevance to the locally-identified needs. This should also facilitate the transfer of the project's methodology to other geographic areas in future as these could also be tailored to the specificities of the local economic and agricultural contexts.
- Food production by-products will be processed throughout the project, which potentially could increase the sustainability of production chains and have a positive environmental impact. Additionally, the project is rooted in sectors of agriculture traditionally present in the local socio-cultural and economic settings, which increases the chances that its outcomes will be widely adopted.
- An added value of the project to date, from a networking perspective, is that the project has brought together different types of relevant stakeholders (e.g. manufacturing, livestock and food production industry associations and individual firms) with a key part to play in the local economies of the Mediterranean basin.
- Assessment of the research outcomes through the lens of commercial application potentially boosts the efficiency of the EU funding, as it increases the chances that in the future investors might be interested in the further development of the developed technology and spreading it in the market.
- NEWFEED is based on a socially-engaged, market-aware, as well as a scientific rationale,

Project overview and title – NEWFEED project (Turn Food Industry By-products into secondary Feedstuffs via Circular-Economy Schemes).

merging all those dimensions into a coherent strategy with practical application. Thereby it promotes intersectoral co-operation and socially-responsible business models.

- Practically-oriented solutions developed within the project are grounded in broader policy frameworks, particularly in the context of the EU's circular economy, but also national and regional circular economy strategies in participant countries (e.g. ES and EL)⁶⁵. Consequently, *NEWFEED* contributes to their promotion and demonstrates that they might be turned into practice – also within commercial settings.

^[1] The project details are available via: <https://mel.cgiar.org/projects/newfeed>; <https://newfeed-prima.eu/>.

⁶⁵ For example, in the Spanish context: 'España Circular 2030' (https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/espanacircular_2030_executivesummary_en_tcm30-510578.pdf), and in the Greece: 'National Action Plan on Circular Economy' (NAPCE) (<https://circulareconomy.europa.eu/platform/en/strategies/national-action-plan-circular-economy>) or Pillar I ('Green Transition') of the Next Generation EU-funded 'Greece 2.0 National Recovery and Resilience Plan' (https://primeminister.gr/wp-content/uploads/2021/03/Greece-2_0-April-2021.pdf).

Case study 2 – ArtiSaneFood

Project overview and title – ArtiSaneFood (Innovative Bio-interventions and Risk Modelling Approaches for Ensuring Microbial Safety and Quality of Mediterranean Artisanal Fermented Foods)

PRIMA thematic area: Sustainable Mediterranean agri-food value chain for regional and local development

Type of project (i): PRIMA Section 2

Type of project (ii): Innovation Action (IA)

Lead partner organisation: Polytechnic Institute of Bragança (IPB) **Lead partner country:** Portugal

Number of partners and countries taking part: 9 organisations in 8 participating countries: Portugal, Spain, Italy, France, Greece, Morocco, Tunisia and Algeria.

Project duration and commencement/ end date: 38 months, started on 1 June 2018 (6 months left).

Project budget: €1,583,708

Short description of project:

“Innovative Bio-interventions and Risk Modelling Approaches for Ensuring Microbial Safety and Quality of Mediterranean Artisanal Fermented Foods” (ArtiSaneFood) is a PRIMA-funded project belonging to the agri-food value chain thematic area. At the outset, the project was designed to enhance the safety of the production processes of 30 products for which foodborne hazards were previously identified, including in some cases foodborne outbreaks. In addition, a second overarching goal was to provide support to local producers to increase their levels of sustainability at all stages of the value chain.

In operational terms, the project is being implemented via six main activities:

- **Determination of the origin and routes of contamination of foodborne pathogens** in the artisanal food chains to identify the manufacturing faults and/or risk factors favouring the growth of pathogen.
- **Development of bio preservation strategies** based on functional starter cultures and natural plant-based antimicrobial extracts to control pathogens and extend shelf-life of selected artisan products.
- **Conduction of a series of fate studies⁶⁶ on pathogens** to understand their viability during the fermentation, ripening and storage during traditional manufacture process.
- **Development of dynamic predictive microbiology models** that describe and predict the growth, survival and inactivation of pathogens as they are affected by endogenous and exogenous causes.
- **Development of norms and standards** for increased safety of artisan food processing and end products.
- **Development of an IT-based system** for artisanal producers intended to serve as a quality and safety self-evaluation tool for assessing the risks associated with their manufacturing processes.

