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Validation of diagnostic tests to support plant health



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Abstract:

Deliverable 7.2-“Communication and Exploitation strategy plans” has been developed within task 7.2 of WP7. This document describes the strategy developed to ensure the appropriate exploitation of the outputs of the VALITEST project (Validation of diagnostic tests to support plant health). The deliverable D7.2 details VALITEST exploitation potential and how project partners, end-users and stakeholders can benefit from the final results of the project. The exploitation strategy is directly connected to deliverable D6.4. Dissemination and training plan.

A final version will be provided in the D6.9-“Final plan for the Dissemination and Exploitation of project Results (PDER)” at month 36.

Partners involved: IPADLAB, WBF, BIOREBA, LOEWE, EPPO, NIB, ULG, CD, WR (Prime Diagnostics), SEDIAG, GIORIN, ANSES, ULG

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INTRODUCTION

Deliverable 7.2-“Communication and Exploitation strategy plans” is based on the added value and results generated by the VALITEST project (Validation of diagnostic tests to support plant health) to ensure maximum benefit from it. This deliverable aims to provide an updated version of D7.1-“Results exploitation Plan”. In this deliverable, the exploitation plan of the VALITEST project is described and the plan of actions and methodologies for the project are defined.

There are six identified work packages appointed to the major outcomes with significance for exploitation in the VALITEST project:

- WP1: TPS organization to provide new validation data for the detection and identification of plant pests of interest in the EU.
- WP2: improvement of the validation process.
- WP3: guidelines establishment for quality assurance and Standard Operating Procedures (SOPs) to produce reference materials used in validation studies.
- WP5: guidelines development following a horizontal approach allowing proficiency testing to be undertaken without the laboratories having to participate in proficiency tests for all the tests used.
- WP6: dissemination of validation data and results generated during the project. Organization of training workshops for targeted audiences on the concept of validation.
- WP7: exploitation of the project results and structuration of the quality and commercial offers for plant health diagnostics.

1. THE PROJECT

1.1. Context of the project

Plant pests (bacteria, viruses, fungi, nematodes, arthropods or weeds) are responsible for major crop losses. Early diagnosis and a rapid response are crucial to reduce the risk of entry and spread of such pests and ultimately their impacts. Furthermore, it is recognized that plant pests can be managed most effectively when control measures are implemented at an early stage of infestation. National Plant Protection Organizations (NPPOs) routinely perform pest diagnosis as part of export certification, import inspections, pest surveillance and eradication programs. In 2016, the Commission on Phytosanitary Measures adopted a recommendation on diagnostics recognizing that 'pest diagnosis is a cross-cutting issue that underpins most International Plant Protection Convention (IPPC) activities. In order to act against a pest, it must be accurately identified. To enable safe trade, pest diagnosis must further be completed quickly and to a high level of confidence'.

Validation is essential to provide information on the performance of the tests that are used in diagnostics. However, most detection and identification tests are currently only validated on an intra-laboratory basis or through limited test performance studies (TPS), and there is a need to further harmonize practices.

1.2. Goals of the project

The VALITEST project [<https://www.valitest.eu/>] aims at improving diagnostics by producing validation data, harmonizing further processes and enlarging/triggering enlargement of the commercial offer for reliable detection and identification tests.

The project will include two rounds of TPS. The first one will include combinations of pest/test/matrix, prioritized based on the expertise of the project's consortium. The second round will include other combinations based on the needs expressed by various stakeholders. Priorities for validation will then be better aligned to their needs and to the market. To maximize the impact of the project, calls of interest will be organized to include in the validation program, kits of suppliers outside the consortium and allow participation in the TPS of voluntary proficient laboratories. Current harmonized procedures in Plant Health for validation and organization of TPS will be improved by including appropriate statistical approaches and by adapting the process for new promising technologies, such as Next Generation Sequencing. Liaison with regional and international standardization bodies will allow wide dissemination of validation data obtained in this project especially by their inclusion in harmonized diagnostic protocols. The outcomes of the project will stimulate, optimize and strengthen the interactions between stakeholders in Plant Health for better diagnostics and lay the foundations for structuring the quality and the commercial offers for plant health diagnostics tools thanks to a dedicated association and a quality charter.

