



THE MED GREEN GROWTH COMMUNITY

CATALOGUE OF PROJECTS RESULTS

APRIL 2021

The **Green Growth Community** (GGC) promotes sustainable development and the sound management of natural resources in the Mediterranean by enhancing cross-sectoral innovation practices through an integrated and territorially-based cooperation approach. It gathers 14 projects funded by the Interreg MED Programme, working on agrofood, eco-innovation, smart cities, waste management and green growth financing, connecting 165 partners from 13 countries in the Mediterranean, with a total budget of around €30M. It supports projects in their communication and capitalisation efforts in order to increase their impact at the policy level and ensure the potential transfer and replication of their results to other territories. The Union for the Mediterranean labelled the **Green Growth Community** in October 2019, acknowledging its potential to advance cooperation in transitioning to a green and circular economy and delivering concrete benefits to the citizens of the Mediterranean region. In November 2020, the GGC joined the Coordination Group of the EU Circular Economy Stakeholder Platform, a joint initiative by the EU Commission and the European Economic and Social Committee.

INDEX

ARISTOIL	3
CAMARG	5
CreaInnovation	7
EMBRACE	9
ESMARTCITY	11
finMED	13
GRASPINNO	19
GREENMIND	21
GREENOMED	23
MADRE	25
MED Greenhouses	27
PEFMED	29
REINWASTE	31
RE-LIVE WASTE	33



Project co-financed by the European
Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



ARISTOIL

Type of the result:

- Online tool
- Offline tool
- Methodology
- Strategy
- Action plan
- Policy recommendation
- Guideline

Language(s) in which the result is developed:

English (also Spanish, Greek, Italian and Croatian for educational materials, such as the guide for producers and subtitled videos)

What is the most appropriate level for its use/implementation?

Local and regional

DESCRIPTION OF THE RESULTS

The project offered trainings and seminars to olive oil producers and millers, introducing them to innovative production methods and tools that could support their production.

The Training Course for Olive Oil Producers is a deliverable from the first stage of the Aristoil project, based on the results of the phenolic composition generated after analysing olive oil samples provided by the countries involved (study phase). The training material is used by all partners to carry out trainings for producers interested in increasing the health value of the extra virgin olive oil they produce. Generic material was prepared for use in five countries, and each partner tailored this material according to the peculiarities of their country (crops, oil extraction process, ripening, production practices, etc.).

A total of 39 trainings and 28 seminars were organised for olive oil stakeholders in all partner countries with the events received 1,282 and 1,933 participants respectively, of which 791 and 593 were SMEs/beneficiaries. In total, 67 trainings and seminars took place with 3,215 participants, of which 1,384 belonged to the SME target group.

The training materials can be used by individual producers and olive millers to gain a better understanding of how agricultural processes and practices impact the quality of the final product. They may also develop a better understanding of the value of their products, adjusting their market value accordingly. In addition, the results and lessons learned from the project may be valuable to policy-makers. Wholesale enterprises, distributors and consumers can also benefit from learning what to look for when choosing a particular product.



PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

Aristoil aims to strengthen the Mediterranean olive oil sector through development and application of innovative production and quality control methods. The project analysed over 5,600 olive oil samples from all project countries, and affiliated producers received information from certification centres in Athens and Cordoba, providing information on their products' qualities.

In total, over 3,660 olive oil producers and olive millers benefitted from the project. The project also increased consumer awareness of the health benefits of olive oil. This information also reached local and regional public authorities (over 390 representatives), interest groups and NGOs (over 390), and international organisations such as the International Olive Oil Council.

Overall, thousands of consumers from all partner countries and interest groups participated in Aristoil infodays, networking events, conferences and seminars. Aristoil developed a standardised procedure for olive oil health certification, based on polyphenol concentration. This was done by creating a user-friendly colorimetric test kit (Aristometro) and two different laboratory analysis methods, which were calibrated to accurately quantify polyphenol. The platform used to disseminate information and promote Aristoil is the Aristoil eHub - a platform designed to promote the results of the project and offer users a wide range of communication material. Throughout the project the platform's end-users have provided feedback by participating in seminars, info days and trainings, and will continue to do so after the end of the project through the eHub.

WHAT IS THE TRANSFER POTENTIAL?

Continued cooperation with the Aristoil support team (over 3,500 producers and olive millers) from five European Mediterranean countries will be further explored. In addition, Svimed has committed to maintain, update and improve the Cluster eHub for at least three years following project closure, with the support of all partners. Triannual teleconferences are planned for the next three years, to plan cluster related activities. The Protocol for Med Cluster of Olive Oil Actors has provided the basis of the roadmap ahead. In addition, the Interreg MED Aristoil partnership has agreed to a Memorandum of Understanding developed by the lead partner of WP5 (Transferring), with the assistance of Svimed, determining the conditions for continued cooperation.

WHAT IS THE PROJECT REPLICABILITY?

The results are highly replicable in all olive-producing areas and result is durable, as it involves production and certification guidelines for every stage of production and quality control. Until recently we lacked the tools to measure specific phenolic compounds in olive oil. The guidelines for olive harvesting and oil production cover the entire production cycle, aiming to maximise product quality.

WHAT CHALLENGES MAY ARISE?

The partnership's main challenge is to maintain strong ties within itself and with international and EU organisations, within the agriculture sector and olive oil production. However, the partnership developed tools to provide structure and direction for the next vital steps, such as the Protocol for Med Cluster of Olive Oil Actors, which constitutes a strategic analysis of what developing a cluster entails, incorporating the lessons learned from the project.



Project co-financed by the European
Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



CAMARG

Type of the result:

Methodology

Language(s) in which the result is developed:

English. Some communication materials have also been translated into local languages (Italian, Croatian, French and Spanish)

What is the most appropriate level for its use/ implementation?

Local, regional, national and international

DESCRIPTION OF THE RESULTS

Transferring joint methodology

CAMARG worked in four Mediterranean countries (Italy, France, Croatia, Spain) to test and validate innovative e-commerce models, supporting local producers to enter the competitive market, increase their visibility, strengthen their role in the agri-food supply chain, and create a the link between urban and rural areas. These e-commerce models support the local food/0 kilometre effort, offering consumers high-quality produce straight to their door, at reasonable prices.

This digital solution connects rural and urban communities and boosts the consumption of local food. Through its activities CAMARG discovered that these models required less investment, allowing producers to work together, and increase their innovation capacity. As well as this, by using these systems modern consumers - who are increasingly interested in the origin of their food - can trace the produce they receive.

CAMARG has designed four regional portability plans and a joint methodology for knowledge transferring, which can be adapted and implemented across the Mediterranean. The collaboration model shared among local clusters has contributed to implementing a basic software that can be adapted to reach region's specific technical features and needs. The opportunities offered by digitalisation allows CAMARG's farm-to-fork and environment-friendly philosophy to support the transition towards more sustainable food systems and explore new ways of producing and consuming (efficient and sustainable food processing, increased public awareness and demand for sustainably-produced products, and energy-saving transport solutions).



PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

To develop this tool, high-profiled pilots were carried out in the project's four countries (Italy, France, Croatia, Spain), which worked together to test a new web-based solution which could be released into the market after the project finished. The online store is provided by CAMARG in SaaS mode, meaning that if a territory requests to use the service, this can be activated by generating a new software application adapted to the users' region. Starting from a basic software solution, a common methodological framework and four regional customised versions have been defined. By testing a common methodology for specific issues in the four countries, partners defined common plans

to transfer to local stakeholders, disseminating recommendations, business models and governance roadmaps. This tool is ready for dissemination across the Mediterranean, and international capacity building activities are encouraged, as this would increase the tool's impact. A Memorandum of Understanding has been signed among the four CAMARG demonstrators to create transnational innovation clusters to promote 0-km agri-food marketplaces in the Mediterranean. The exchange and dissemination of relevant data, experience, and findings will be the best way to expand the CAMARG community, incorporating new clusters that are interested in CAMARG's philosophy.

WHAT IS THE TRANSFER POTENTIAL?

The new smart distribution model promoted by the project through the advanced technology used is replicable, and can be adapted to a variety of users. For this reason, the tool has the potential to become a reference IT platform for the 0-km food movement. Local producers and rural communities can now benefit from the advantages of digitalisation, which will support them to manage market competition, and create new ways of selling and delivering their products to end-buyers while preserving the high quality of their products and food traditions.

WHAT IS THE PROJECT REPLICABILITY?

The new smart distribution model promoted by the project through the advanced technology used is replicable, and can be adapted to a variety of users. For this reason, the tool has the potential to become a reference IT platform for the 0-km food movement. Local producers and rural communities can now benefit from the advantages of digitalisation, which will support them to manage market competition, and create new ways of selling and delivering their products to end-buyers while preserving the high quality of their products and food traditions.

WHAT CHALLENGES MAY ARISE?

There are two major challenges: On the one hand, it may be difficult to manage the various platform customisation requests, and on the other hand, the maintenance and sizing of the infrastructure must be constantly aligned to the performance of specific e commerce activities, and adapted to any increase in access requests by end-users.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



CreaInnovation

Type of the result:

- Guideline
- Methodology
- Offline tools

Language(s) in which the result is developed:

English

What is the most appropriate level for its use/ implementation?

Local, national and transnational level

DESCRIPTION OF THE RESULTS

State of the art of creativity resources for SMEs' innovation

This methodology states the existing knowledge and practice of creative methods in the nine countries represented by the project partners. This document reports on various approaches to creativity as a structured practice used by companies to solve problems (creative problem solving) or to develop new ways of operating (processes, markets, products, etc.). There are also references to schools and relevant educational events, as well as consultancy companies and professionals with experience in using creative methods to support companies in becoming more innovative.

Handbook for CreaInnovation LABs design, management and implementation

The handbook is a guideline to design national and transnational creativity workshops within the CreaInnovation project; it describes the requirements and methodology that the creativity experts and facilitators should follow. The handbook can also support MSMEs (micro, small, and medium-sized enterprises) interested in learning about creative techniques used in these workshops to generate new innovative ideas. The handbook also includes a section on the Creativity Laboratories, as the most appropriate facilities in which to run the workshops.

Sustainability Assessment Model of regional and transnational innovation projects

The Sustainability Assessment Model is a tool with two uses: first, it can be used for the qualitative assessment of the economic, social and environmental sustainability of projects, and second, it can be used as a checklist of sustainability criteria for developing innovation projects. People generating new ideas - whether a product, process, market, or organisation - can consult the CISET (CreaInnovation Sustainability Evaluation Tool) to find the criteria to ensure the outcome's sustainability. Following this, the posteriori model allows users to evaluate the sustainability of their results. The simplicity of this model allows all users to evaluate their projects both in the design and implementation phase of their projects.

PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

Creainnovation Project codified, tested and documented the effectiveness of creative methods and processes to generate 135 sustainable innovation ideas in 59 SMEs from 9 countries, and 22 new co-business ideas for 9 SMEs in 3 transnational creativity laboratories. 12 creativity consultants led 53 creative work sessions with

250 SME employees, 45 external managers and 92 students in innovation and sustainability. The workshops were preceded and followed by a sustainability self-assessment (economic, social and environmental) of the company and the innovative ideas generated, supported by the Ciset model developed by the project.

WHAT IS THE TRANSFER POTENTIAL?

The handbook is a useful guideline ready to be implemented. The reports and guidelines for carrying out creativity workshops for innovation in SMEs are available to be transferred and used. Reports on the effectiveness of the approach demonstrated in the 53 working sessions with 59 SMEs are also available as evidence of the processes followed, problems faced, and results obtained. The description of the tools and design of Creativity Laboratories and the sustainability assessment model are ready to be used by institutional initiatives across countries.

Making creative methods for innovation widely available to SMEs depends on institutional initiatives in the various countries. Developing a business model to justify and create the Creativity Laboratories is yet to be done, as well as the identification of resources.

WHAT IS THE PROJECT REPLICABILITY?

The results produced and the indicators provided by the project are fully replicable at the local, national and transnational level. This is made possible by using processes and techniques (more than 150 creativity techniques - rational, associative, projective, analogical) that stimulate creative ability and develop problem-solving skills. On average, in a one-day creative workshop, 8-15 participants can generate 10-15 innovative ideas, at least 3 of which are significantly disruptive.

It is essential to carry out trainings for others to adopt creative methods. Possible activities could include an annual dissemination event, the creation of specific courses in academic institutions, and even offering basic trainings in elementary, primary, and high schools.

WHAT CHALLENGES MAY ARISE?

Three main challenges have been identified:

1. There is a lack of awareness about the potential of these approaches on behalf of both SMEs and institutions; it is necessary to address preconceptions and encourage participants to understand the value of these team activities.
2. Some institutions are reluctant to maintain operational spaces (Creativity Laboratories for innovation) for SMEs, even though they may have a high social and economic return.
3. Lastly, there is a lack of funding and resources for these activities.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



EMBRACE

Type of the result:

Online tool

Language(s) in which the result is developed:

English

What is the most appropriate level for its use/ implementation?

Other

DESCRIPTION OF THE RESULTS

Circular Business Model Toolkit

The Toolkit is an innovative, user-friendly instrument addressed to SMEs, intermediary organisations (IOs), clusters, and policymakers in the agricultural sectors and wine production, that are interested in transforming their businesses or 'ecosystem' work streams towards a circular economy approach.

The Toolkit is based on existing experiences, tools and models, but represents a new methodology and product fine-tuned and ready for use. The toolkit is composed of 18 tools that define an ecological business model. Each tool could help a business to:

- Review their purpose and the value
- Find inspiration for new solutions
- Analyse the current system to identify opportunities
- Turn plans into action.

The toolkit is available in a Moodle platform. Each tool has its corresponding PDF documents and video. The Toolkit includes a guide for facilitators, a template to be printed for on-site sessions, an editable online template, video tutorials, and more. The Toolkit is available for facilitators, consultants, trainers, and any other interested parties.



PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

During the project, over 90 companies tested the tool. Overall, until now over 50 tools have been tested.

WHAT IS THE TRANSFER POTENTIAL?

The result is ready to be implemented. The Toolkit has been developed based on existing experiences, tools and models, and their suitability for adoption has been evaluated and approved. Selected methodologies and tools have been fine-tuned and adapted, and new tools have been developed.

WHAT IS THE PROJECT REPLICABILITY?

The Toolkit could use by a variety of stakeholders; there is no territorial limitation.

WHAT CHALLENGES MAY ARISE?

In order to facilitate use of the Toolkit, it could be helpful to translate the toolkit into other languages.