Expected achievements:

- Research into the origin and routes of contamination of foodborne pathogens.
- Development of bio preservation strategies.
- Fate studies on selected pathogens to acquire a better understanding of their viability in selected food products.
- Development of protocols to increase the food safety of artisanal products in the

⁶⁶ Fate determination is the study of how a particular cell develops into a final cell type.

Mediterranean.

- Development of an IT tool to help food producers make their products safer to consumers

Actual achievements to date

Note: the project coordinator stressed that the pandemic negatively affected project delivery. Some significant delays were experienced as a result of the public health restrictions.

Among the achievements cited to date were:

- Data collection has taken place.
- The data collected has led to the identification of the pathogens responsible for the contamination and outbreak episodes.
- Preservation strategies have been developed.
- Several protocols for researchers have been developed, e.g. for the isolation of lactic acid bacteria.
- Knowledge transfer has been achieved: two students from Tunisia were trained at the lead partner organisation.
- Collaborative networks have been established between researchers in the participating countries, among local food producers and between producers and researchers.

Experience of implementation (including drivers and barriers to achieving results)

ArtiSaneFood aims to address the needs of artisan food producers in ensuring that their products are safer to consumers. Artisan food are an important part of the economies of Mediterranean countries. As such, it is important to support them improve their production and storage practices.

Drivers:

- Good levels of cooperation between European and North African countries have enabled knowledge transfer between the sides of the Mediterranean. Regular networking between partner organisations has helped the project to achieve expected results.
- The relevance of the project to the needs of local food producers has also been a positive factor in the realisation of objectives. This has led to a strong engagement on the part of food producers despite the language barrier mentioned below.
- The relevance of the project to the needs of researchers in North African countries is also an important driver. This has resulted in a good level of engagement on the part of research organisation in these countries despite limited funding due to smaller grant allocation.

Barriers:

- Language barriers in Northern African countries (Morocco, Algeria and Tunisia) faced by the project implementers as local producers are not proficient in English and the materials had to be translated into French and Arabic. Although efforts have been made to make important material available in local languages, language barriers have negatively affected the full engagement and cooperation of local food producers with other actors of the project's network.
- The COVID-19 pandemic has negatively affected the implementation of the project and has created delays.
- Funding disparities across PRIMA countries make it difficult for the project coordinator to work with some partner organisations as they are under budgetary and resource constraints. For example, countries such as Italy and Greece were eligible to receiving €250,000 while Tunisia only received €30,000. In addition, the disbursement of the grants was also not simultaneous, which made it difficult for certain partner organisations (e.g. Morocco) to get engaged from the outset.

Conclusions and possible good practices

Overall, this project has been performing well in terms of the achievement of its objectives despite the difficulties posed by the COVID-19 pandemic. The project is not only conducting important research into the safety of food production and storage processes (**knowledge generation**) but is also contributing significantly towards **knowledge transfer** by providing user-friendly tools to food producers on how to improve their practices but also by having established a network of partner organisations within which know-how can be shared and fostered. Stakeholders consulted for this case study noted the added value of PRIMA, particularly with regards to H2020 as North African would have not been eligible under H2020. In addition, PRIMA not only contributes to the EU's innovation policy but also to its neighbouring policy by supporting an important component of their economies. This constitutes another important added value of the PRIMA initiative.

In terms of issues encountered, it was stressed by stakeholders that the section 2 model and its funding model negatively affected the implementation of the project. The reason for this were twofold. First, the grant allocation across the participating countries is not homogenous. Some countries such as Italy were eligible to large grants while other countries such as Tunisia were allocated significantly smaller grants. This limits the ability of some partner organisations to get meaningfully engaged and dedicate adequate resources. It also limits the ability of the project coordinators to achieve similar results across the participating countries. The second reason raised by stakeholders lies in the different disbursement timeframes. Some countries such as Morocco received their grants much later than other countries, which prevented from getting involved from the outset of project implementation.

A good practice emerging from this project is around knowledge transfer. There are indeed high levels of interest on the part of North African students and universities to take part in training activities. The lead organisation (IPB) has trained two students and is expecting to train two more in 2022. This practice is beneficial for both the receiving organisation and for student's home organisations as in the case of the former these academic exchanges allow member organisations to learn more about the practices of local produces. For the latter, the know-how and knowledge acquired also prove useful for academia but also for industry and the economy at large.

