Deliverable 1.4: Innovation management plan

WP	1	Project Management	
Task	1.4	Innovation management. Engagement with Project Advisory Board (PAB) and end users	
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Deliverable abstract

The Innovation Management Plan (D1.4) reports on the outcomes of some activities performed in Task 1.4 "Innovation management. Engagement with Project Advisory Board (PAB) and end users". In particular, the aim of this deliverable is to describe the overall VISCA innovation management process and system in line with the CEN/TS 16555-1 Guidelines.

These guidelines provide information upon the key elements of an Innovation Management System (IMS). Starting from the analysis of these key elements, the current document focuses on VISCA project and presents the core components its IMS.

To conclude, the main goal of the document is to set up an efficient and effective IMS within VISCA project, useful to reach both technical and commercial goals.

[3] Creation, modification, final version for evaluation, revised version following evaluation, final.

List of acronyms and abbreviations

CAPEX	Capital Expenditure
KPI	Key Performance Indicator
IMP	Innovation Management Plan
IMS	Innovation Management System
IMTs	Innovation Management Techniques
IP	Intellectual Property
IPR	Intellectual Property Rights
NPV	Net Present Value
OPEX	Operating Expenditure
PAB	Project Advisory Board
TRL	Technology Readiness Level
TS	Technical Specification
VISCA	Vineyards Integrated Smart Climate Application
WP	Work Package

Applicable and reference documents

REF.	SUBJECT
RD01	VISCA project proposal (Proposal ID 730253-2)
RD02	Innovation Management System - CEN/TS 16555-1
RD03	"Methodology for Innovation Management", WBCInno - Modernization of WBC universities through strengthening of structures and services for knowledge transfer, research and innovation, 2014
RD04	"Innovation management and the knowledge-driven economy", European Commission, Directorate-general for Enterprise, 2004
RD05	"The SME-MPOWER Business Innovation Roadmap methodology: A methodological approach for establishing a participative way a roadmap for business innovation in SMEs", Dr. George Tsekouras, Dr. Christoph Meier, Dr. Arvydas Sutkus, Andreas Wolf, M.A., SmE-MPOWER, 2014
RD06	VISCA - D.1.2 “Risk Management Plan”
RD07	VISCA - D5.2 “Communication and dissemination\ plan”
RD08	Intellectual property rights. Source: https://europa.eu/youreurope/business/start-grow/intellectual-property-rights/index_en.htm
RD09	IP in EU-funded projects, Source: https://ec.europa.eu/easme/sites/easme-site/files/ip_in_h2020_european_ipr_helpdeskmd09112017.pdf

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1. Introduction

1.1 Purpose of the Document

This document (D1.4) reports on the outcomes of some activities performed in Task 1.4 "Innovation Management. Engagement with Project Advisory Board (PAB) and end users", within the frame of the Work Package 1 (WP1) "Project Management" of the VISCA project (RD01).

In particular, this deliverable describes the overall VISCA innovation management process and provides a high-level guidance on establishing and maintaining an innovation management system (IMS) during the whole project. This IMS is to be intended as a set of interrelated or interacting elements of an organization to establish innovation policies and objectives, and processes to achieve those objectives, in line with the CEN/TS 16555-1(RD02).

1.2 Structure of the Document

This document is structured into four chapters:

- **Chapter 1** is this introduction and the description of the document itself;
- **Chapter 2** summarises the methodology adopted to prepare this document, presenting the core parts of the CEN/TS 16555-1;
- **Chapter 3** articulates this Technical Specification within VISCA context, showing how this TS has been used to design an appropriate Innovation Management System (IMS) for the project; and
- **Chapter 4** is devoted to the overall conclusions and lessons learned.

2. Methodology

This chapter intends to deliver an overview of the main approach and tools used to ensure a proper innovation management throughout the entire duration of the project, in line with the "Guidelines for Innovation Management" introduced by the European Committee for Standardization (CEN)/ Technical Specification (TS) 16555-1 (see also RD02).

The aim of CEN/TS 16555-1 (also CEN/TS or Technical Specification hereafter) is to guide organizations to introduce, develop, and maintain a framework for systematic innovation management practices. The Technical Specification consists of seven parts[4], however Part 1 "Innovation Management System" is relevant within the scope of this report.

According to the CEN/TS, the IMS is composed by some key elements that are:

- Understanding the context of the organization (see also section 2.1);
- Establishing the leadership for innovation and strategy (see also section 2.2);
- Planning for innovation success (see also section 2.3);
- Identifying and fostering innovation enablers/driving factors (see also section 2.4);
- Developing an innovation management process (see also section 2.5);
- Evaluating and improving the performance of the IMS (see section 2.6);
- Understanding and using innovation management techniques (see also section 2.7)

In this chapter, the key elements of IMS will be presented reflecting the CEN/TS. While, from chapter 3, they will be customised and reviewed in line with VISCA context and needs, without losing an overall consistency with the Technical Specification.

In fact, considering that CEN/TS is mainly conceived for structured small-medium organisations, some adjustments could be needed to exploit this Specification within VISCA (e.g. in terms of leadership, roles and responsibilities that can differ from those usually foreseen for a company).

Therefore, starting from the general IMS key elements (as reported in the CEN/TS and depicted in the figure below), this report will move to the core components of VISCA innovation management system (see also RD02).

[4] The seven parts are: Innovation Management System, Strategic Intelligence Management, Innovation Thinking, Intellectual Property Management, Collaboration Management, Creativity Management, and Innovation Management Assessment.

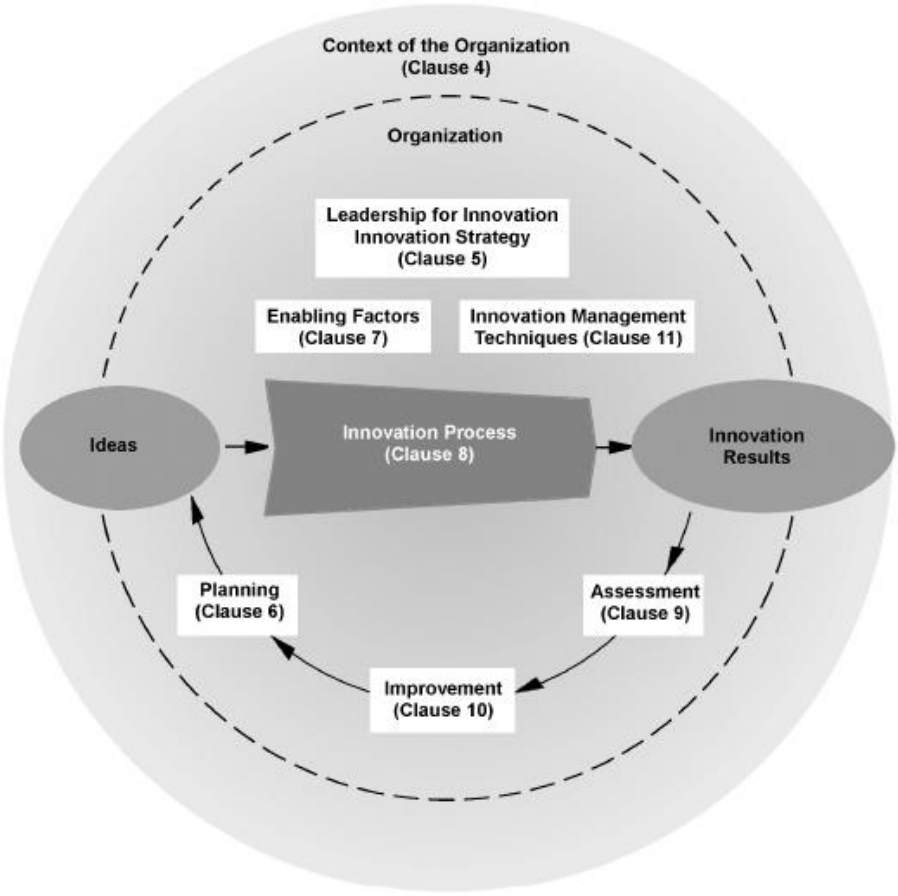

Figure 2-1 Key elements of the Innovation Management System as in TS

2.1 Understanding the context of the organization

According to the Technical Specification, first of all **a clear understanding of the organisation and its context** should be reached. It means that the **key internal and external issues** relevant for the IMS and the related potential boundaries (within which the IMS will operate) should be determined. In particular:

- The internal analysis considers the existing practices to manage innovation (if any), the main cultural aspects (such as the attitude towards innovation) and the capability aspects (related to the innovation) within the organisation; while
- The external issues are mainly market, technical, political, economic or social aspects that represent some of the main topics that should be regularly taken into consideration in the analysis.