Project co-financed by the European
Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



ESMARTCITY

Type of the result:

- Protocol: action plan/
policy recommendation
- Guidelines
- Methodology

Language(s) in which the result is developed:

- Smart City Protocol:
English
- Green Paper: English,
Greek, Italian, French,
Bosnian, Spanish,
Portuguese
- Lessons learned:
English and Spanish
- Methodology: English

What is the most appropriate level for its use/ implementation?

Local, regional and
national

DESCRIPTION OF THE RESULTS

[Smart City Protocol for the adaptation of Green Paper on Innovation Policy Change](#)

The Smart City Protocol is an action plan for local and regional public stakeholders to implement Esmartcity Policy Recommendations in the implementation phase of the POR FESR programme. The Protocol capitalises on the Green Paper for Innovation Policy Change, and can be used by EU member states that participated in the Esmartcity project.

The Green Paper for Innovation Policy Change details Esmartcity's policy proposals for partner territories. It provides recorded and systematised knowledge on relevant topics such as digitalisation, open data, and green procurement, while presenting good practices from Esmartcity's implementation, and from across Europe.

[Lessons learned on Enhancing Innovation through the Smart City concept](#)

The aim is to develop training guidelines about developing, testing and assessing the Esmartcity intervention strategies for enhancing innovation ecosystems through the smart city concept. The guidelines are used for capacity building with policy stakeholders.

[Methodology for Testing](#)

The result presents a methodology for evaluating pilot interventions related to the smart city paradigm, and more specifically the themes of smart energy-efficient buildings and smart public lighting, according to a set of indicators (cost, performance, technical, social).



PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

The Smart City Protocol also identifies specific priority investment areas in Esmartcity partner countries. The result has been implemented by regional stakeholders that are partners of the Esmartcity consortium. The project is in the process of having the Smart

City Protocol accepted and adopted by a range of stakeholders in the partner countries. The testing methodology has been implemented and testing in Esmartcity's multinational pilot testing involving four public lighting networks and five public building groups.

WHAT IS THE TRANSFER POTENTIAL?

The results builds on the ERDF – CF and aims to influence local and regional programmes, and funding mechanisms. There is a need for capacity building with local/regional stakeholder, so that they are able to enforce the policy recommendations.

The transferring methodology used in the project is based on the SECI Model Knowledge Creation Spiral that deals with the concepts of explicit and tacit knowledge, and proposes four ways to combine and convert between them: Socialisation, externalisation, combination, and internalisation. Furthermore, with reference to the involvement of target groups in the project and transfer of project results to them, the project has followed the power-interest grid approach detailed in its communication strategy, identifying four target groups to manage closely, keep satisfied, and to keep informed.

WHAT IS THE PROJECT REPLICABILITY?

All the results are ready to be implemented. The Smart City Protocol details an action plan for the adoption of Esmartcity policy recommendations by regional and local stakeholders, with reference to influencing local and regional funding mechanisms and operational programmes in the 2021-2027 programming period. The Protocol offers ready-to-use replicable material for stakeholders both in partner countries and in other EU member states.

The testing methodology is replicable and can be directly transferred to other areas of the programme. It refers to the energy efficiency framework to promote the reduction of energy consumption and costs in buildings and lighting, and to decrease of the greenhouse gas emissions in cities.

WHAT CHALLENGES MAY ARISE?

The Smart City Protocol may experience difficulty accessing regional/national funding instruments. The cost of training experts and accessing policy stakeholder may also be a challenge.

It is important to estimate the necessary investment costs, that have a short payback time (less than four years for public buildings).



Project co-financed by the European
Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



finMED

Type of the result:

- Manual
- Training Materials

Language(s) in which the result is developed:

English

What is the most appropriate level for its use/ implementation?

Local, regional and national

DESCRIPTION OF RESULT 1

Capacity Building Tool for Public Authorities to improve innovation financing in green sectors.

The Capacity Building Tool has been conceived to provide practical guidance to MED regional public authorities on the nature of capacities needed, how to support their development to concretely devise and adopt new solutions and practices for innovation financing in SMEs. It is an operative tool, to support Target Groups (at partner level) and general outreach (at MED level) to acquire workable knowledge, develop new skills, support the organisational scale-up of tools and policies. It aims at overcoming knowledge gaps related to the specific mechanisms and solutions for financing of innovation in green sectors SMEs through European Structural Funds.

The tool incorporates processes and organises information and data from previous project activities, scientific literature and practical experiences, in form of workable knowledge. It covers a broad range of contents and pursues learning at individual level as well as at organisational level. It has been developed to face the key challenges of:

- Mobilising already existing sources of funding, in more effective forms of investment for innovation with focus on environmental sustainability,
- Increasing green sectors SMEs access to finance for innovation.



PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

An online training has been developed to complement and support the delivery of the Capacity Building Tool Manual. The training course can be used as training material in itself, or used in combination with the Capacity Building Tool Manual.

A basic self-evaluation test has been provided, so to help users in understanding the suitability of the tool to their specific background and functions, as well as to support their organisations in selecting the staff, officials and managers to be involved in the capacity building exercise.

The Testing involved 79 trainees, from 8 MED countries: Italy – Piemonte Region and Sardinia Region, Greece – Region of Western Macedonia, France – Collectivity of Corsica and Sud/PACA Region, Cyprus, Malta, Slovenia, Bosnia Herzegovina, Spain – Andalusia Region and Community of Valencia.

A Report on the testing was realised and describes the testing exercise from the identification of trainees to the evaluation test of the overall training experience.

WHAT IS THE TRANSFER POTENTIAL?

The capacity Building Tool allows to overcome knowledge and skills gaps related to the specific mechanisms and solutions for financing of innovation in **green sectors SMEs through European Structural Funds**. It addresses users with basic knowledge of the subject, even if already familiar with public support programmes for SMEs. The lack of competencies and skills is normally one of the major obstacles for Regions and Managing Authorities to use Financial Instruments as implementing option of Structural Funds.

Anyway, as Financial Instruments will play an important role in the delivery of the EU Green Deal, as well as in the Structural Funds 2021/2027, the knowledge of technical, legislative and financial aspects for the establishment and implementation of Financial Instruments will be even more crucial.

WHAT IS THE PROJECT REPLICABILITY?

The capacity building tool is usable and available for any potential trainees. It is possible to download the Manual and follow online Training Videos. Any Region or Public authority can replicate the methodology and the content, throughout all the MED cooperation area.

Eventual Updates could be needed in the future, according to the evolution of regulatory framework in the Financial Instruments field.

WHAT CHALLENGES MAY ARISE?

The online training has been developed to complement and support the delivery of the Capacity Building Tool Manual. The training course can be used as training material in itself, or used in combination with the Capacity Building Tool Manual. This, of course, is the best option.

The training has been delivered on-line through videos available in YouTube, not downloadable. The Training is organised in eight modules of 12/15 minutes, based on the chapters that build the Capacity Building Tool Manual (for a total duration of around 90 minutes). This information must be transmitted to the trainees in advance, to make them aware of the efforts needed to follow the process.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



finMED

Type of the result:

Online tool

Language(s) in which the result is developed:

English

What is the most appropriate level for its use/ implementation?

Local, regional and national

DESCRIPTION OF RESULT 2

Support Service Tool for Clusters and Business Support Organisations to support SMEs access to finance for innovation in Green Sectors.