1.3. List of participants:

n°	Organisation name	Stakeholder group	Country
1	Agence Nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (ANSES)	Research ⁽¹⁾	France
2	Università degli Studi di Torino (UNITO)	Research ⁽¹⁾	Italy
3	Eidgenoessisches Department fuer Wirtschaft, Bildung und Forschung – Agroscope (WBF)	Research ⁽¹⁾	Switzerland
4	Bioreba AG (BIOREBA)	SME ⁽²⁾	Switzerland
5	Loewe Biochemica GmbH (LOEWE)	SME ⁽²⁾	Germany
6	European and Mediterranean Plant Protection Organization (EPPO)	Policy ⁽³⁾	France
7	Fera Science Ltd. (FERA)	Research ⁽¹⁾	United Kingdom
8	National Institute of Biology (NIB)	Research ⁽¹⁾	Slovenia
9	Gembloux Agro-Bio Tech – Université de Liège (ULG)	Research ⁽¹⁾	Belgium
10	Nederlandse Voedsel en Waren Autoriteit (NVWA)	Policy ⁽³⁾	Netherlands
11	ClearDetections B.V. (CD)	SME ⁽²⁾	Netherlands
12	Stichting Wageningen Research (WR)	Research ⁽¹⁾	Netherlands
13	International Plant Analysis & Diagnostics (IPADLAB)	SME ⁽²⁾	Italy
14	Sediag S.A.S. (SEDIAG)	SME ⁽²⁾	France
15	Consiglio per la Ricerca in Agricoltura e l'analisi dell'economia agraria (CREA)	Research ⁽¹⁾	Italy
16	Główny Inspektorat Ochrony Roslin i Nasiennictwa (GIORIN)	Research ⁽¹⁾	Poland

⁽¹⁾ Research institutions

⁽²⁾ Industries, including SMEs developing diagnostic tools

⁽³⁾ Policy makers and organisations producing policy recommendations

2. OVERALL EXPLOITATION STRATEGY

This deliverable D7.2-“Communication and Exploitation strategy plans” aims at presenting the updated exploitation strategy and plans for the main results coming from the project VALITEST. This document may be modified over the project lifetime according to the results, the outcomes and impact of the project activities and the needs of all the partners. All the consortium partners contribute to the evolution of this deliverable during the project lifetime by expressing their exploitation interests according to their own strategical interest. A final version will be provided in the Plan for Dissemination and Exploitation of Results (PDER) to be provided at month 36 (D6.9).

The strategy for the exploitation of the project results was elaborated from the beginning, in collaboration with the dissemination and communication planning, to enable the most extensive use of the project outputs and the maximization of the project.

2.1. Definitions

To understand the exploitation approach of VALITEST, it is necessary to understand what exploitation is. It is important to define the signification of results and to point out the differences between dissemination, communication and exploitation.

In this document, the used definitions are reported from H2020 reference terms:

- **Results:** *“Any tangible or intangible output of the action (such as data, knowledge and information, whatever their form or nature, whether or not they can be protected), which are generated in the action, as well as any attached rights, including intellectual property rights.”*
- **Dissemination:** *“Means to make the results of a project public (— by any appropriate means other than protecting or exploiting them, e.g. scientific publications).”*
- **Communication:** *“Communication on projects – it is a strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating about (i) the action and (ii) its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange.”*
- **Exploitation:** *“Means to make use of the results produced in an EU project in further activities (other than those covered by the project, e.g. in other research activities; in developing, creating and marketing a product, process or service; in standardisation activities).”*

Even though dissemination and exploitation activities can be considered separately, they are closely linked and often belong together since one drives the other and vice versa. What differentiate them from one another are the objectives, focus and target groups they address.