Second, the **interested parties** should be clearly defined and, consequently, involved and consulted in order to identify their **needs and expectations**. As for the analysis of the context, a distinction **between internal and external stakeholders** could be done. For example (see also paragraph 3.1, page 18, for a detailed list of these 2 types of stakeholders within VISCA project):

- Internal stakeholders are the main organisation members, especially those involved in the IMS; while
- External stakeholders can be considered suppliers, distributors, some customers or public authorities.

2.2 Establishing the leadership for innovation and strategy

An **innovation vision** is essential to reach the innovation goals. The vision, which is a statement about what an organisation wants to achieve in terms of innovation, should:

- Set a direction and challenge that can inspire persons to coming and work towards the innovation goals;
- Be sufficiently ambitious and not constrained by the organisation's current capabilities; and
- Provide a target against which progress can be measured.

Based on this innovation vision, an **innovation strategy** will be defined outlining the actions that will be taken in order to reach the identified innovation goals successfully, taking into account the results of the analysis of the external and internal issues and the identified needs together with the expectations of the interested parties. In detail, the strategy will define the:

- Organisation's innovation capacity and resources;
- Innovation means;
- Overall innovation focus;
- Level of novelty of the innovation;
- Relevant policies (such as on human resources enabling innovation; on intangible assets and intellectual property; on collaboration, including sourcing ideas from outside the organisation and collaboration with third parties).

The innovation strategy will guide decisions on how resources are to be used to meet the project's innovation objectives, deliver value (e.g. through a dedicated business model) and build competitive advantage.

To reach the achievement of the innovation vision and the realisation of the related strategy, first of all **a strong commitment of leadership** is needed. Second, an **innovation culture should** be

fostered. Third, the top management should ensure that the **responsibilities for relevant roles** within the IMS are assigned and communicated within the organisation.

2.3 Planning for innovation success

When planning for the IMS, the Technical Specification foresees two sections, i.e**. risks and opportunities** and **operational planning**.

To determine risks and opportunities that need to be addressed, it is key to take into account external and internal issues referred to the needs and expectations, the innovation vision and strategy. In doing so, it is important to:

- Make sure that IMS can achieve its intended outcomes;
- Prevent or reduce undesired effects;
- Achieve continual improvement.

The organisation should plan actions to address these risks and opportunities and plot the integration and implementation of these actions into its IMS processes and evaluate the effectiveness of these actions.

Moving to the operational planning, innovation objectives should be established, consistent with the innovation vision and strategy, communicated, monitored and updated.

When planning how to achieve its innovation objectives, the organisation should determine the activities, resources and milestones for the innovation enablers/driving factors (see also 2.4) and the innovation management process (see also 2.5). Also, it should establish the indicators to monitor the short and the long-term success of the IMS.

2.4 Identifying and fostering innovation enablers/driving factors

The main innovation enabling factors will be described starting from the **assignments of roles and responsibilities** for general innovation management as well as specific innovation task, taking into account the necessary **resources** to run the IMS and **competences** needed. Moreover, other key enablers are considered in the Technical Specification, such as **awareness**, **communication**, **documented information**, **strategic human resources**, **IP and knowledge management**, and **collaboration** (internal and external).

All these driving factors are briefly explained here below:

- Roles and responsibilities. They should be clearly and effectively assigned, subcontracting them to external experts for specific tasks where a gap in internal expertise is identified;
- Resources. They are needed for the establishment, implementation, maintenance and continual improvement of the IMS (e.g. human resources, equipment, facilities and budgets);
- Competences. The resources working with innovation activities and the development of them should have the proper competences. In this context, it is also relevant to ensure an improvement of the skills and capabilities, of the involved resources, that are essential to enhance the innovation performance;
- Awareness. The importance of innovation should be understood by the resources working with innovation activities, by having clear the innovation vision and strategy together with the importance of their contribution to make the IMS more effective. A strong innovation culture (see also paragraph 2.2) could support this;
- Communication. Internal and external communication relevant to the IMS should be established taking into consideration aspects such as what to communicate, when, to- and by whom, together with the provision of communication channels and the intended feedback;
- Collaboration. A defined policy for internal and external collaboration should be elaborated, so that ideas and knowledge can be shared across different persons, groups and units that will be encouraged to collaborate, develop ideas and share knowledge. Here, the involvement of various external actors, called to provide advice upon market-related and regulatory topics, can be useful as well;
- Documented information. It should be included in the IMS as it is necessary for the effectiveness of the IMS and represents the evidence of its performance, as derived from the application of the Technical Specification;
- Strategic human resources. The IMS should incorporate a strategic approach to human resources that should among others: (i) foster creativity, learning and dissemination of knowledge; (ii) encourage open interactions, trust, diversity and tolerance; (iii) allow persons access to relevant information from management; and
- Intellectual property (IP) and knowledge management. On this matter a policy should be outlined in order to regulate the produced innovation.

2.5 *Developing an innovation management process*

An innovation management process should be set in place. The main phases are reported in the figure below (see also RD02). It has to be stressed that the innovation process highly depends on aspects such as the type of innovation, the kind of organisation or the internal structure. In the context of innovation projects, for example, some variations could be foreseen (see also RD05).

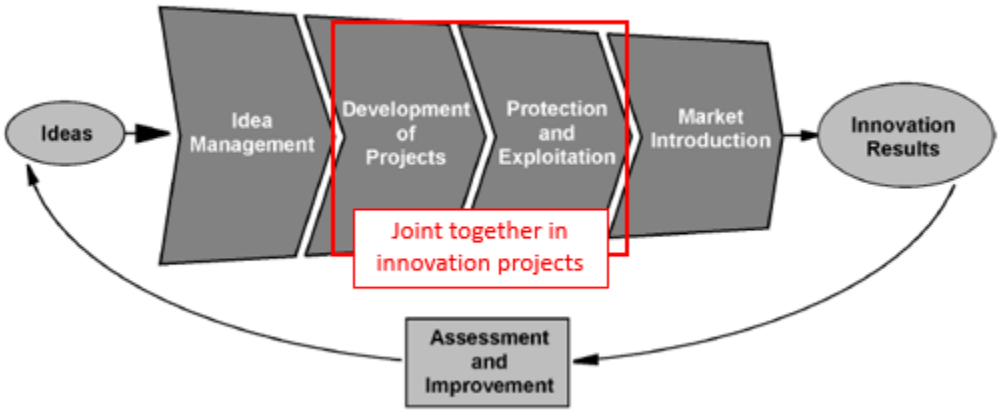

Figure 2-2 Schematic representation of the innovation management process (innovation funnel)

The different phases of the process are strongly interlinked, as it clearly emerges from the brief description reported here below:

- Phase 1 – **Idea Management** includes the generation, capturing, evaluation and selection of the new ideas;
- Phase 2 – **Development of the innovation project** following a dedicated methodology**.** It is where the implementation of the idea takes place;
- Phase 3 – **Market introduction**, assumes that end-users and lead customers are actively involved, since phase 2. Hence, a first reference of an innovative solution (pilot or demonstration) substantially increases the chances for finding additional clients. Therefore, new enabling factors, such as business models, dedicated competences, processes, partners, financing etc. will be required;
- Phase 4 – **Innovation results**, foresees the assessment of the results of the innovation process. These results are measured using financial and non-financial indicators (e.g. revenues, market share, efficiency of process, intangible assets). Assessing the results against these indicators should provide feedback from success and failure and learning for the further improvement of the innovation management process.

2.6 *Evaluating and improving the performance of the IMS*

To ensure the suitability, adequacy and effectiveness of the IMS, a dedicated **evaluation of the performance** should be undertaken, determining specific indicators, methods for monitoring and/ or criteria for evaluating. These criteria should be determined, for example, for the innovation strategy, the deployment of innovation enabling/driving factors and the innovation process and its results.

The outputs of this evaluation should include decisions related to the **continuous improvement** of the IMS. To do so, deviations should be identified and eliminated, leveraging the identified corrective actions in order to improve the efficiency and the results of the IMS.

In addition, a roadmap with measures could be defined to eliminate the identified weaknesses as well to enhance the strengths of the IMS. The implementation of improvement measures should be monitored concerning the time-line, completeness of defined tasks and impact expected on the IMS.