The Tool works as a Decision Support System for SMEs, that offers a positioning and adequacy analysis of the company toward the financial market. It can be used during the process of identifying, selecting and applying for the available sources of funding that better serves SMEs needs.

The Tool helps SMEs in identifying suitable financing opportunities such as equity or debt financing, as well to clarify market requirements and standards to select the appropriated financing mechanisms.

In the meantime, it is also a complete tool for Clusters and Business Support Organisations to be included in their service portfolio when assisting SMEs.

The tool:

- Offers a quick and rigorous self- assessment on the different area of the enterprise
- Summarises SMEs financial and organisational situation
- Helps SMEs to structure their strategy and proposes improvements or guidance
- Offers “general knowledge” of how to obtain funding
- Provides a complete report of the enterprise with a 360° vision

PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

The Support Service Tool has been tested with the involvement of both target-groups (clusters and business support organisations) and by end-users (SMEs). The objective of the testing was to simulate in real context the feasibility of the support service and to detect deficiencies and weaknesses.

In order to have a geographically representative sample, the support service tool was tested with about 65 SMEs, from the finMED consortium area: Italy, Spain, Greece, Portugal, Malta, France, France, Bosnia and Herzegovina, Cyprus, Slovenia.

The selection of the SMEs taking part in the testing has followed an open procedure: a public notice was given via project partners websites/social media/ newsletter for interested SMEs to apply. SMEs were selected on a first arrived-first served basis. An English version of the Public call was

realised, translated into partner languages and modified with technical adjustments according to national requirements.

SMEs interested in testing the tool filled in the Application for Expression of Interest downloadable from finMED partners website. Integral part of the application form was a signed Cooperation agreement between the involved finMED partners and the SME. Each testing session lasted around 60 minutes. After the testing, both SMEs and cluster/business support organisations were asked to provide feedback on the tool through the Simulation protocol, a questionnaire devised, in order to gather feedbacks and suggestions on how to improve or upgrade the current version of the tool. The feedback session took approximately 15 minutes. Simulation protocol's results were gathered in a final evaluation report.

WHAT IS THE TRANSFER POTENTIAL?

The Tool is free of charge and available online. The Tool can be transferred in any clusters and business support organisations that aim to enlarging their portfolio of services offered to the SMEs. The Tool can offer a positioning and strategic analysis of the SME related to actual investment needs or projects, but can be as well useful at internal and organisational level to simulate possible future scenarios.

WHAT IS THE PROJECT REPLICABILITY?

The Tool has been specifically designed and developed for the optimal scenario that foresees the presence of:

- The perator of the Cluster Operator/Business Support Organisation that performs the data entry and checks the feedbacks and answers provided.
- The Respondent of the SME to which the questions are read and eventually explained by the Operator.

WHAT CHALLENGES MAY ARISE?

The operator of the cluster/business support organisatio should have good knowledge of financial instruments, as well as the financial vocabulary used by the tool in order to avoid any difficulties during the process.

If the operator does not have a financial background, a deeper preparation is highly recemented, before the first use with the SMEs. A further interpretation of the reports is necessary in order to give to the SME a complete/ clear feedback of its potential development, or simulate future trends and scenarios.

For having a reliable picture in the report/ simulation results the respondent should have a good knowledge of the SMEs overall situation.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



GRASPINNO

Type of the result:

- Online tool
- Methodology
- Transnational Mediterranean Network (TMN)
- Living Labs (LLs)
- Methodology for selecting green criteria in e-GPP
- Guidelines for the Public-Private partnership to achieve energy efficiency in Public Buildings

Language(s) in which the result is developed:

English

What is the most appropriate level for its use/ implementation?

Local and regional

DESCRIPTION OF THE RESULTS

GRASPINNO offers tools to public administrations (PAs) to facilitate electronic green public procurement (eGPP). These tools provide knowledge and sustainability criteria to support decision-making for selecting the best tenders, products and solutions on offer. GRASPINNO also supports SMEs in submitting offers to GPP tenders.

The project created the **GRASPINNO Unified Platform** that integrates three tools: the GRASPINNO Database, the eGPP Support tool, and the Life Cycle Costing Calculating Tool (LCC); Additionally, the project created the Transnational Mediterranean Network (TMN) tool. These tools present the following functions:

- The GRASPINNO Database strengthens PAs' capacity to set green energy requirements, and supports SMEs in implementing these requirements,
- The eGPP tool offers PAs an easier way to collect green specifications to be used during tender preparation,
- The LCC tool calculates the cost of proposed solutions over their lifetime.
- The TMN offers both public and private parties the opportunity to interact and learn from each other.

The **GRASPINNO Living Lab methodology** is based on seven living labs in six countries which cover a range of areas/scopes within electronic green public procurement. The living labs also offer mentoring and training on green policies and energy refurbishment. About 60 public institutions and business support organisations, and 20 SMEs were involved in the living labs. All parties involved in the project have gained knowledge about green public procurement, funding and mentoring, energy consumption control, mechanisms for removing obstacles for energy refurbishment, and improved governance for energy efficiency and renewable energy sources.



PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

The tools of the GRASPINNO Unified Platform support PAs in the implementation of green public procurement while assisting in choosing products and services for energy refurbishment and the installation of renewable energy sources in their public buildings. The challenges faced by the PAs correspond to the lack of familiarity with electronic green public procurement (e-GPP), and, as a consequence, it implies an increasing of the cautionness to integrate e-GPP procedures.

The GRASPINNO Unified Platform also provides tools for SMEs and enterprises working on green growth initiatives. These tools support SMEs to promote their green products and services to a wide range of public procurers, highlighting their sustainable practices and certifications. The TMN allows SMEs

to communicate with other actors in their area of interest, offering the chance to exchange knowledge and experiences.

The **GRASPINNO Unified Platform** has been tested in 13 pilots, involving 28 public buildings in five countries across the Mediterranean. On average, the pilots' energy consumption it has been reported to be reduced by 10%. Public procurers familiar with the procurement procedure and the terminology can easily use the GRASPINNO platform. The platform can be easily used by Public procurers familiar with the procurement procedure and the terminology. However, specific knowledge may be needed for the use of the LCC tool. In order to solve this, the platform provides user manuals to support all users.

WHAT IS THE TRANSFER POTENTIAL?

The tools of the GRASPINNO Unified Platform can support stakeholders, but it cannot be made compulsory, nor can it replace national/regional policies and official platforms used for public procurement procedures. The GRASPINNO Unified Platform can be used by public procurers when they want to access green products and services for the energy refurbishment of public buildings, and to manage energy efficiency. Public procurers can consult the GRASPINNO databases to search for existing green products and services in the market (along with their specific characteristics).

Public procurers can use the e-GPP tool to prepare documents for the tenders, incorporating the sustainability criteria. However, the tenders' documents cannot be directly published since public procurement must follow the official national procurement procedures. The LCC tool allows public procurers to calculate the life cycle cost of products and services (green or not) either before or after their procurement. Public procurers may use these tools before the procurement process to research existing products and services.

Finally, SMEs can use the databases to advertise their green products and services to potential procurers. SMEs are recommended to regularly update the database, adding new products and services to promote their business.

WHAT IS THE PROJECT REPLICABILITY?

The GRASPINNO Unified Platform and its tools are replicable across different regions. The University of Patras and other partners will maintain the platform for years to come, so the project will have a long-term impact.