Case study 3 – SUREFISH project

Project overview and title

PRIMA thematic area: Sustainable Mediterranean agri-food value chain for regional and local development

Type of project (i): PRIMA Section 1

Type of project (ii): Innovation Action (IA)

Lead partner organisation: Enco Consulting

Lead partner country: Italy

Number of partners and countries taking part: 13 organisations in 5 participating countries: Italy, Spain, Tunisia, Egypt and Lebanon.

Project duration and commencement/ end date: 36 months, starting on 1 March 2020.

Project budget: €1,597,025

Short description of project: Fish is one of the key components of the Mediterranean diet, contributing to a healthy and balanced diet. Additionally, fish provides an important income and trade opportunities to many communities in countries across the Mediterranean area. However, fish is vulnerable to fraud, particularly species substitution and mislabelling. SUREFISH is an innovative project which aims to ensure the traceability and authenticity of the fish along the entire

supply chain, using RFID, blockchain, TTI and tamper-proof technologies. The project is expected to increase consumer confidence in the origin and authenticity of fish stocks. The project is piloting a number of projects in Tunisia, Egypt, Lebanon and Spain on four fish species: anchovies; tilapia; groupers; and bluefin tuna. Consumers will have access to an app providing information on traceability and authenticity, linked to the blockchain platform. SUREFISH aims to increase its TRL from 5 to 7 during the lifecycle of the project, and to achieve TRL 9 one year after project completion.

The partners are committed to improving communication and have received strong support from PRIMA's communication officer. A general assembly is held every 6 months to monitor project implementation. Additionally, SUREFISH organises events at industry fairs to share project results.

Expected achievements:

- Development of knowledge and common innovative technological solutions in the Mediterranean.
- Fostering of a sustainable Mediterranean fish value chain, increasing safety, quality and traceability standards.
- Development of regional and local economies through innovative digital technologies.
- Increase in consumer confidence in traditional Mediterranean fish.
- Strengthening of relationships between different countries in the Mediterranean in the fisheries sector.

Actual achievements to date:

Among the achievements cited to date were:

- Initiation of several pilots and partial validation of the blockchain use case through these (to be fully validated during the remainder of the project).
- Development of new networks and strong cooperation between partners.
- Contribution to checking the origin and authenticity of traditional Mediterranean fish through a blockchain-driven valorisation process.
- Maximising the TRL of the solutions and ensuring market readiness (although the full TRL transition towards commercialisation will come later in the project, there are some promising initial indications of potential commercialisation in Algeria).
- Increasing the safety, quality and traceability standards in the Mediterranean fish sector.

Experience of implementation (including drivers and barriers to achieving results)

SUREFISH aims to address the need for a digital revolution based on affordable, innovative technologies in the Mediterranean fisheries sector, which should generate benefits for producers and consumers. The following drivers and barriers were found in implementing the project:

Drivers:

- An interviewee from SUREFISH stressed that strong cooperation between European and North African countries and knowledge transfer constitute the main added value of PRIMA. Regular networking between partner countries has helped the project to achieve some of the identified results.
- Extensive contact with other EU funded projects and PRIMA projects in the fisheries sector which have provided an opportunity to exchange experiences and draw lessons from other projects and avoid duplication.
- Extensive contact with the PRIMA Secretariat who have provided regular advice and guidance.

Barriers:

- Finding the most efficient way of working with other partners given the cultural differences. The interviewee pointed out that the partners are working to ensure they communicate in the best way.
- COVID-19 has created difficulties in forming human relationships, according to the interviewee, and there may be a need to extend the duration of the project by six months. The interviewee noted, however, that the pandemic is not a huge issue for SUREFISH as the project is mainly focused on research activities which were able to take place regardless virtually.
- The funding is managed directly by national authorities who have different rules, and management and communication methods. However, the interviewee noted that PRIMA has provided support where necessary.

Conclusions and possible good practices

SUREFISH is a good example of a well-functioning PRIMA project. The main benefit to date was the fostering of transnational cooperation between different Mediterranean countries with different cultures who can clearly potentially benefit from closer cooperation given similar challenges, but who previously lacked a suitable cooperation framework and research funding incentives to do so prior to obtaining PRIMA research funding.

SUREFISH has already engaged with both industry and consumers through project activities. In terms of the project's strategic added value, the project has contributed towards defining a more common approach to the management and monitoring of fish using cutting-edge blockchain technologies between all the countries involved, as the Mediterranean Sea has no borders and crucially therefore necessitates close cooperation between EU Member States and North Africa. Looking longer term, this could help contribute to developing a broader fisheries management strategy for the Mediterranean area.