While dissemination activities shall make the results of the project visible, the exploitation activities shall guarantee the use of the project results during the project and beyond it. The definition of exploitation does not have a pure commercial meaning, thus opening the scope of application of results at different levels and in different domains. This leads to both commercial and non-commercial exploitation. While commercial exploitation is more related to taking results to the market, non-commercial exploitation is more related to the effective use of knowledge, know-how, methodologies or standards.

The VALITEST exploitation strategy is focused on exploiting and disseminating the project results so they can be profitable to all the project participants but also to all the target audiences by supporting the development of new activities and business.

The VALITEST exploitation strategy also aims to spread the project results so that the outputs generated in the project can have an impact beyond the project end.

VALITEST results exploitation will be done through research activities, commercial activities, training and policy making. Each partner shall take measures to ensure “exploitation” of its results by:

- (a) using them in further research activities;
- (b) developing, creating or marketing a product;
- (c) creating and providing a service;
- (d) using them in standardisation activities.

The Exploitation plan shall describe the way each partner of VALITEST project will exploit jointly and individually the results in order to make them valuable and maximise the project impacts.

2.2. Target audiences' profile

The exploitation target audiences are entities that can benefit from the project results. The identification of the target audiences allows a more effective exploitation of the project outcomes and results, in order to guarantee that the project results are exploited and are used according to the target needs and expectations.

In this updated version of the Exploitation plan, the definition of target group and needs is presented according to exploitable data:

Target group	Profile
Scientific community	Universities, research institutions
Laboratories	Reference laboratories and private laboratories performing plant pest diagnostic analysis (official, certification, quality control,...)
Policy and decision makers and governmental authorities	National governments, Environment and Agriculture Ministries, Phytosanitary authorities, European organization, Institutions
Diagnostic industry	Plant pests' diagnostic products manufacturers
Inspection services, NPPOs	National/local inspections services and National Plant Protection Organizations
Accreditation bodies	Accreditation bodies active in plant diagnostic
Farmers/growers, seeds producers, agriculture consulting	All types of professionals related to the field of plant production in agriculture

2.3. General expectations for target audiences

VALITEST outcomes and results will generate strong impact on target audiences described in the previous section and the overall plant health diagnostic sector.

To reach the different targets, VALITEST has developed common and individual exploitation strategies based on project results added values and the target groups' expectation listed in the following table.

Target group	Expectations
Scientific community	Further research activities, collaboration and new projects
Laboratories	Improvement of the diagnostic and the validation procedures, standardization, guidelines (validation, proficiency, reference material production), validated tests, validation data, training
Policy and decision makers and governmental authorities	Guidelines (validation, evaluation), support for policy decision, dialogue with industry and stakeholders
Diagnostic industry	Validation data, guidelines (validation, reference material), improvement of competitiveness, better organization and visibility of the diagnostic industry
Inspection services, NPPOs	Improvement of the diagnostic and the validation procedures, standardization, guidelines (validation, proficiency, reference material production), validation data, practical solutions for pest detection to support pest management, training
Accreditation bodies	Guidelines (validation, proficiency), standardization
Farmers/growers, seeds producers, agriculture consulting	Validated tests, practical solutions for pest detection to support pest management, training for in field tests

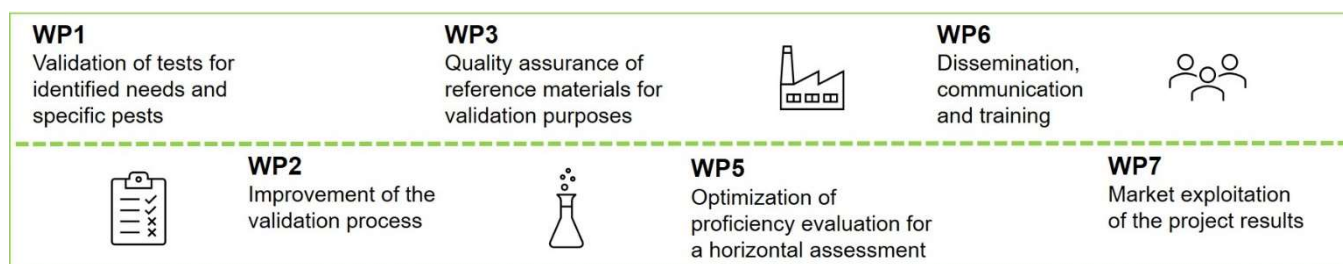
2.4. Project exploitable results

VALITEST exploitable results include a range of outcomes generated by the project partners during the project lifetime. In this section, the list of exploitable results including their description, and the target audiences are reported. This list will be continuously improved until the end of the project and the final version will be included in the Plan for Dissemination and Exploitation of Results (PDER) to be provided at month 36 (D6.9).