Also, to stimulate the learning and continuous improvement within the organisation, the improvement measures and successes should be communicated to appropriate external interested parties, as stated in the Technical Specification.

2.7 *Innovation management techniques*

The Innovation Management Techniques (IMTs) involve a variety of aspects, useful for a correct development of innovation management and for increasing the business impact of the innovation activities. The Technical Specification provides a set of examples of the IMTs, however as highlighted in the Guidelines, they do not represent an exhaustive list. They are:

- **Strategic Intelligence Management (SIM)**. Strategic intelligence (SI) supports the management of innovation by providing decision support and knowledge for the preparation of strategic decisions in terms of organisation, anticipation, positioning, influence and/or know-how, freedom to use and protection of assets;
- **Innovation thinking (IT)** is an iterative, repeatable approach to explore problems and opportunities in order to identify significantly better solutions and anticipate future needs. It creates an innovative approach that involves every person in the organisation;
- **Intellectual Property Management (IPM)**. IP or IPR awareness is essential for all types of organisation in order to manage, protect and exploit intangibles, obtain freedom to operate and defend against counterfeiting and infringement;
- **Collaborative management (CM)** can improve the innovative performance of an organisation. It allows the acquisition of new skills and resources, bringing different

groups together, improving opportunities for successful creativity and innovation, solving problems exploiting external potential; and

- **Creative Management (CRM)** demonstrates that creativity can be successfully managed by following a set of principles that stimulate the generation of new ideas.

Together with the above-mentioned innovation management techniques, also other methodologies can be useful to manage innovation (see also RD04). Some examples relevant in this context are:

- **Knowledge management (KM)** is the process of creating, sharing, using and managing the knowledge and information of an organisation. It refers to a multidisciplinary approach to achieve organisational objectives by making the best use of knowledge. KM efforts typically focus on organisational objectives such as improved performance, competitive advantage, innovation, the sharing of lessons learned, integration and continuous improvement of the organisation;
- **Innovation project management (IPM)** a systematic approach to support the creative capabilities of employees and creating a workplace environment that encourages new ideas for workflows, methodologies, services or products;
- **Cooperative and networking (C&N)** methodologies benefit organisations in many ways, by increasing creativity, improving communication, stimulating a corporate spirit and saving time and costs in coordinating group efforts;
- **Market intelligence (MI)** is the information relevant to a company's markets, gathered and analysed specifically for the purpose of accurate and confident decision-making in determining strategy in areas such as market opportunity, market penetration strategy, and market development; and
- **Business creation (BC)** supports companies to restructure their current business or create new ones, by using several tools such as virtual incubators, spin-off, entrepreneurship and business plan.

These IMTs and methodologies can be used, finding the adequate mix necessary to reach the objectives of the Innovation Management System.

3. VISCA's Innovation Management System

In this chapter all the activities that are needed to generate innovation on a continuous basis (and foreseen by the Innovation Management System) has been described specifically in their application to the VISCA project. The chapter reflects the general description provided in chapter 2, in line with the Technical Specification, presenting the:

- Context of VISCA (see section 3.1);
- Innovation vision and strategy of the project (see section 3.2);
- Planning for innovation success (see section 3.3);
- Innovation enablers/driving factors (see section 3.4);
- Innovation management (see section 3.5);
- Assessment of the IMS performance and improvement (see section 3.6); and
- Innovation management techniques (see also section 3.7).

However, as mentioned before, all paragraphs will be customised according to the VISCA context and needs, using the Technical Specification as main guideline for the innovation management within VISCA, but without losing the project characteristics.

3.1 Understanding the context of the organization

Vineyards Integrated Smart Climate Application (VISCA) is a Horizon 2020 3-year project (2017-2020, see also RD01). In particular, VISCA is under the category "Innovation Action", therefore with a strong focus on this aspect.

Actually, the main aim of VISCA is making European wine industries resilient to climate changes, minimizing costs and risks through an improvement of the production management (quality and quantity of final product), while evaluating its replicability to other high-added value agriculture sectors. Both VISCA nature and objective are two main drivers to understand the context, i.e. **the main internal and external issues and stakeholders** (see also paragraph 2.1), potentially impacting on the project success.

Starting from the internal issues as defined by the Technical Specification, a task dedicated to the innovation management is foreseen in the more general VISCA Work Plan. In particular, within the context of Work Package (WP) 1 "Management", the Task 1.4 "Innovation Management. Engagement with Project Advisory Board (PAB) and end-users" will deal with the management of the innovation process. More in detail, this Task has two main goals:

- It aims at keeping the PAB and project members updated about project's evolution in order to get constant feedbacks, ideas and point of views useful to drive the evolution of the project; and
- Second, it will respond to internal and external opportunities to successfully implement the innovative solutions proposed by VISCA.

To reach these goals, a strong internal attitude and commitment towards innovation of project partners, coupled with the presence of all capabilities and necessary operational aspects, have been assured since the proposal preparation (see also RD01).

All in all, among the outputs of Task 1.4, this "Innovation Management Plan" represents the core repository of the main existing innovation management practices and standards, adopted since the beginning of the project and fine-tuned up to the project end.

Moving to the external issues, the main challenges for the success of the proposed innovation are mainly related to the:

- Market, economic/ commercial or political aspects, such as:
  - Adaptation strategies resulting from the policy framework at local, national or international level cannot be implemented, and
  - The characteristics of the addressed market (esp. wine industry) can affect the innovation adoption, considering that it is fragmented (in particular in Europe), with a conservative attitude towards innovation and a high price elasticity[5].
- Technical aspects, such as:
  - Water needs given by the tool according to irrigation models should be compatible with green economy/sustainable growth principles;
  - Potential lack of simplicity and usability of the tool to be adopted by large industry and small producer;
  - The decision-making process offered by the tool should prove to be effective, optimize productivity or minimize risks;
  - There are not available phenological models for all crops, therefore not useful to all markets;
  - The climatic change introduces noises on the already developed phenological crop models, which made difficult to use them on the final assessing tool; and
  - Low skill of seasonal models, which results in "weak" forecast information about the vineyard cycle dates and therefore adaptation strategies applied may not work properly.

All these challenges are regularly taken into consideration during the whole project duration, through dedicated tasks foreseen within the management, technical and exploitation activities,

[5] This means that for small price variations, relevant changes in product and service's volumes can be foreseen.

as foreseen in the VISCA Work Plan (see also RD01). As both the internal and external issues show, the context on which VISCA operates is characterised by a multitude of relevant actors.

First of all, the internal stakeholders are mainly project members. VISCA brings together a multidisciplinary team of 11 European partners[6] including meteorological and environmental services companies, research institutions and universities, wine producers and distributors, and consulting firms. In addition to them, the Project Advisory Board (PAB) includes additional experts representing organizations from the wine, olive oil and agricultural sector, which will ensure replicability of the tool to other sectors (see also 3.4.1). The list of the project partners and PAB members (together with a brief description) is provided in Annex 5.1, while here it is important to highlight the common attitude and commitment towards innovation that they have. In fact, process and product innovation is the basis of the core business and the main driver for the majority of them, as their profiles in RD01 confirm.

At the same time, the external stakeholders are relevant as well in the VISCA context. They can be categorised as presented in the table below.

Category	Stakeholder
Agriculture Industry	Farmers and farming associations (mainly wine-gapes growers, but also other crops like olives and rice)
	Agriculture public entities (e.g. agriculture chambers)
Wine industry	Wine producers and wine distributors
	Upstream operators and retailers
Policy makers	Policy makers and national authorities at the international, EU and member state level (e.g. ministries of agriculture/environment /water/ industry, etc.).
Economic stakeholders	Potential International, European and National funding programmes related to climate services and agriculture. (e.g. PRIMA)
Scientific community	European Commission projects which are climate-, agriculture, water-, innovation-, and technology-related (e.g. Other H2020, LIFE projects, etc.).
	Technological centres and scientific universities and platform
	Think-tanks and action groups (EIP-agri)
Medias and channels	Media (Press, scientific journals, networks, conferences, online media)
Civil Society	Environmental organizations and NGOs.
	Society as a whole

Table 3-1 List of external stakeholders

[6] Meteosim (Project Coordinator), Barcelona Supercomputing Center, Codorniu, Institut De Recerca I Tecnologia Agroalimentaries, Istituto Superiore Mario Boella, Universita degli Studi di Napoli Federico II, Mastroberardino Spa, Symington - Vinhos, Universidade Do Porto, Unite Technique Du Semide Geie e Alpha Consult.