WHAT CHALLENGES MAY ARISE?

The main challenge of GRASPINNO methodology involve the PAs. Once the GRASPINNO Unified Platform is used, the PA should adapt their national policies to the results of using the tool, publishing the tender through their official procurement platforms. As some PAs perceive this step as unnecessary work, PAs must take the lead and show the value of the e-GPP tool as guidance for including green criteria in their procurement procedures. Another challenge may be the lack of regional data needed for the implementation of the ex ante LCC tool.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



GREENMIND

Type of the result:

- Online tool
- Offline tool
- Methodology
- Strategy
- Action plan
- Policy recommendation
- Guideline

Language(s) in which the result is developed:

English

What is the most appropriate level for its use/ implementation?

Regional

DESCRIPTION OF THE RESULTS

Operational services model

The Transferable Service Model Methodology is based on Greem Mind's pilot project evaluation. The findings are analysed according to two approaches: comparative analysis and reasoning by analogy.

Both approaches analyse the context within which each pilot was conceptualised, implemented and evaluated. Therefore, considerations such as regional innovation, mobility stakeholders, GDP, and fiscal considerations are brought together as analytical filters.

Transnational Innovation Network for SMEs

Green Mind promotes economic competitiveness and innovation in green and smart mobility, by strengthening regional and transnational cooperation between businesses, academia, and policymakers.

Green Mind's activities include:

- Testing new market intelligence, screening public funding, and B2B matchmaking for SMEs
- Building a transferable model of the tested services for clusters and agencies
- Setting up a transnational innovation network involving authorities, business and academia
- Implementing a transferring programme for clusters and agencies to support their transnational activities
- Delivering a policy support programme to mainstream the project results based on the Smart Specialisation Strategies of the regions involved

The Green Mind European Network fosters innovation in the mobility industry to enhance its competitiveness and sustainability. The Network promotes cooperation and partnership at the regional and European levels and promotes dialogue and exchange of experiences focused on innovation in products and services in the mobility industry. The Network addresses **industry, research and public stakeholders** to stimulate **urban** and **region-led innovation**, and to **foster cooperation**.



PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

The transferable service model for SMEs was developed to assist clusters and agencies to implement and provide services that enhance competitiveness. The model's first step is a thorough analysis of the current state of the sector in the region. The customisation of the model according to the needs of the SMEs involved is key for its success. The model supports SMEs to understand and exploit

market information, improving and expanding their customers' and associates' network through B2B events and other networking opportunities, and accessing funding for their activities through participation in dedicated calls, and assistance to apply. Finally, although the model was developed to address green and smart mobility, the model can be adapted to other businesses and sectors.

WHAT IS THE TRANSFER POTENTIAL?

The model is ready to be implemented. Meaningful analysis of the evaluation results requires analysis of the local context, to be taken into consideration in the transferring.

The specific characteristics of each pilot site at the regional and national levels must be considered, as well as the needs of the local eco-systems and projects – market intelligence, B2B matching, and identification of public funding. Sector representation in the pilot sites, innovation status at regional and national level, GDP, and the breadth and depth of service application across the pilot sites are also considered.

WHAT IS THE PROJECT REPLICABILITY?

The Innovation Network Agreement can be replicated by other institutions/clusters with different SMEs and public authorities to create new transnational networks. For successful application of the transferable model, below are recommendations to guide the user, based on the experience of Green Mind's project partners:

- The green and smart mobility sector is highly diverse, which can lead to incompatibilities in service operations and among participants. For this reason, it is recommended for users to focus on a specific area of green and smart mobility, and to be clear on the model's implementation.
- Clearly defined timeline should be followed without delays so that the SMEs can participate in the activities without interruptions to their regular operation.
- Activities should be appropriately promoted to engage SMEs and encourage their participation. Feedback from SMEs is vital for appropriate adaptation of the model.
- As well as SMEs, many different stakeholders can be involved in the model, such as clusters, business-supporting organisations, and citizens, to promote their needs. The transferable model can also be used by other business sectors.
- Within this model a variety of approaches can be taken according to the specific regional characteristics and needs of the SMEs involved. As such, the user of the model can adapt the steps of services operations and/or develop others that will benefit those involved.

WHAT CHALLENGES MAY ARISE?

Participants may lose interest in the process, and therefore it would be necessary to regularly update information related to service operations, helping users reap the benefits of the services provided and enhance their competitiveness.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



GREENOMED

Type of the result:

- Methodology
- Offline tools
- Pilot plants projects
- Policy recommendation

Language(s) in which the result is developed:

English

What is the most appropriate level for its use/ implementation?

Inter-regional

DESCRIPTION OF THE RESULTS

The **GREENOMED** trans-national cooperation methodology was used by the regions involved in **GREENOMED** project – including Varazdin (Croatia), east and west Slovenia, Central Macedonia (Greece), Marche (Italy) and Auvergne Rhone-Alpes (France) – to design and implement pilot plants for green manufacturing using a logic of smart specialisation, based on an inter-regional cooperative framework. This methodology was designed based on the experiences of STIIMA-CNR (Italy), AFIL (Lombardy) and EURECAT (Catalonia) within the Vanguard Initiative and the Efficient and Sustainable Manufacturing Pilot (ESM), with the aim to expand the ESM network across the Mediterranean.

Following the Vanguard Initiative methodology (Learn-Connect-Demonstrate-Commercialise), **GREENOMED** delivered a cluster-governed methodology that supports regional stakeholders to implement pilot plants, starting from the design, the consolidation of the Working Groups, until the definition of detailed implementation plans. The **GREENOMED** methodology is made up of detailed steps, complemented by a list of support services and tools that clusters (or other intermediaries governing the process) can exploit during each phase of implementation.

The **GREENOMED** methodology supported the establishment of regional stakeholder working groups and facilitated the creation of interregional connections between groups working on synergic projects. The most advanced topics developed by the regional working groups include: 'De and Remanufacturing for Circular Economy', 'Sustainable Food Manufacturing', and 'Bioeconomy'.

Institutional framework for trans-regional cooperation in green manufacturing innovation: **GREENOMED** project partners shared project updates and results with regional authorities and Associated Partners, contributing to the design of an institutional framework to increase the effectiveness of transnational cooperation. At the end of the project, regional authorities were invited to the project's final conference, where project representatives highlighted the challenges faced by regional stakeholders in structuring inter-regional cooperation, and shared specific needs for the upcoming period.

Key project results also include: four trans-regional cooperation services offered by clusters to SMEs, 100 enterprises involved in the collaborative design and setup of pilot plants, and the establishment of eight transnational innovation clusters offering cooperation services.



PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

The trans-regional cooperation methodology has been tested by the clusters (or intermediaries) in the project's regions to assess its sustainability, appropriateness, usability and effectiveness. Clusters are the focal points for testing the methodology, by implementing activities targeted at regional stakeholder groups based on the defined workplan. Indeed, they are coordinating a collaborative process for the bottom-up intra-regional identification of priority innovation projects in the area of green manufacturing. As well as this, they support trans-regional cooperation with other clusters to identify synergies with emerging projects in other regions.

One of the objectives of **GREENOMED** project was to test the methodology during the project's implementation amongst the partners involved.