In the D7.1-“Results exploitation plan” some exploitable results were identified and listed in a table that has been reviewed and updated in this new deliverable. This list will have to be improved at M36 and this improvement shall be based on the consortium brainstorming sessions, considering possible changes, analysing the effective obtained results.

The exploitable results produced by VALITEST address the specific needs of the different target audiences. Through the exploitation planification, they will be of great significance for all the actors of the plant health diagnostic field across Europe.

The project results derive from activities from different work packages:



In the following table, VALITEST exploitable results, the target audiences, and the associated deliverables are listed. This table was established in collaboration with the WP leaders.

Table 1: List of VALITEST exploitable results and associated **target audience**

N.	WP	VALITEST exploitable results	Target audiences	Deliverable
1	WP1	Description of the process of TPS organization	TPS organizers, EU reference laboratories (in the field of plant health), NPPO	D1.4
2	WP1	Approach for systematic collection and comparison of performance characteristics (from literature and in-house studies)	EPPO, TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories	D1.4
3	WP1	Results of validation for the selected tests	EPPO, TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories, farmers/growers	D1.4
4	WP2	New and improved approach to analyse and report data of validation study (including TPS)	EPPO, TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories	D2.1
5	WP2	Guidelines for the selection, development, validation and routine use of high-throughput sequencing analysis in plant diagnostic laboratories	EPPO, TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories	D2.2
6	WP3	List of criteria the reference materials have to meet for use in validation studies	Reference material producers, NPPOs, diagnostic laboratories, kits manufacturers	D3.1
7	WP3	Updated Standard Operating Procedure (SOPs) for the production of the reference materials (RM)	Reference material producers, NPPOs, diagnostic laboratories	D3.3
8	WP5	Results of a survey concerning the proficiency testing needs of laboratories (D5.1)	Companies and/ or Laboratories	D5.1
9	WP5	Approaches to develop an offer of proficiency tests	Companies and/ or Laboratories	D5.2
10	WP5	Approaches to develop a participation plan to proficiency tests	Laboratories	D5.2
11	WP6	Addition of validation data in the EPPO database	TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories, farmers/growers	D6.6
12	WP6	Revision of EPPO diagnostic standards	TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories, farmers/growers	
13	WP6	Training activities (webinars, practical training sessions, tutorials)	TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories, farmers/growers	D6.7, D6.8
14	WP7	European Plant Diagnostic Industry Association (EPDIA) establishment and EPDIA website	EU reference laboratories (in the field of plant health), plant health experts, private laboratories, manufacturers, farmers/growers	D7.2
15	WP7	EU Quality Charter establishment	EU reference laboratories (in the field of plant health), plant health experts, private laboratories, policy makers, accreditation bodies, manufacturers, farmers/growers	D7.3

3. ACTION PLAN

Following the definition of the general exploitation strategy and objectives, in the D7.1-“Results exploitation Plan”, the present deliverable presents the action plan for exploitation.

The outcomes produced by VALITEST will have an important impact on plant health diagnostic since they will provide knowledge and tools to the different stakeholders. These results will enable the target audiences to improve plant health diagnostic reliability and implementation in the European countries. The outcomes of the project will also support the establishment of a more structured commercial offer for plant health diagnostic through the establishment of a European Plant Diagnostic Industry Association and the creation of a Quality Charter for commercial products production and validation in plant health diagnostic. Furthermore, the outcomes of VALITEST will also stimulate and improve interactions between stakeholders in plant health for better diagnostic.