All these stakeholders are fundamental and will be regularly involved during the overall project duration, collecting their needs and requirements, as explained also thorough VISCA vision and strategy.

3.2 Establishing the leadership for innovation and strategy

In the frame of the **innovation vision and strategy** foreseen by the CEN/TS Guidelines (see also section 2.2), the ones related to the project are presented hereafter.

With a view to making South European wine industry resilient to climate change, VISCA intends to deploy an innovative climate service tool that will provide wine producers with well-founded information to be able to apply correctly adaptation strategies on specific grape varieties and locations, to achieve optimum production results (VISCA vision).

To achieve such an ambitious vision, a strategy has been set in place. Thanks to the innovation capacity and resources of its partners (see also RD01), the Consortium will be able to integrate climatic data, phenological and irrigation models, and end-users' requirements into a Climate Service (CS) and Decision Support System (DSS). The CS and DSS will be co-designed with relevant South-European wine companies from Spain, Italy and Portugal, in order to provide with well-founded decisions of specific aspects of crop, make warning against extreme events in short term, and produce a historical and future projection on the effects of climate change over phenological events. In this sense, VISCA could represent a disruptive innovation for the wine industry. Moreover, VISCA can globally impact also other types of cultivations, geographies and sectors affected by climate change, therefore it can be easily scalable up and or replicable in other contexts.

In line with this vision and strategy, the main purpose of innovation management is to ensure that the project research activities, technological developments and achievements are kept well connected to outside technology developments. An additional goal of innovation management is to maintain low risk level for the project and to prevent the project results from losing relevance given the evolving trends in the market.

All in all, we have already discussed the **strong commitment of project partners** and their **innovation culture**. At the same time, **responsibilities for relevant roles** within the IMS have been assigned and communicated since the proposal preparation (see also 3.4.1).

3.3 Planning for innovation success

In order to achieve the overall innovation vision, the Consortium has to consider **risks and opportunities** and prepare an **overall operational planning**, with dedicated **objectives**.

In section 2.1, we have already presented some aspects that could potentially affect the overall IMS of VISCA. To complete this overview, looking at main risks, they can be categorised as follows:

- Research-related risks, including all the main technical criticalities that could occur;
- Management-related risks, mainly focused on the non-achievement of the project's objectives or benefits within the specified time frame; and
- Dissemination and exploitation of results-related risks, outlining the non-achievement of the promotion (i.e. dissemination and communication) and financial benefits.

In particular, D.1.2 “Risk Management Plan” (see also RD06) detailed these risk categories, identifying also for each risk: the level of likelihood, the impact, the risk exposure, the mitigation actions and the contingency plan (previously approved by the project Executive Committee, see also 3.4.1 for details on VISCA management structure). The Project Coordinator has also deployed a collaborative website (INTRANET), in order to facilitate the coordination between partners and the sharing of the relevant information about risk management. The risks are written down in the intranet, and a responsible person/people assigned, accordingly. It is the responsibility of all VISCA partners to communicate to the Project Manager about the status and effectiveness of each risk and mitigation plan in order to update the risk management table. Risk exposure will be continuously re-evaluated and modified during the overall project duration.

On the other hand, when we speak about opportunities, VISCA has a worldwide potential. The climate and phenological data integrated in VISCA will be applicable for a wide range of agricultural applications that seek reliable precipitation and weather forecasts for phenological and yield monitoring. Starting from South-European wine industries, VISCA can be extended to other agricultural crops and regions. In fact, VISCA’s Advisory Board has representatives from other segments affected by climate change (e.g. Olive oil). Also, VISCA will produce single datasets and services that could have a potential for becoming innovative products also outside agriculture domain (e.g. in emergency management, insurance sector…). All these opportunities will be further analysed, when relevant, within WP5 (see also RD01).

Moving to the overall VISCA operational planning, a detailed GANTT (with activities, timing, milestones, outputs…) has been presented in RD01. Here below, just an overview on the WP structure is reported.

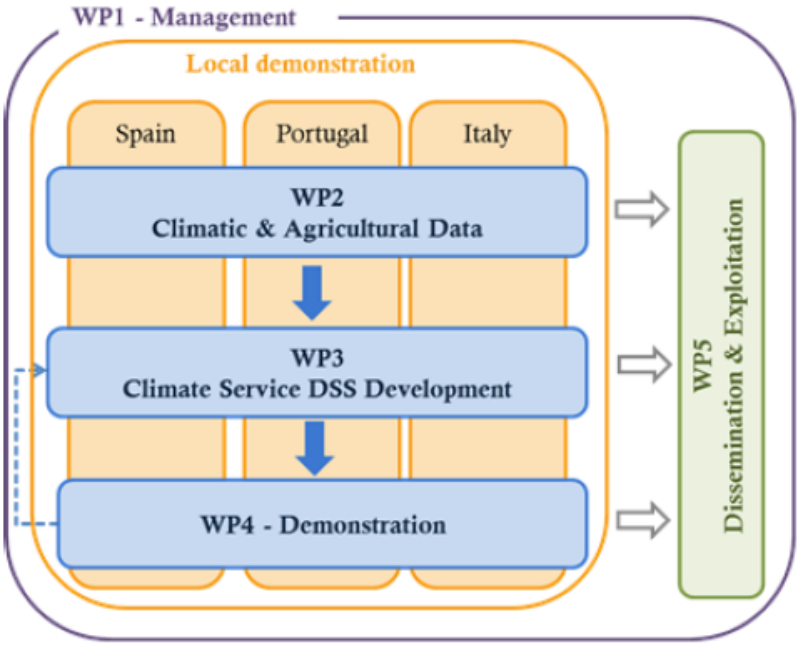

Figure 3-1 VISCA WP Structure

The VISCA WP structure has been designed to implement the project specific and verifiable innovation objectives. They mainly are the:

- Development of an innovative tool that supplies climate-informed decisions to the wine industry (with demos of the strategic adaptation decisions supplied by this tool in Spain, Italy and Portugal areas where wine business is most sensitive to climate change);
- Definition of an action plan to tackle barriers and opportunities derived from the full deployment of VISCA on the 3 demo areas; and
- Evaluation of the replicability potential of the proposed innovation in other relevant sectors (forestry, food security, etc.) at the international level.

3.4 Identifying and fostering innovation enablers/driving factors

This section presents the main innovation enabling factors for VISCA, starting from the assignments of roles and responsibilities and up to the overall collaboration, following the main guidelines provided by the Technical Specification (see also section 2.4). Therefore, the paragraph has been articulated as follows[7]:

- Organisation of roles and responsibilities (paragraph 3.4.1);
- Resources and competences (paragraph 3.4.2);

[7] The "strategic human resources" approach does not apply to VISCA project, considering the mix of different entities that compose the Consortium.

- Communication, awareness and collaboration (strictly linked in VISCA project therefore treated together in paragraph 3.4.3);
- Documented information (paragraph 3.4.4); and
- Intellectual Property (IP) and Knowledge Management (paragraph 3.4.5).

3.4.1 Organisation of roles and responsibilities

The following figure shows the VISCA main **roles and responsibilities** among the Consortium members.

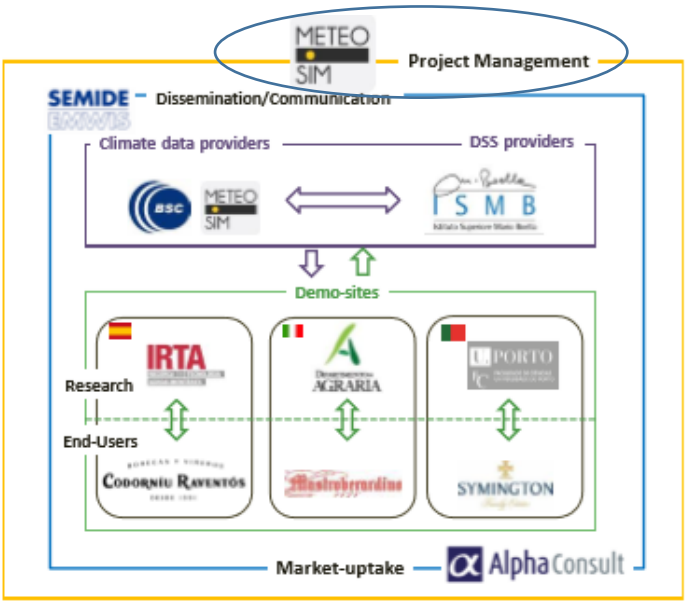

Figure 3-2 VISCA Consortium structure and inter-relations

As explained before, within the more general WP1 "Project Manager" (led by METEOSIM as Project Coordinator), a dedicated task (Task 1.4) is devoted to the innovation management and engagement with PAB and end users.