In terms of lessons learned, the interviewee highlighted the importance of gaining insight into wider market needs to ensure cross-market objectives are aligned.

Case study 4 – CAMELMILK

Project overview and title - Boost the production, processing and consumption of camel milk in the Mediterranean basin (CAMELMILK)

PRIMA thematic area: Agri-food

Type of project: Section 1 of PRIMA, Topic 3 - Improving the sustainability of Mediterranean agro-ecosystems

Lead partner organisation: Institute for Food and Agricultural Research and Technology - IRTA
Lead partner country: Spain

Number and type of partners and countries taking part: 13 partners are involved (research centres, universities and companies) across seven countries in the Mediterranean basin: Algeria, Croatia, France, Germany, Italy, Spain, Turkey.

Project duration and commencement/ end date: 42 months, starting on 1st June 2019 and finalising on 30 November 2022.⁶⁷

Project budget: €2,000,000

⁶⁷ The project was initially scheduled to last 36 months and was extended for 6 months.

Short description of project: The CAMELMILK project aims to promote the production, processing and consumption of camel milk and camel dairy products in the Mediterranean area and to strengthen the competitiveness, growth and interaction of the actors of the camel milk value-chain in the area, including producers, processors, distributors and consumers. This includes the adaptation of processing technologies to the properties of camel milk in Spain, France, Turkey and Algeria and the improvement of camel milk production systems in Algeria and Turkey in line with European standards. By doing so, it also aims to support smallholders and small SMEs with the required tools to ensure an increase in competitiveness on both shores of the Mediterranean.

Expected achievements:

1. Improve the efficiency and hygiene of camel milk production systems to get them closer to EU standards in order to build a long-lasting camel sector in line with Mediterranean values and heritage.
2. Adapt the already existing dairy processing technologies to the special characteristics and requirements of the camel milk to obtain high quality, healthy and safe camel dairy products.
3. Demonstrate the technical feasibility to produce camel dairy products (pasteurized milk, fermented products and cheese) at industrial level.
4. Legally market camel milk in the Mediterranean basin and other EU member states by covering the entire regulatory pipeline in order to attract the maximum possible added value.
5. Improve the whole camel milk chain and strength it by building sustainable relationships between the different actors.
6. Commercialise camel dairy products of the industrial partners.
7. Study consumer attitudes towards and acceptance of camel milk and camel milk products, in order to identify appropriate segments for market introduction and design adequate communication strategies for a successful market uptake.

Actual activities and achievements to date

The main activities supported to date were:

1. Technical camel farms visits to issue a report on the current situation and potential improvements.
2. Delivery of a camel management training for production partners (Algeria, Turkey, Spain, France).
3. Delivery of a camel cheese training for processor partners (Turkey, France).
4. Writing of a camel farm management handbook in English, French, Spanish, Turkish and Arabic.
5. Design of camel milk products at pilot plant level: pasteurized camel milk, yoghurt, ayran, laben, kefir, whey, cheese (Halloumi, Tulum, Camembert type).
6. Production by industrial partners at industrial level of the products describe in point 5.
7. Definition of the strengths and weaknesses of the camel milk value chain and the interactions between actors in EU, Turkey and Algeria.
8. Design of the marketing plan, the business plan and the exploitation plan for each producer and processor partner.
9. Exploratory research on consumer attitudes and perceptions by qualitative focus groups face-to-face and on-line (Germany, France, Spain, Turkey Algeria).
10. Quantifying consumer acceptance and potential demand for camel milk through on-line surveys (France, Spain, Germany, Turkey, Algeria).

Drivers and barriers for achieving results

This project targets a new market niche with high potential: camel milk, traditionally used in rural communities across the Mediterranean, is increasing its demand in the urban population given its nutritional value. Drivers and barriers to achieving project results are now considered.

Drivers

- The camel sector is engaged and motivated. Camel milk partners believe in the project, good interaction between partners.
- Higher number of communication and dissemination activities.
- Some scientific publications and a handbook of camel farm management have been published, which help strengthen the camel milk sector.
- The camel milk sector is a niche market and it has high social and economic potential on both sides of the Mediterranean.
- New jobs have been created due to the production of new camel milk products.