To reach the different targets, VALITEST has developed general and individual exploitation strategies based on project results and on target groups expectation previously identified.

3.1. General exploitation plan strategy

The exploitation of the project’s results is a key element for the success of the VALITEST project. The main goal of VALITEST exploitation strategy is to ensure the exploitation of the project results and to enable the target audiences to have access to the project results (data, knowledge and guidelines).

In this section, general exploitation activities have been identified for the effective exploitation of the project outcomes and results:

➤ TO PROVIDE VALIDATION DATA:

Two independent rounds of tests performance studies (TPS1 and TPS2) for prioritized pests in a range of matrices and for a range of diagnostic technology related platforms (both laboratory and on-site based) have been prepared and organized.

These TPSs have produced new validation data (D1.4-“TPS reports with description of the method, materials and software used, as well as the data analysis - Round 1”) for tests where limited validation data are currently available. Validation data obtained from the two rounds of TPSs will be made available in the EPPO Database on Diagnostic expertise and they will be exploitable by a large audience for the improvement of diagnostic and validation procedures (choice of methods, accreditation, validation of methods,...). The validation data will be used also by companies to communicate on the performances of their own commercial products or to improve the quality and reliability of the products evaluated.

➤ TO PROVIDE KNOWLEDGE ON TPS ORGANISATION:

Beyond the results of the test performance studies, D1.4 contains the description of TPS organization. This result will be exploitable as recommendation for the improvement of TPS organization by target audiences such as TPS organizers and EU reference laboratories.

➤ TO PROVIDE GUIDELINES AND STANDARDS:

VALITEST will develop guidance for the plant health diagnostic sector that will be useful for EPPO panels to update relevant EPPO Standards.

D2.1-“Guidelines for the revision of the EPPO Standards PM 7/098 and PM 7/122 for validation studies (including TPS)” provide guidelines that describe a new and improved approach to analyse

and report data of validation study, including test performance study (TPS) for integration in the appropriate EPPO standards (i.e. PM 7/98 (2019) and PM 7/122 (2014)). D2.2-““Best practice” guidelines for validation and routine use of non-targeted techniques in diagnostic setting which could serve as a basis for a new EPPO Standard” provide recommendations on the process of selection, development, validation and verification of high-throughput sequencing (HTS) tests and the quality assurance for their routine use as diagnostic tests in plant health laboratories.

D3.1-“List of the criteria the reference materials have to meet for use in validation studies” and D3.3-“Guidelines and Standard Operating Procedures (SOP) finalised for the production of the reference materials” provide a list of recommendations to produce reference materials and an optimisation of the Standard Operating Procedure (SOP) for reference material production. These results will be exploitable by target audiences including reference material producers, NPPOs and diagnostics laboratories that have to produce reference material for their own activities. An EPPO Standard will be developed based on the outcome of WP3.

Although WP5 was not able to demonstrate the suitability of the horizontal proficiency testing approach, D5.2-“Guidelines on an approach to undertake horizontal proficiency testing” highlights important aspects to be taken into account by laboratories for the improvement of proficiency testing strategy. These results will be available for private companies and laboratories that will be interested in the development of business activities on proficiency tests organization.

In the framework of the project, the improvement of the validation section of the free access EPPO Database and the expected revision of EPPO standards will be profitable and exploitable by a large target audience including TPS organizers, EU reference laboratories, kits developers and manufacturers, diagnostic laboratories and farmers/growers.

➤ **TO ORGANISE TRAINING WORKSHOPS:**

VALITEST partners will organize dissemination/training activities for diagnostics laboratories on the concept of validation, on the organization of TPS and on the development, validation and routine use of HTS tests for plant health diagnostics. Due to the Covid-19 restrictions situation, these activities will be held online from January 2021. Three webinars series, practical online sessions and video tutorials will be prepared for participants.

Online training sessions will be organized in conjunction with the dissemination/training activities and will be reported in D7.4-“Report on education and training session during the project”.