The results have been achieved in testing regions within four topics:

- 'Secure and Sustainable Food Manufacturing', leading to new demo-case proposals in the ESM Pilot of the Vanguard Initiative and in the EU S3 Platform, with 20 intermediaries and stakeholders involved.
- 'Seamless integration of Electronics and Plastics', leading to the definition of a new use-case in polymer-based functional products, an ESM Pilot of the Vanguard Initiative, involving 15 intermediaries and stakeholder.
- 'De- and Remanufacturing' according to circular economy principles, involving 20 stakeholders and intermediaries.
- 'Bio-economy', exploiting of agricultural waste linked to the Bioeconomy pilot of the Vanguard Initiative.

WHAT IS THE TRANSFER POTENTIAL?

The project's model is ready to use and transfer to other regions, and has in fact already started. Methodology-related actions can be implemented by clusters in various regions, but when a concrete opportunity to develop a pilot plant emerges it should be integrated in the framework of the Vanguard Initiative, and this requires a formal commitment from the policy-makers of the regions involved.

WHAT IS THE PROJECT REPLICABILITY?

The GREENOMED methodology and related tools and services have been formalised and tested across the project's region; however, they have also shown to be replicable in other regions and contexts. One of the methodology's main features is its adaptability to the different contexts to which it is applied. The results are even more powerful if applied in a number of regions, promoting interregional cooperation.

GREENOMED's tools and services have been structured to provide guidelines to the methodology users, but they are adaptable to different situation and needs. Considering the scope of GREENOMED's tools to foster the interregional collaboration leveraging on common challenges, the methodology's steps can be easily reiterated in the long-term following the lifecycle of a specific project from the idea generation until its implementation and exploitation in the market.

WHAT CHALLENGES MAY ARISE?

The methodology testing carried out during GREENOMED project identified the main challenges encountered by project partners. In particular, the process is long, and success strongly depends on the commitment of the stakeholders. Moreover, given that results are usually obtained in the long run, it can be challenging to maintain companies' engagement and motivation.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



MADRE

Type of the result:

- Offline tool
- Policy recommendations

Language(s) in which the result is developed:

- English
- French

What is the most appropriate level for its use/ implementation?

Local, regional and transnational

DESCRIPTION OF THE RESULTS

Thematic White Papers

The **MADRE** project aims to change the metropolitan food supply model by capitalising on existing good practices, by empowering the different stakeholders in metropolitan and peri-urban agriculture, and by initiating a dynamic of transnational cooperation in the MED region.

The **MADRE** partners, based in France (AVITEM, ANIMA, Mediterranean Agronomic Institute of Montpellier), Italy (Metropolitan City of Bologna), Spain (MedCities – Barcelona Metropolitan Area), Greece (Aristotle University of Thessaloniki) and Albania (Agricultural University of Tirana), all representing a flagship metropolitan area, joined force to:

- improve the innovation capacity of metropolitan agriculture in the Mediterranean territories;
- identify and evaluate the economic, environmental and social performance factors of metropolitan agriculture;
- identify and network metropolitan agriculture stakeholders;
- assess the feasibility, conditions and means of creating a transnational cluster of actors in metropolitan agriculture.

The project produced a Urban and Peri-Urban Agriculture Catalogue highlighting the best practices in six MADRE metropolises: Barcelona, Montpellier, Marseille, Bologna, Tirana and Thessaloniki. This catalogue focuses on the most relevant, innovative and replicable practices in terms of farmers' innovation, social innovation, consumer innovation, academic research, territorial innovation and transnational innovation. It is intended for local or national public authorities, but also academia, consumer associations and NGOs active in agriculture preservation and environment protection, and last but not least, urban or peri-urban farmers and agri-food professionals!

A book on metropolitan agriculture and nature-based solutions was also edited to analyse the social and relational impact of agriculture into the city and the territory. It presents different points of view and methodologies to give suggestions and indications for the city and urban areas innovation, especially in the Mediterranean European countries.

A policy paper finally highlighted the importance of urban and peri-urban agriculture in the Mediterranean; the key issues and good practices to foster metropolitan agriculture and some policy recommendations addressing urban and peri-urban agriculture from a critical, proposal-oriented perspective and with a special focus on Mediterranean metropolitan areas. Building from existing knowledge and successful practices in the region, the document is aimed at giving a clear and succinct overview of the main challenges and opportunities of this issue. In addition to that, a number of inspiring examples are also presented along with a series of recommendations for public action to pave the road to sustainable metropolitan agriculture.

PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

MADRE policy recommendations were disseminated towards policy makers and technicians in charge of development agriculture and local food systems within 6 European cities. These recommendations helped raising awareness on metropolitan agriculture positive impact and sharing best practices in terms of farmers' innovation, social innovation, consumer

innovation, academic research, territorial innovation and transnational innovation.

The SESAME micro-learning training, inspired by MADRE recommendations, were tested in November 2020 towards policy makers and technicians in Marseille, Bologna and Barcelona.

WHAT IS THE TRANSFER POTENTIAL?

The ERASMUS project SESAME allowed partners to have additional financial resources to capitalise on MADRE. The good practices highlighted in Madre Urban and Peri-Urban Agriculture Catalogue and policy recommendations presented in its policy paper are all the more relevant to foster the transition to sustainability and the "new normal".

The policy recommendations were updated and converted into micro-learning video to be disseminated towards policy makers and technicians in Marseille, Bologna and Barcelona. Collaborative workshops with the relevant stakeholders will be needed to disseminate good practices and trigger the development of similar initiatives

WHAT IS THE PROJECT REPLICABILITY?

MADRE's policy recommendations capitalise on other projects. The SESAME project - funded by the ERASMUS+ programme and set up by AVITEM, MCBO and AMB - focuses on urban and peri-urban agriculture. It is run by entrepreneurs who design and lead agricultural projects, and involves public authorities through implementation of facilitating strategies. SESAME designs and tests training courses: one on entrepreneurship in agricultural high schools, and 'micro-learning' courses to raise awareness among spatial planning managers.

WHAT CHALLENGES MAY ARISE?

The involvement of public authorities is key to allow and support the development of metropolitan agriculture. At the national level, incorporating metropolitan agriculture into legal frameworks is a prerequisite. At the local level, new initiatives needs support especially in terms of priority given to protecting agricultural land and facilitating its access and localising food systems through short supply chains.

The expected transferring potential is the emergence of new metropolitan agriculture initiatives in the n the Mediterranean territories.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



MED Greenhouses

Type of the result:

Policy recommendations

Language(s) in which the result is developed:

English

What is the most appropriate level for its use/ implementation?

International and interregional

DESCRIPTION OF THE RESULTS

[Establishment of the Agricultural Transnational Innovative Cluster \(ATI-Cluster\)](#)

The ATI-Cluster is an initiative established by the partners of the Interreg MED project MED Greenhouses, carried out in six countries across the Mediterranean (Albania, Greece, France, Italy, Spain and Cyprus), that share joint challenges in the agricultural sector. The ATI-Cluster operates as a bridge between researchers, enterprises, farmers and policymakers to improve the environmental, economic and social conditions of Mediterranean rural. The ATI-Cluster stimulates and promotes sustainable production techniques by disseminating and transferring information and innovative technologies among key actors of the agriculture sector, in particular those that rely on greenhouses. The ATI-Cluster contributes to sustainable agriculture and green growth, promoting eco-innovative solutions (consuming less energy, water and fertiliser), and increasing yield.