Barriers

- Difficulties with the partners in activity coordination and in the writing of technical and economic justification towards EU funds. Some partners are participating in a European project for the first time, which means they need to learn about the processes in place, which results in additional time needed for coordination and management.
- One partner left the Consortium due to limited achievements during the first stages of the project. The consortium has found a new partner and adapted the activities and tasks accordingly.
- COVID-19 travel restrictions made it difficult to deliver some of the project activities, such as trainings in farms and with industry, and impacted the engagement levels especially of partners who had not participated in European projects before.
- The launch of new camel milk products on the market has been delayed due to COVID-19.
- Difficulties to commercialise camel milk and their products due to their higher price.
- Communication difficulties among partners mainly via email, as some partners take long to answer questions and some activities have needed to be delayed.

Conclusions and possible good practices

This project capitalises on traditional food to explore the technical feasibility to produce camel dairy products (pasteurized milk, fermented products and cheese) at industrial level and the potential of this new market. This opens new opportunities for smallholders and small SMEs, which the project further supports with the required tools to ensure an increase of competitiveness, company growth and job creation at both sides of the Mediterranean. However, challenges posed by COVID-19 mean that a large management effort is needed to re-align the activities towards the project objectives. Also, technical effort is needed for the partners to adapt their activities due to COVID-19, and for the adjustment resulting from the exit of two partners and the joining of a new one.

Case study 5 – NEXUS-NESS

Project overview and title – NEXUS-NESS (NEXUS Nature Ecosystem Society Solution)
PRIMA thematic area: Nexus
Type of project (i): <i>type of PRIMA project</i> – PRIMA Section 1
Type of project (ii): Innovation Action (IA)
Lead partner organisation: WARREDOC at the University for Foreigners of Perugia (Università per Stranieri di Perugia) ⁶⁸
Lead partner country: Italy
Number and type of partners and countries taking part: 13 partners from 7 countries from Italy, Tunisia, Cyprus, Egypt, France, Germany and Spain participate in the project, coordinated by WARREDOC UNISTRAPG. The partners involved, aside from the coordinating party, include five other universities, a Tunisian regional association supporting development of local agriculture (CRDA ⁶⁹) and three commercial organisations - German company <i>Design and Data GmbH (DData)</i> that provides communication technologies to business, Cypriot consulting company <i>XPRO Consulting Ltd</i> , and Italian company <i>Urby et Orbit (UEO)</i> that specialises in providing solutions based on Earth Observation techniques, GIS analysis tools and AI. There are also three research organisations engaged in the project - <i>IRA</i> ⁷⁰ from Tunisia, French <i>SAS</i> ⁷¹ and Italian <i>FEEM</i> ⁷² .
Project duration and commencement/ end date: 01 June 2021 - 31 May 2024
Project budget: 2.850.000 €
<p>Short description of a project: The aim of the NEXUS-NESS (<i>Nexus Nature Ecosystem Society</i>) project is both co-development and co-testing of plans for governance and allocation of natural resources in a sustainable and fair manner. The co-operation is a bottom-up approach to work introduced in all phases of the project with/for the stakeholders, supported by the RRI principles. The practical outcome of the project will be development of a product – NEXUS-NESS Service (NNS). NNS will be a digital platform based on the scientific results of the state of the art WEFE nexus models and scenarios, e.g. on an integrated conceptual approach devised over the course of the project, as well as on the databases of both regional and international scope. Through the web-based platform the data, analytics and guidelines will be provided to the local stakeholders operating in the area of water and land management as well as the agriculture of the Mediterranean basin. It will support them with knowledge-based advice. The management plans (Nexus-Ness management plans) will be tested in four, different environmental settings, in Italy, Spain, Egypt and Tunisia, where four <i>Living Labs</i> (NEXUS Ecosystem Labs - <i>NELs</i>) will be set up:</p> <ul style="list-style-type: none"> • The Living Lab set up in Italy will respond to specific challenges of sustainable natural resources' utilisation for the purposes of agricultural sectors of the coastal areas. • The Living lab set up in Spain is going to address challenges characteristic to the regions where the local agricultural sectors, in the face of adverse climate changes, are supplied in water through specific technological solutions, such as <i>subsurface waters pumping and pressurized water distribution</i>. • The Living lab set up in Egypt is dealing with settings, where extensive and abundant water-

⁶⁸ Water Resources Research and Documentation Centre (WARREDOC) at the Università per Stranieri di Perugia (UNISTRAPG).

⁶⁹ Commissariat Régional Au Développement Agricole – Gabès.

⁷⁰ Institute of Arid Regions of Madenine.