In terms of roles, Alpha Consult leads this Task. In particular, Emiliano Spaltro (ALPHA Managing Partner) is the VISCA Innovation Manager, supported by the overall ALPHA team.

In this context, the Innovation Manager will have the responsibility of governing the innovation management process that will be implemented by adopting a hybrid research and innovation methodology. He will iteratively consider the evolution of products and market demands in the addressed sector, the business strategies of the large, small and medium enterprises present in the Consortium, and the results achieved in order to adjust project objectives and requirements, specifying the innovations on which VISCA should focus more and identifying exploitation potentials. In this context, also the exploitation issues will be handled by the Innovation Manager.

The Innovation Manager is part of the VISCA Executive Committee, as the figure below shows.

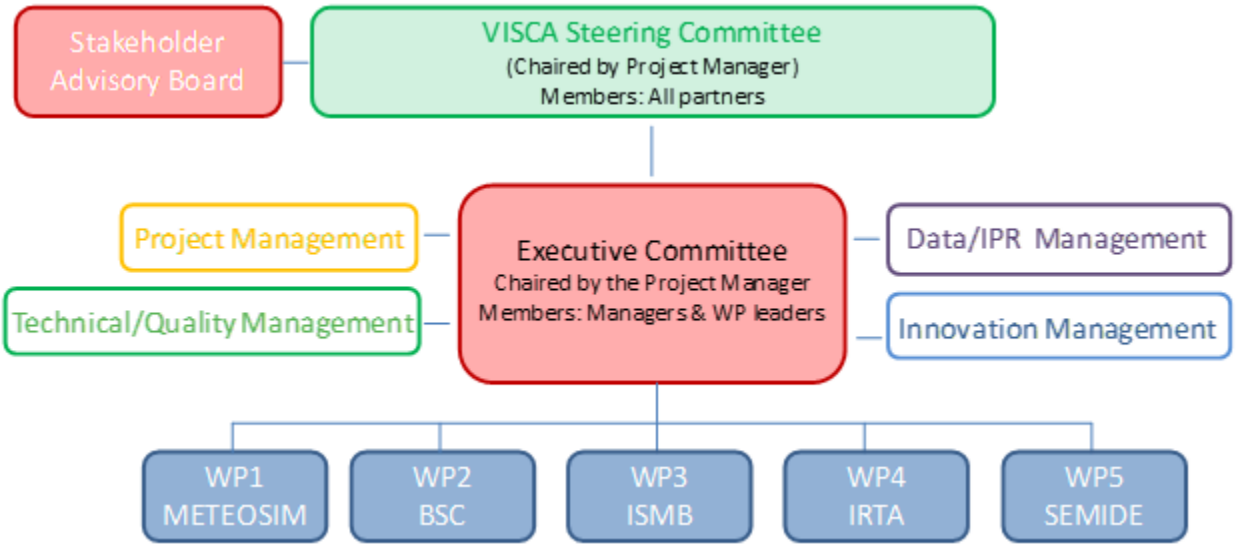

Figure 3-3 VISCA Management Structure

The Executive Committee is chaired by the Project Manager and composed also by the WP leaders, the Technical/Quality Manager and Data/IPR Manager. This team has to ensure that the project follows the expected planning, timing and budget at all levels. This Committee will meet on a 6-months basis, and whenever it is considered necessary due to extraordinary situations that might take place during the course of the project.

To effectively undertake its role and responsibility, the Innovation Manager will work in contact with and need the strong commitment of the three involved end-users (Codorniu, Mastroberardino and Symington). At the same time, he will also deal with the management of the PAB that includes experts representing organizations from the wine, olive oil and agricultural sector, which will ensure replicability of the tool to other sectors (mainly Mediterranean, high-added value agricultural products), and therefore its potential commercialisation to the mentioned sectors beyond the life time of the project.

3.4.2 Resources and competences

As widely explained, all VISCA partners provide the necessary range of **resources, expertise, competence and operational capacity** to deliver the innovative project objectives.

In this sense, a detailed description of each partner, its key persons (including those involved in the innovation management), resources (e.g. human resources, equipment, facilities and budgets) and competences (e.g. publications, relevant products, projects or activities) is provided in RD01. According to this description, it is evident that they will ensure the overall VISCA innovation performance. In fact, the equilibrium between industrial and research partners,

together with the demonstrated expertise of them, will guarantee that the project will innovate and fully deliver the promised services and products, achieving all objectives with high impact. Further, the high number of industrial partners assures a real orientation towards the business exploitation of the project results.

In addition to that, to guarantee the success of the proposed innovation, VISCA´s partner structure has been designed to work on three demonstration sites located in the South of Europe (Spain, Italy and Portugal). Each of the core demo sites will be composed of:

- 1 End-User (wine company), acting as end user and co-designer of the tool; and
- 1 Research entity (research centre, university or SME), working together with the wine company in order to supply phenological and irrigation models based on the climatic data. Every Research entity belongs to the same country than the end-user, and it is geographically close enough as to being able to work in close cooperation in a daily basis.

In this sense, the clusters composed for each demo-site will include all the needed resources and competences and will provide a positive synergy among all the Consortium partners, creating an ecosystem for innovation in agrifood.

3.4.3 Communication, awareness and collaboration

Within VISCA, communication, awareness and collaboration represent key elements for the overall project success. It is important to highlight that, in this context, these concepts are intrinsically connected and tend to overlap. For this reason, they are discussed together.

Communication, awareness and collaboration actions have been foreseen on two levels: **internal and external**. These actions aim to maximise the knowledge-sharing and present the results of the innovation process within and beyond the Consortium.

Starting from the internal level, VISCA possesses a well-defined structure specially created to maintain a fluid and thorough communication among the partners, with a view to obtain the most efficient collaboration and increase the synergy for the sake of the quality of results. The main channel of the communication structure is the Project Coordinator, who receives or prepares the information of different nature (reports, minutes, publications, patents and licensing processes, etc.) and is responsible of conveying this information to the rest of partners. To do that, the Coordinator uses different means, such as:

- A collaborative Intranet website, to facilitate the coordination between partners and the sharing of relevant information. The collaborative tools include services as: shared documents, shared calendar, news publication, tasks and issues tracking, risk management, Wiki pages for sharing knowledge, discussion forums, follow up commercial opportunities, etc.

- Regularly e-meetings/ conference calls to keep the partners updated on the ongoing status of the WPs in order to monitor and share the progress and the quality of major project outputs. They are plenary e-meetings involving all the Consortium partners or dedicated conference calls devoted to specific WPs;
- Focus groups (organised together with the Innovation Manager) and regular e-meetings, involving the end-users and the PAB members to regularly collect their feedback and update them on project achievements;
- Annual PAB workshops that take place in parallel with the annual general meetings (every year these are celebrated in a different end-user premises, e.g. Codorniu, Mastroberardino, Symington), which allow aligning the developed work with stakeholders' interests and feedbacks.

Moving to the external level, VISCA will "promote the innovation action and its results" through two distinct but complementary approaches:

- Communication and Dissemination strategy and actions which are detailed in the 'Communication and dissemination plan-D.5.2 (see RD07). The plan gives an overview on the dissemination activities to be carried out by VISCA consortium to disclose and give public access to the progress and results of the project. It defines the dissemination objectives, key messages, target audiences, as well as specific objectives for each identified target group. In addition, D5.2 identifies the targeted communication channels to be used, promotional materials as well as the training workshops with details on the financial & human resources and timing. VISCA has a special focus on end-user's engagement and stakeholder's involvement during all project phases; and
- Exploitation, given the high Technology Readiness Level (TRL) level to be achieved and the strong innovation potential of the VISCA solution, coupled with a predominant presence of innovative SMEs within the consortium, a preliminary business plan together with a business model and a market assessment are included as exploitation strategies.