It aims to offer integrated services to its members such as:

- SMEs and farmers missions to end-users of the agriculture/greenhouse sector
- Networking events
- Pitching, coaching and mentoring services
- Info days and capacity building seminars

The ATI aims to:

- Enhance competitiveness within local and international markets promoting environmentally friendly and cutting-edge technologies
- Enhance the quality and quantity of agricultural production whilst minimising water and energy sources
- Create and encourage synergies between members and key actors in the sector
- Stimulate, assist, and promote eco-innovation, identifying financial mechanisms and opportunities such as potential investors
- Introduction innovative technologies in the greenhouse sector and knowledge transfer

PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

The members of the ATI -Cluster can be registered by signing the MoA/U. Until today, more than 111 members (Actors of 4-helix related with the agriculture sector) have been registered so far. The Cluster activities/objectives and the MoA/U were officially presented in the Final Conference that was held in Volos (4/12/2019). An online registration form is available [here](#).

The ATI-Cluster, besides the registration of the new members and the provision of tailored services, also aims to collaborate with existing clusters exchanging information and experiences and create synergies. Due to Covid-19, the operation of the ATI-Cluster could not be implemented as planned, however more efforts will be undertaken by the partners once the lock-down is over."

WHAT IS THE TRANSFER POTENTIAL?

The ATI-Cluster's main features and model have been designed and finalised. However, the COVID-19 lockdown and lack of financial resources made the implementation of the designed services difficult and uncertain.

Due to limited time, the ATI-Cluster was designed to operate without having any legal framework, at least for the first three years of its operation. It was agreed that the role of non-governmental organisations would be agreed further down the line.

WHAT IS THE PROJECT REPLICABILITY?

The ATI-Cluster could expand to other Mediterranean countries, beyond the current six countries involved.

Participants from each country involved members to form part of the Cluster's activities and collaborate with other members of the Cluster at the national and international levels. To join the Cluster, members sign a Memorandum of Understanding/Agreement, which is available online [here](#), and will be shared by email for the upcoming activities.

The Cluster's activities could be conducted every few of months (during the early years of its operation) and the frequency could be increased further down the line (depending on the financial resources available).

The Cluster also facilitates synergies and the collaboration between key actors in the agricultural sectors, and supports the implementation of eco-innovation investments.

WHAT CHALLENGES MAY ARISE?

The funding of the Cluster's activities remains the main obstacle to implementation. The partners are assessing possible funds that could be used for the continuation if its operation.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



PEFMED

Type of the result:

- Offline tools: 3 guides for users, leaflets, KPIs and PEF tools
- Template for the collection of best practices

Language(s) in which the result is developed:

General information about the project is available in Spanish, French, Greek, Italian, Slovenian and Portuguese

What is the most appropriate level for its use/ implementation?

Local, regional, international

DESCRIPTION OF THE RESULTS

Scheme to merge PEF with Social Footprint & Product Social Identity Indicators – ([SOCIAL and ECONOMIC KPIs TOOL](#))

The tool consists of a set of 14 Economic and Social Key Performance Indicators (KPIs) and 36 questions to test the applicability of the new EU Product Environmental Footprint method (PEF) for some specific product groups in 9 MED agrofood regional systems (clusters & supply chains), with the final aim of fostering targeted systemic Eco innovation interventions to green the agrofood sector, raise the market value of PEF-compliant productions and galvanise the Smart Specialisation Strategies (RIS3) goals related to innovation in agrofood & industrial production.

[Product Environmental Footprint tool](#) for 3 products: olive oil, packed water and wine

The tool allows a qualitative assessment and a quantitative assessment of each sector, from their production to their end of life and facilitate the elaboration of PEF studies in the olive oil, bottled water and wine sectors, all involved in PEFMED pilot phase, in compliance with the relevant PEF Category Rules (PEFCRs). This simplified tool helps assessing the product life cycle hotspots, e.g. in terms of most critical phases, processes, and impact categories, and improvement potentials.

Good practices Info sheets on technological and management models for improving the environmental footprint of agro-food value chains

Collection of 60 info sheets describing technological and management models to be used as a source of information and inspiration by companies (mainly SMEs) working in the agro-food sector, willing to improve their environmental and socio-economic profile. All PEFMED partners contributed their experiences and knowledge acquired through the project.



SE-KPIS TOOL IMPLEMENTATION AND EVALUATION BY END-USERS

The results of applying SE-KPIS tool reflect the company's progress in this field, and indicate the sustainability of its supply chain in socio-economic terms. Using this method on a yearly basis allows companies to track progress on specific KPIs, and identify areas for improvement. Users can choose to focus their resources on all KPIs, or select those that most interest them.

This tool was tested by 9 pilot companies within the agro-food sector across the Mediterranean region, as part of PEFMED project. Each company developed an action plan based on the results of the initial evaluation, and a summary report on the pilot phase was developed and is available on the project website report after the pilot phase was finished.

WHAT IS THE TRANSFER POTENTIAL?

The PEF and SE-KPIS tools will serve as a basis to know the existing level of data, practices and challenges on each SME supply chain from the environmental and socio economic point of view. The results can enrich an improvement action plan for each product analysed, by selecting managing and technological actions and integrating them into the company's strategy.

The 60 technical info sheets have the potential to widely spread information about sustainable practices in the agro-food industry. All **PEFMED** partners are encouraged to distribute them during the events, especially during meetings with companies that may be interested in using them. The main expected impact is to make agro-food companies aware of the numerous ways to become more sustainable from an environmental and socio-economic standpoint.

WHAT IS THE PROJECT REPLICABILITY?

The PEFMED results permit companies to use the tools to have a very complete field of study on environmental and socio-economic aspects makes possible to identify if a gain of impact at one life cycle stage will degrade the environmental impact at other stages, or in the same stage but on another impact. It also allows to have a complete inventory of flows coming through the system or the organisation having indicators for each category of environmental impact and socio-economic aspects.

The info sheets inform companies about opportunities for becoming more sustainable. If desired, the number of best practices available could be extended to other sectors and organised in a database. The possibility of allowing the addition of new contributions into the collection by those interested in sharing their knowledge could create a constant flow of new models and solutions.

WHAT CHALLENGES MAY ARISE?

The need of knowledge of social "hot spots". The info sheets should be updated with new innovative best practices, technologies and tools that would make food supply chains more sustainable.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



REINWASTE

Type of the result:

Model

Language(s) in which the result is developed:

English, Spanish, French and Italian

What is the most appropriate level for its use/implementation?

Local, regional, national and international

DESCRIPTION OF THE RESULTS

The results of the pilot's actions, equally distributed on primary sector and food industry, carried out over 3 supply chains (meat, dairy, horticulture), have inspired the Regional Action Plans. These documents provide recommendations to policy makers and sector operators to continue the actions started within **REINWASTE**, aimed at reducing inorganic wastes, addressing the next steps to be adopted in each regional context to foster a more circular economy.

The main propositions to minimize the inorganic waste and EU Funds for 2021-2027 are listed below:

R&D and innovation projects to reach further solutions and new materials for farmers and industries. There is margin to study further biodegradable or compostable materials, reducing their costs, also for recycled & recyclable materials such as mono-material instead of multilayer, packaging optimization (reducing thickness, avoid unnecessary packaging) and Public-private partnerships to transfer solutions to commercial phase.

Is it also important to promote actors involved in the reduction of inorganic waste: farmers, agro-industries, waste managers, institutions, by extending the support for the use of new materials and improve waste management through associative models, EPRS (Extended Producer Responsibility Systems), traceability, valorisation plants, collection points, infrastructures for correct management of new materials.