⁷¹ Sol Agro et Hydrosysteme Spatialisation (SAS).

⁷² Fondazione Eni Enrico Mattei (FEEM).

management infrastructure is available, which provides suitable circumstances for testing of innovative technological solutions connected to irrigation management.

- **The Living lab set up in Tunisia** aims at addressing challenges characteristic to regions experiencing aridness and social challenges at least to some extent connected to it.

Expected achievements:

- The challenges addressed by the NEXUS-NESS project are different for each of the four *living labs* and vary based on the specificities of the local setting those are located in (as described above). The overall idea behind NEXUS-NESS is, however, to come up with natural resources' management solutions, drawing on data gathered during the project, that will be transferable across the Mediterranean basin. Therefore, a key expected achievement of the project is the final product: a digital platform (WEFE Nexus service or NNS) providing know-how to the stakeholders based on the local agricultural sectors.
- In the context of climate change and the increasing global scarcity of natural resources, NEXUS-NESS will address some of the resulting economic, environmental and social threats and thus contribute to the long-term stability of the region. It will do so by creating an integrated system of resource management for the region.
- The project partners will organise four workshops before summer 2022, and then regular events with local stakeholders will be held in the four living labs. There, local partners will be able to provide the parties responsible for management of NEXUS-NESS with knowledge on the relevant challenges they experience on a daily basis and their own view on how to best overcome these.
- The expectation is to co-operate with around 200 local partner organisations, which should enable around 1,000 people to access the NNS digital platform during the course of the project. Moreover, the project products, outcomes and solutions are expected to remain available and last also after project completion. In addition, the project is expected to create approximately 12 to 15 jobs in its later stages.

Actual achievements to date:

With the project being in its first year of implementation, it is too early to assess achievements overall. However, the overall implementation to date is considered to be working well. Achievements to date are as follows:

- A knowledge sharing and capacity building exercise with partners outside of Italy, where the coordinating party is located. The main goal of these sessions were to ensure coherence and consistency across studies carried out by the regional branches of NEXUS-NESS. A RRI Master class for WEFE Nexus transitioning was organised in September 2021. It helped all the project partners to be aligned and ready to coordinate the kick-off of the four living labs, which have already been set up.
- Currently, the project partners at the universities are collecting contacts of local stakeholders engaged in the water, land and agricultural sectors across the Mediterranean basin. In addition, the reference NEL partners of NEXUS-NESS are providing the project coordinator with contact databases. As next step, the outreach phase will commence.

Experience of implementation (including drivers and barriers for achieving results)

Throughout project implementation to date, a set of drivers and barriers to the achievement of results have been identified.

Drivers:

- The involvement of local partners is key for the success of the project. The challenges addressed by the NEXUS-NESS project will be identified with help of local partners consulted during a series of meetings. Such approach aims to guarantee that the solutions proposed by the project address the challenges faced by the local stakeholders, and does so better than if the project took a top-down approach.

Barriers:

- Local budget-connected regulations in Italy deferred creating jobs in the early stages of the project. As a result, the first hires were only possible a few months after the start of the project, the teams are expected to be complete by the end of the first year of the project (June 2022).
- Although from a scientific point of view the project is technically and conceptually advanced, the generation of science-driven knowledge and tools constitutes a challenge not easy to explain to partner institutions. The project coordinators are currently tackling this challenge.
- The COVID-19 pandemic has made it impossible to hold some meetings in person, therefore negatively impacting the networking opportunities among the project partners.
- Additional flexibility around the workplan and the budget, otherwise hard to modify once approved, would be welcome, especially in the changing pandemic context and given the large number of the parties involved in the project.

Conclusions and possible good practices

NEXUS-NESS contributes to the integrated resources management in the Mediterranean. In the past, management and use of the natural resources have been handled separately across sectors. As such, the project addresses a major and long-standing issue in the region, and its impact may very well go beyond designing the product it is expected to develop.

The project is implemented in a decentralized manner, yet brings together findings in a way that these are relevant to the wider region. The project will be carried out in the form of four case studies in four different regions, each of them responding to a specific local challenge. However, by addressing similarities and differences across the four individual studies, the partners producing the NEXUS-NESS will be able to develop a comprehensive dataset and to produce a strategy applicable to different regional contexts. The project is thus financially efficient and potentially useful to many, different stakeholders. In addition, the strong involvement of local partners is expected to guarantee alignment of local needs and project outcomes/ proposed solutions.