All these actions are carried out in the frame of WP5 "Exploitation, Dissemination and Communication" led by SEMIDE, with the support of all partners (see also RD01). This WP has a list of clear objectives:

- Increase global visibility of VISCA project and its outcomes in Europe and beyond;
- Raise the awareness of the target groups and potential users about VISCA; understand what it can deliver and how it relates to their needs;
- Place VISCA tool among the top of the EU climate-related innovations;
- Exchange the information and results on national and regional activities and agendas to contribute in developing related initiatives and projects;
- Enhance European and global market uptake of VISCA tool.

Within WP5, different channels/ tools/ materials are used to realize these objectives (see RD07). They mainly reflect the nature of the actions presented above:

- Dissemination channels, especially VISCA official website and social media, participation to dedicated events, the creation of promotional material, organisation of workshops at demonstration sites targeting vineyards companies, irrigation communities, advisory board members, policy makers, legislations bodies, etc. and articles in online and printed magazines;
- Exploitation tools, such as the VISCA business plan and roadmap and the analysis of the replicability and EU funding mechanisms for further deployment; and
- Communication materials, e.g. brochures, posters and rollups, press releases, newsletters and two videos.

This overall structure will allow to reach key audience with the main massages relevant to promote the innovation action and its result and to foster a continuous internal and external collaboration.

3.4.4 Documented information

In order to prove evidence of performance and the effectiveness of the actions foreseen from the VISCA Consortium, all the outcomes of the meetings, work-shops and conference calls have been made traceable thanks to the dedicated Minutes of Meeting (MoM), providing a brief summary with the main outcomes and expected next steps. Actions derived from the minutes are registered in the INTRANET as tasks, where deadlines and responsible people are assigned, in order to improve traceability and keep all partners informed (on a real-time basis) about the course of the project.

Furthermore, thanks to VISCA's collaborative communication tool (see also 3.4.3), all the documents and WP related information have been uploaded, shared, stored and protected, granting access to the involved Consortium partners.

All in all, this Innovation Management Plan provides a high-level guidance on establishing and maintaining an innovation management system (IMS) during the whole project.

3.4.5 Intellectual property (IP) and knowledge management

VISCA results foresee a generation of new products and knowledge (e.g. datasets, services and software). Hence, specific measures have been applied by the partners to ensure the effective management of Intellectual Property Rights (IPR) and the innovations that will result.

For this reason, since the early stages of the proposal (RD01), **knowledge management and IPR** have been addressed.

First of all, VISCA relies upon open standards for representing and processing multilingual and semantic data to assure interoperability, sustainability and broad uptake across industries and countries. Moreover, a standardised approach based on open and linked data standards is used for data curation and storage. Where possible the data will be made accessible for its re-use, as described in VISCA Data Management Plan (D1.3). However, some data sets were (and will be) not published due to its confidentiality and IPR protection by those businesses that consider their data as a branding asset.

For this reason, the Consortium Agreement has been prepared and signed by all partners. It defines the framework for cooperation among the parties within the VISCA project, in particular: ownership of results and intellectual properties; access rights; rights and roles for exploitation; non-disclosure and confidentiality of information and software. In this context, the latest version of the DESCA Horizon 2020 template Consortium Agreement has been adapted to meet the needs of VISCA consortium.

In this articulated context, SEMIDE (Eric Mino – Director of SEMIDE supported by overall SEMIDE team) has been entitled to supervise this activity as Data and IPR Manager (see also paragraph 3.4.1) by proceeding with the:

- Existing IP assessment, by guiding participants in assessing existing IP in the field that is likely to affect their research in order to determine their freedom to operate. In the context of this IMP, a preliminary assessment of partners background[8] and foreground[9] knowledge/IP has been undertaken to update the IPR declarations included in the Consortium Agreement. According to this assessment, the overall "freedom to operate" of VISCA solution can be assured at this stage of the project, with no major issues emerged. Actually, when background knowledge/IP is present (models and software platform), specific terms of access and conditions of exploitation will be prepared between the Consortium and the single partner. Results of this assessment will be reviewed and further detailed at a more mature stage of the project;
- IP identification, by defining VISCA's results that might have a potential commercial value. Here, any IP that can be protected or/and explored have to be identified;
- IP protection, by obtaining IP protection of the defined potential IP results and assisting partners in fulfilling obligations and responsibilities including participation in subsequent commercialisation process;

[8] Knowledge/IP that is relevant to a collaborative venture or open innovation project that is supplied by the partners at the start of the project.

[9] Knowledge/IP produced within the collaborative venture or open innovation project during the project's tenure.

- File for IPR protection, such decisions will be made with respect to the legitimate interests of the partner(s) owning the corresponding IPR and the legitimate interests, particularly the commercial interests, of other partners; and
- Application for IPR protection, i.e. the best IPR protection preparation and filing strategy (supported by an analysis of advantages/ disadvantages of proposed protection means) will be defined and the respective documents will be prepared. Advices regarding how to prepare a robust set of claims and how to maximize the value of the IPR protection sought will be given.

Data and IPR Manager will be supported by the Innovation Manager (see also paragraph 3.4.1) who both have experience in such matters, and who will, furthermore, have access to internal and external specialists in patent and legal affairs. In addition, most other partners have their own legal departments and specialists.

3.5 Developing and innovation management process

VISCA innovation management process has been set in place in accordance with the innovation vision and strategy (depicted in paragraph 3.2) built in line with the guidelines foreseen by the Technical Specification (see also paragraph 2.5). This process represents the main phases of VISCA starting from the **idea management, moving to the development of the project, followed by the protection, exploitation and market introduction and finally the innovation results**.

Starting from Phase 1 – Idea management, this phase was carried out and completed at the very beginning of the proposal stage (see also RD01), where the development of VISCA's idea and potential was articulated and presented. On the other hand, the idea fine-tuning and realisation are the core parts of the current 3 years project.

Moving to Phase 2 – Development of innovation project, this phase followed a dedicated methodology depicted in the overall work plan (see also section 3.3). Here, all the measures and actions foreseen for the implementation of VISCA took place. Moreover, during this phase end-users and other actors (PAB members) that could deliver high-value advice are actively involved in order to tailor the solution according to their needs and requirements. This has allowed the Consortium to achieve the programmed results.

Then, Phase 3 and 4 (strictly linked in H2020) – Protection, Exploitation and Market introduction will foresee different steps. First of all, VISCA will be tested in the three-identified demo-sites to validate the outcome of the development accomplished in the previous phase. As previously explained (see also paragraph 3.4.2) the end-users (respectively Codorniu in Spain, Mastroberardino in Italy and Symington in Portugal) will be key actors for the demos. At the same time, having three end-users as Consortium partners will allow the creation of an appropriate

business model in order to ease the market introduction of VISCA, by having them as a starting point. Second, the overall WP5 is devoted to a promotion, protection and commercialisation strategy (see also RD01). All in all, The PAB will provide the consortium with advice on market opportunities and barriers, directives and regulations, standardization, and on international investment programmes related with agriculture adaptation strategies. All these inputs will allow effective strategies, able to foster VISCA adoption and its replicability within other agricultural sectors.

Finally Phase 5 – Innovation results, foresees the assessment of the results of the overall innovation, i.e. of VISCA. To do that, a business plan[10] (over 5 to 10 years period) will be designed to obtain a long-term cash-flow prediction and define a concrete exploitation strategy. More in detail, it will provide financial and non-financial indicators (e.g. revenues, CAPEX, OPEX, NPV, market share, intangible assets, …) to assess the innovation results. The assessment of the results against these indicators will provide feedback for success together with lessons learnt for further improvement, after the project-end.

3.6 Evaluating and improving the performance of the IMS

Following the Technical Specification (see also paragraph 2.6), some Key Performance Indicators[11] (KPIs) have been identified in order to monitor, evaluate and improve the innovation performance. Also, as suggested by the Technical Specification, the identified performance indicators have been linked to the innovation strategy, the deployment of innovation enabling/driving factors and the innovation process (in particular its results, considering that other phases have been already covered by KPIs identified for the other IMS key elements).

The table below summarises the main KPIs to evaluate the VISCA IMS.