In order to improve empowerment and abilities around waste management, different actions can be done: mentorship and consultancy for farmers and agro-industries to reduce inorganic waste, when possible, having a new teams members specialized on waste and, reinforce networking between actors to create new collaborations.



PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

Besides the above mentioned Regional Action Plans that offer policy recommendations, other REINWASTE results are more focused on the agri-food sector. Innovation to reduce inorganic waste in farms and food industries is well represented in the 14 transferability factsheets delivered by the REINWASTE project. Specific information about a selection of the best and most transferable

solutions tested in the pilot phase of the project are shown in these factsheets.

In general, most of the novelties proposed are already on the market or close to the market. In the latter case, most of the promising solutions are next to be validated in a pre-commercial phase.

WHAT IS THE TRANSFER POTENTIAL AND PROJECT REPLICABILITY?

The novelties are globally open to all interested practitioners and have a sounding potential to be transferred outside the supply chain they were tested for.

Nevertheless, the transferability potential shall be well-tailored according to the type of companies and its capacity to increase expenses to get equipped with new investments.

In the primary sector, the proposed solutions are globally fitting to any-size company, with a low degree of mechanization. In the supply chains analysed there are mature solutions that can be already found on the market, with affordable costs. Some other solutions are not fully ready for the market, although they are well promising. At this regard, R&D can have further margins to scout new and more sustainable materials, like the development of biodegradable films.

With regard to food industry, a particular attention should be devoted to those low-plastic or recycled plastic solutions adopted that are already available on the market, positively applied in one sector and likely to be transferred to other supply chains. Although they might have a good transferability potential, every supply chain has its own safety and quality requirements, and the exportability of such solutions could require a significant test phase before being considered as a suitable replacement for existing packaging. Hence, a costs and timing verification of possible "hidden" issues should be duly assessed beforehand, as part of a focalized risk-innovation analysis. As part of the wise risk analysis to be tackled before introducing innovation, the verification of internal competences is demanding: lack of expertise to handle the novelty is often pointed out as one of those underestimated risks that companies face off and that could generate extra costs.

WHAT CHALLENGES MAY ARISE?

The most highlighted risk for the adoption of these solutions is the change of regulatory aspects, since numerous organizations (in particular, those belonging to food transformation and challenged in finding new packaging solutions) are concerned that the legislation could make proposed solutions obsolete or unusable.

The high cost has been identified as a relevant barrier for the introduction of some solutions proposed. However costs and overruns may decrease as solutions are spread among producers due to economies of scale. Increasing environmental awareness in society and in the producing sector may raise the use of these solutions.



Project co-financed by the European Regional Development Fund

A project labelled by the UfM



Union for the Mediterranean
Union pour la Méditerranée
الإتحاد من أجل المتوسط



RE-LIVE WASTE

Type of the result:

- Methodology
- Guidelines
- Policy recommendations

Language(s) in which the result is developed:

- English
- Spanish
- Italian
- Serbo-Croatian
- Greek

What is the most appropriate level for its use/ implementation?

Local, regional, national and international

DESCRIPTION OF THE RESULTS

Improper livestock waste management pollutes surface water (eutrophication and the addition of micropollutants) and accelerates climate change, through the emission of greenhouse gases. During the **Re-Live Waste** project, livestock waste was used to produce high-value bio-fertilisers by recovering nutrients from heavily polluted streams. To do so, four pilot plants (of which one was upgraded) were installed to incorporate innovative techniques in Italy, Cyprus, Spain, and Bosnia and Herzegovina, using treated and untreated slurries as raw materials to produce bio-fertilisers.

The processes involved the crystallisation of an organo-mineral fertiliser with isomolar ratios of magnesium, ammonium, and phosphate and chemical formula $\text{NH}_4\text{MgPO}_4 \cdot 6\text{H}_2\text{O}$, called struvite. Struvite is a slow nutrient releaser, allowing it to fertilise crops more efficiently than conventional formulas, while creating fewer pollution streams.

It is produced by adding excess amounts of Mg^{+2} compared to ammonium and phosphate which cause supersaturation of the solution and result in struvite precipitation. In this case, raw slurries and anaerobically treated effluents were used to produce struvite.



PROJECT IMPLEMENTATION AND EVALUATION BY END-USERS

The results have been tested in Cyprus, where the SCR was successfully operated and produced high-quality struvite in terms of physical-chemical characteristics and purity, absent from pathogens and carcinogens.

The product also underwent agronomic evaluation and was compared with fertilizers commonly used for growing lettuce, radishes, and *Lepidium sativum* L. in greenhouses, with promising results.

WHAT IS THE TRANSFER POTENTIAL?

Transferability of this outcome relies on improving the innovation capacities of the public and private actors involved in livestock waste management and farming, and we are aiming to strengthen the cooperation between the quadruple helix actors. In parallel to the technological aspects, several actions have been put in place to ensure the project's transferability. Public events (such as open days, technical visits, workshops and round tables) are effective mechanisms to reach stakeholders across the value chain. Simple communication tools such as exhibition panels or informational documents (easy guides for complex issues) have been combined with more elaborate documents such as the policy guidelines, to achieve maximum transferability from laymen to decision makers.

WHAT IS THE PROJECT REPLICABILITY?

The quality of the struvite produced depends on the treatment process. Each pilot case had different feed characteristics, budget, type of reactor, etc., so each partner produced struvite of different quality. However, each solution is solid and replicable. This was proven by the pilot site in Cyprus – the most advanced of the pilot sites – where five experiments have been carried out, with the quality of struvite produced consistently above 70.5% (considerably high based on the starting material). If the model is transferred to other regions as it is, and all parameters remain the same, then the plan will perform the same way.

This project tests different scenarios for struvite production. In all the cases, there was a solution for struvite production and a more sustainable waste management, despite differences in raw material, farm structures, plant managers, etc.

The struvite produced can be used for agriculture, as well as for fertilising private home gardens. The process of struvite production can be applied in small- or large-scale farms as a step towards meeting EU regulations and reducing fines for private use.

WHAT CHALLENGES MAY ARISE?

The biggest challenge that in struvite production is the level of investment. The higher the investment, the greater the quality of struvite will be. It is possible to keep the initial investment cost low and 'polish' the wastewater effluents produced from a farm, but the struvite enriched precipitate (SEP) produced will be most appropriate for domestic use. The important thing is for investors to choose their business model and set the minimum viable product (MVP). When it comes to accessing the data of large-scale applications, a PLC and SCADA system must be installed for automatic operation and remote monitoring respectively, but personnel are still needed for maintenance. There is no one solution for farm-level struvite production, but there are a variety of solutions based on the same principle. The challenge is to understand the value chain (substrate, volume, farm structure, legal support, local grants, etc.) and to adapt the plant to its context.

Learn more about our Community's contributions to
these key challenges in its
White Papers on Circular Economy and its
Policy Recommendations

VISIT THE INTERREG MED GREEN GROWTH WEBSITE

green-growth.interreg-med.eu

Join the Green Growth Capitalisation Platform to connect
with our network, to learn and to contribute to the Green
Growth Community!

interregmedgreengrowth.eu

CONTACT

Mercè Boy Roura, Project Coordinator
merce.boy@uvic.cat



Partners



REVOLVE