IMS key elements	Goal	KPIs
Innovation strategy (paragraph 3.2)	Integrate climatic data, phenological and irrigation models, and end-users' requirements into a Climate Service (CS) and Decision Support System (DSS)	Deliver the final release of CS and DSS for M36
	Co-design the system with relevant South-European wine companies from Spain, Italy and Portugal	Organise three demo sites in Spain, Italy and Portugal

[10] D5.3 "Business Plan for exploitation I" at M18 and D5.6 "Business Plan for exploitation II" at M36

[11] These KPIs followed the "Specific Measurable Achievable Relevant Time-phased – S.M.A.R.T. criteria". This means that the considered KPI measure has a Specific purpose, it is measurable to really get a value of the KPI, the defined KPI has to be Achievable, the improvement of a KPI has to be Relevant to the success of the organization, and finally it must be Time-phased, which means the value or outcomes are shown for a predefined and relevant period. In order to be evaluated, KPIs are linked to target values so that the value of the measure can be assessed as meeting expectations or not. The S.M.A.R.T. criteria were originally developed by George T. Doran (Management Review, 1981) and popularized by Peter Drucker. It gives criteria to guide in the setting of objectives, for example in project management. Source: https://en.wikipedia.org/wiki/SMART_criteria

IMS key elements		Goal	KPIs
		Globally impact also other types of cultivations, geographies and sectors affected by climate change	Define and analyse other sectors in Europe and beyond
Main innovation enabling/driving factors (paragraph 3.4)	Organisation of roles and responsibilities	Prepare an Innovation Management Plan (IMP) by Innovation Manager	Deliver the IMP at M12
		Set up Executive Committee meetings, with dedicated session on innovation management	Organise meetings at least on a 6-months basis for the overall project duration
	Resources and competences	Assure the equilibrium between industrial and research partners	Collect on a monthly basis both technical and commercial feedback
		Assure the demo-site clusters	Involve one end-user and one research entity for each cluster
	Communication, awareness and collaboration	Deploy a collaborative website (INTRANET)	Deliver the collaborative website at M05
		Plan regularly meetings/ conference calls	Organise at least bi-monthly conference calls and annual technical meetings (face-to-face)
		Set up focus groups and regular e-meetings with end users and PAB members	Organise three focus groups and three e-meetings
		All targeted audience is reached, and there is an interaction and engagement in the dissemination process	At least 100,000 are reached through events, workshops and online platforms
			Number of visits to the website (At least 500/month of page views). Social Media (at least 100 likers for the Facebook page, 100 followers for Twitter and 25 members for the LinkedIn group)
			3 scientific publications
			6 press releases in different languages

IMS key elements		Goal	KPIs
	Documented information	Prepare and share precise Minutes of Meetings (MoM)	Prepare and share MoM after each meeting or relevant call
	Intellectual property (IP) and knowledge management	Review of existing IP assessment	Continuous discussion at least of background and foreground knowledge/IP by partner and at Consortium level in all coordination meetings and through dedicated calls
			On-going analysis to assure the VISCA "freedom to operate"
		IP identification	Definition of VISCA's results that might be protected
			Continuous review of policies and relevant procedures for determining the subsequent ownership and/or assignment of IP rights
		IP protection/ File and application for IP protection	Evaluation of the most appropriate protection means for VISCA results through dedicated analysis shared with partners
			If agreed, IPR protection preparation together with respective document
			Definition of specific terms and conditions for exploitation of protected results (if any) at Consortium level, once BP has been defined (M18) and revised (M36)

IMS key elements	Goal	KPIs
Innovation process results (paragraph 3.5)	Prepare a Business Plan (BP) (over 5 to 10 years period)	Deliver a BP issue 1 at M18 and a BP issue 2 at M36
	Include in the BP the main financial and non-finical indicators	Provide financial projections on revenues, EBITDA, OPEX, CAPEX, cash flow
		Identify the NPV and IRR of the innovation
		Undertake a risk analysis
	Enlarge the potential customer base	Reaching up to 25/30%[12] of market penetration in 10 years

Table 3-2 Main KPIs for VISCA IMS

As a result of the evaluation process of the KPIs, decisions will be undertaken in order to obtain a continuous improvement of the proposed IMS. In particular deviations will be identified and analysed and corrective actions defined to improve the efficiency and the results of the IMS.

3.7 Innovation management techniques

In general, the Innovation Management Techniques (IMTs) are conceived as a broad palette of tools, techniques and methodologies supporting the innovation process of companies and helping them to deal with the market challenges in a systematic way (see also 2.7). The usefulness of one IMT for a particular business challenge is normally measured in combination with other IMTs. In fact, the adequate mix of the IM techniques and methodologies is recommendable in order to reach the innovation success of the activity (RD03). Therefore, during the project, various IM techniques and methodologies were selected and applied, in accordance with the Technical Specification (RD02).

The main **IM techniques and methodologies** used within VISCA are:

- Strategic intelligence management, supporting the management of innovation by providing decision support and knowledge concerning every aspect of the project;
- Knowledge management, aimed to generate, collect and exploit the knowledge inside the Consortium in a continuous and systematic manner, improving its creative and innovative potential as a whole;

[12] Preliminary estimations. However, this percentage could change during the business plan preparation and after end-users and partners feedback.

- Intellectual property management, to raise IP awareness in order to manage, protect and exploit intangibles, as well as solve other issues that may arise in terms of intellectual property rights;
- Collaborative management to improve the innovative performance of VISCA, seizing opportunities for successful creativity and innovation, solving problems, exploiting external potential;
- Innovation project management, in order to manage VISCA' whole innovation process (i.e. from research and development up to production and marketing) securing the quality of technical and financial realization in each of these segments;
- Cooperative and networking, by increasing communication and hence cooperation within internal and external Consortium partners (e.g. Advisory Board);
- Market intelligence techniques, with a detailed competition research and analysis which enables VISCA team partners to collect, filter, analyse and distribute relevant reliable and timely information on competition and end-users, transforming thus information into knowledge as the ground for decision making process; and
- Business creation, in order to best develop the business cases and strategy foreseen for VISCA.

To effectively use these techniques and methodologies, a set of tools/ approaches will be adopted, as presented in the table below.

Innovation techniques/ tools	Tools/ Approaches
Strategic intelligence management	• Coherent and strategic planning • Data and information collection • Data analysis and elaboration • Briefing and reporting
Knowledge management	• Knowledge mapping • Document management • Data management
IP Management	• IP assessment • IP identification • IP ownership • IPR protection
Collaborative management	• A collaborative website allowing information sharing and knowledge sharing • Discussion forums • Regular meetings and conference calls
Innovation project management	• Project management • Quality control and assurance • Risk assessment

Innovation techniques/ tools	Tools/ Approaches
	• Innovation management
Cooperative and networking	• Groupware technologies • Workshops • Focus groups • Communication and Dissemination
Market intelligence	• Technology watch • Competitive assessment • Business Intelligence • Market strategy
Business creation	• S.W.O.T. analysis • Business model (e.g. Canvas) and plan • Sensitive analysis • Roadmap for solution adoption • Exploitation actions • Replicability analysis

Table 3-3 Innovation tools and methodologies used in VISCA

4 Conclusions and next steps

This chapter summarises the main findings related to the VISCA IMS. In detail, it presents:

- Main conclusions (see paragraph 4.1); and
- Lessons learned and way forward (see paragraph 4.2).

4.1 Main conclusions

This report starts with a brief overview on the adopted standards (see chapter 2). The CEN/TS 16555-1 guarantees consistency in the management of innovation among organisations, regardless of sector, type or size. In particular, it provides useful guidelines to identify a common framework able to guide organizations to: implement systematic innovation, facilitate innovation assessment and benchmarking, expand the market for innovation support services and identify the main steps to integrate innovation as a discipline into the organization.

For this reason, the Technical Specification has been adopted also within VISCA context, declining it in line with the project characteristics (see chapter 3). As a result, this document represents a tailored-made Innovation Management Plan able to face the project needs and make a gap analysis between the current status of the project regarding innovation management and the requirements of the CEN/TS.

Starting from the first key IMS element (see paragraph 2.1), we can confirm that innovation is an intrinsic factor of VISCA project, due to its nature and objectives. However, to be successful in its management, a complex and articulated context must be taken into consideration and regularly monitored. In fact:

- VISCA foresees dedicated tasks and activities to maintain both internal and external issues under a stable control; and
- VISCA is an innovation tool that crosses disciplinary boundaries and involves co-creation of knowledge and co-delivery of outcomes with industrial and research actors by applying a trans-disciplinary perspective and a multi-stakeholder approach, involving both internal and external key actors.

All these aspects are well reflected in the project vision and strategy (see paragraph 3.2) that present a clear technical and commercial goal: the development and promotion of a disruptive innovation (i.e. the CS and DSS) within the agriculture domain, in particular starting from the wine industry but then addressing different types of cultivations, geographies and sectors. This ambitious goal is the result of a strong and common innovative culture, shared by all the Consortium partners.

To reach this goal, a rigorous operational plan (see paragraph 3.3) has been considered fundamental since the begging of the project. The respect of this plan, together with the achievement of its specific and verifiable objectives, will be a main parameter to measure the final success of the project.

Due to its relevance, the proposed plan has been further articulated, identifying all the innovation enabling factors for VISCA (see also 3.4). After this analysis, we can conclude that VISCA presents all the innovation driving factors (as defined in the CEN/TS), i.e.:

- A structured framework in terms of innovation roles and responsibilities, with dedicated figures and activities, ensuring the effectiveness of the VISCA IMS;
- A strong internal expertise to reach the innovative goal and no need of external subcontractors for specific tasks (no gaps identified);
- A well-defined and effective internal and external communication, awareness and collaboration flow;
- A set of user-friendly tools to share documented information;
- A clear preliminary strategy, dedicated roles and a specific attention for the IP/ knowledge management.

The Consortium will continue to foster and detail these factors during all the project activities. Moreover, it leveraged them to set up the overall innovation management process at an early stage of the project (see paragraph 3.5). This process fully reflects the project operational plan.

At the same time, VISCA partners are also aware that "we cannot know what we cannot measure". For this reason, the IMS performance will be constantly evaluated, also through a set of dedicated KPIs, in order to continuously improve this system (see chapter 3.6).

Last, but not least, a mix of IM techniques and methodologies, tools and approaches useful for the project has been defined (see paragraph 3.7). They are intended as a non-exhaustive list that will be reviewed and adapted to the project needs, with a flexible approach aimed at developing the most appropriate means to reach the project objectives.

To sum up, this IM Plan shows that the management of innovation and knowledge is a fundamental part of VISCA project. For this reason, VISCA IMS is well integrated in the management structure of the project and in its work plan in order to ensure a proper innovation management throughout the entire duration of the project. In this context, the overall structure of VISCA IMS as designed in this document aims to support the processes for the realization of the proposed innovative solution and for its market uptake, ensuring a concreate and real success of VISCA.

4.2 Lessons learned and way forward

During the preparation of this document, it clearly came to light that the concept of innovation is mainly linked to the one of commercialisation within VISCA project. In particular, VISCA will conduct innovation activities directly aiming at producing improved product and services and at preparing the consequent market rollout. At the same time, end-users will also implement innovations in their process thanks to VISCA.

However, bringing together people from different backgrounds and countries to work towards a common and ambitious goal should never be considered an easy thing to do. As in any creative process, developing an innovation project requires the leadership of a determined coordinator, supported by specific figures (e.g. the Innovation Manager), and a clear, structured but also flexible framework through which innovation should be managed.

In this context, confidentiality and intellectual property issues, the selection of funding opportunities available, partner's technological backgrounds and potential business opportunities are some of the most important aspects that require the special attention in the innovation management process during the overall project execution.

For this reason, the Consortium will continue to focus on the role and synergies between partners' experiences, competences, capabilities, and on how partners will protect, share,

manage background, foreground, sideground and postground knowledge/IP. At the same time, detailing of the exploitation plans and preparation for innovation activities will be continuously followed up throughout the project.

To conclude, the current plan provides the main guidelines for the VISCA innovation management, however a continuous assessment of the project innovation will be done by the Consortium within and outside the framework of Task 1.4 “Innovation Management. Engagement with Project Advisory Board (PAB) and end users”. In doing that, the scientific/ technical, market and organisational dimensions will be taken into consideration to have an overall alignment of the project achievements to the current technological and market trends.

5 Annex

5.1 Annex 1: VISCA Consortium

Partner	Description
Meteosim S.L. (Coordinator)	METEOSIM is a company specialized in meteorological and environmental services which operates worldwide using the most advanced numerical modelling tools.
Barcelona Supercomputing Center (BSC)	BSC is the national supercomputing center in Spain. BSC specializes in High Performance Computing (HPC) and its mission is two-fold: to provide infrastructure and supercomputing services to European scientists, and to generate knowledge and technology to transfer to business and society.
CODORNÍU, S. A.	Codorníu is a company dedicated to the production and distribution of wines and sparkling wines with high added value. Codorníu has its own vineyards and is supplied also from additional winegrowers that they advise to control the entire production chain, starting from the grape.
Institut de Recerca i Tecnologies Agroalimentaries (IRTA)	IRTA is the Public research institute dependent on the Conselleria d'Agricultura of the Catalan Government (Generalitat). Its mission is devoted to the research and applications for the several primary sectors related to the Agriculture in Catalonia.
Istituto Superiore Mario Boella sulle Tecnologie dell'Informazione e delle Telecomunicazioni (ISMB)	ISMB is a research & innovation center operating in the Information and Communication Technologies (ICT) domain.
Università degli Studi di Napoli Federico II – Department of Agricultural Sciences (UNINA- DAS)	The UNINA-DAS is settled at the historical Faculty of Agriculture located in the royal palace of Portici that is a long-established Institution with expertise in the fields of plant science, fire ecology, animal ecology and behaviour, conservation biology and ecological modelling.
Azienda Vinicola Michele Mastroberardino Spa (MBD)	Mastroberardino company is fully committed to traditional cultivation of ancient grape varietals, with ability to blend modern technology with time-tested techniques. The Mastroberardino long term goal has been focusing on wines reflecting the typical characters

	and notes of the Irpinia territory (located in the province of Avellino – Campania region – Italy).
Symington – Vinhos SA (SV)	The Symingtons, of Scottish, English and Portuguese descent, have been Port producers for five generations since 1882, although their family's involvement in Port dates back fourteen generations to 1652 through their great-grandmother Beatrice de Carvalhosa Atkinson, whose ancestors were among Port's pioneers. Symington Family Estates is the only major Port Company owned by one family.
Universidade do Porto - Faculdade de Ciências (UPORTO)	The Faculty of Sciences of the University of Porto (FCUP) is one of the oldest and largest schools of the University of Porto. It was established in 1911 and has been providing high-quality training in the field of exact and natural sciences and mathematics.
Technical Unit of the Euro-Mediterranean Information System on know-how in the Water sector (SEMIDE)	SEMIDE is a strategic tool for exchanging information on the water sector among the Euro-Mediterranean Partnership countries. It focuses on assisting the Mediterranean Partner Countries to develop their own water intranets and to allow more coherent water planning.
Alpha Consultants (UK) Ltd. (ALPHA)	is a newly formed UK consultancy, affiliated to ALPHA Consultants srl, a leading Italian strategy consultancy specialized on management consulting services in various industries (e.g., Aerospace, Transportation, Medical devices, High tech, Telecommunications, Emergency management, Maritime) and with a strong a strong space applications expertise.

Table 5-1 VISCA Consortium Members

5.2 Annex 2: VISCA Advisory Board

Scope	Member	Sector	Representative
World	OIV (International Wine Association)	Wine	Fernando Alves*
Spain	INNOVI (Catalan Wine Cluster)	Wine	Clara Santamaria Echaniz
Spain	PTV, (Plataforma Tecnológica del Vino)	Wine	Trinidad Márquez García
Italy	Asso-Enologi	Wine	Roberto di Meo
World	WMO (World Meteorological Organization)	Climate Change	Jose Camacho
World	UNEP (United Nations Development Programme) - Consultant	Climate Change	Noelia Jover
World	IOC (International Oil Council)	Olive oil	Abdellatif Ghedira
Spain	AEMO (Spanish Olive Association)	Olive sector	José Mª Penco & Salvador Cubero
Spain	CITOLIVA (Olive Oil Technological Center)	Olive oil	Cristina de Toro Navero
Italy	Aprol Campania (Olive Oil Organization)	Olive oil	Francesco Acampora
Spain	DELTAMED (Mediterranean Deltas Association)	Agriculture of Deltas (rice)	Manuel Masiá Marsá
Europe	EEA (European Environmental Agency)	Land Systems	Annemarie Bastrup-Birk
Europe	JRC (Joint Research Center)	Agriculture	David Wilkinson

Table 5-2 VISCA Project Advisory Board

The Project Advisory Board will be composed by the members indicated in the table above, plus the end-users participating in VISCA (CODORNIU, MASTROBERARDINO and SYMINGTON).