➤ **TO ESTABLISH AN EU ASSOCIATION OF THE PLANT HEALTH DIAGNOSTIC INDUSTRY (EPDIA):**

In the framework of WP7, an EU Association of the Plant Health Diagnostic Industry (EPDIA) will be established to ensure the market sustainability of the SMEs and to facilitate dialogue with stakeholders and decision makers (M36). Information on the establishment and the role of an industrial association from other fields has been collected in order to define the structure and the roles of EPDIA. A questionnaire on the EPDIA establishment has been prepared and sent to different stakeholders. Based on the collected information, the questionnaire answers and the discussion within WP7, the principal members of EPDIA will be the manufacturer companies but the adherence to EPDIA will be also opened to other actors in the field involved in plant pests diagnostic like research centers and private laboratories. EPDIA will act as a platform for communication within the industry and with the main stakeholders, international organizations, EU and society.

Based on the information collected, the main roles of EPDIA shall be:

- sharing with European institutions and stakeholders on the needs and / or difficulties of end-users in the use of reliable, validated and qualitative phytodiagnosics tools

- engaging partnerships with EURLs (European Union Reference Laboratories)
- establishing and reinforcing the link with European Institutions and NPPO in order to improve the quality and performance of the tools offered to the market by the plant diagnostics industry (TPS, transfer of validation data, standardization of validation methods, etc.)

➤ **TO GUARANTEE THE QUALITY AND RELIABILITY OF EU COMMERCIAL TESTS**

In parallel to the establishment of EPDIA, an EU Plant Health Diagnostics Charter (EPDIA Charter) is being drafted and will be established by the end of the project to define the quality procedures for EU commercial tests production and validation.

The EPDIA Charter is based on six pillars: legal framework, quality system, quality procedures for products development and validation, quality procedures for products manufacturing, communication and marketing ethics and sustainability and social impact.

The application of the EPDIA Charter will contribute to guarantee end-users of the quality of manufacturers' working processes and the reliability, the quality and the performances of the commercial tests they use. The adhesion to this Charter and its application will permit EU SMEs to increase their competitiveness by ensuring the quality and the reliability of EU manufacturers' product worldwide.

➤ **TO ENSURE THE EFFECTIVE DISSEMINATION OF RESULTS DURING THE FINAL CONFERENCE:**

The VALITEST final conference will be organized in 2021 and this event will bring together relevant stakeholders and policy makers. During the final conference, the EPDIA association will be launched and the EPDIA Charter will be presented.

➤ **TO ESTABLISH SYNERGIES WITH RELEVANT INITIATIVES:**

VALITEST has started to develop synergies and will continue to join forces with other projects and initiatives related with the project at national, European and international levels. In the deliverable D6.9-“Final Plan for the Dissemination and Exploitation of project Results (PDER)” to be provided at month 36, the list of these synergies will be reported.

In the table 2, the overall plan strategy is summarized by indicating the exploitable results, the target audiences and the expected advantages.

Table 2: General exploitation plan strategy

N.	WP	Valitest exploitable results	Target audiences	Expected advantages for target audiences
1	WP1	Description of the process of TPS organization	TPS organizers, EU reference laboratories (in the field of plant health), EPPO	Improvement of the diagnostic and validation procedures – recommendation for TPS organization
2	WP1	Approach for systematic collection and comparison of performance characteristics (from literature and in-house studies)	EPPO, TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories	Improvement of diagnostic and validation procedures
3	WP1	Results of validations for the selected tests	EPPO, TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories, farmers/growers	New validation data for the detection and identification of plant pests that are of interest in the EU
4	WP2	New and improved approach to analyse and report data of validation study (including TPS)	EPPO, TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories	Improvement of the diagnostic and the validation procedures, revision of EPPO standards PM7/98 and PM 7/122, training workshops
5	WP2	Guidelines for the selection, development, validation and routine use of high-throughput sequencing analysis in plant diagnostic laboratories	EPPO, TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories	Improvement of diagnostic and validation procedures, basis for a new EPPO standard
6	WP3	List of criteria the reference materials have to meet for use in validation studies	Reference material producers, NPPOs, diagnostic laboratories, kits manufacturers	Minimum criteria list to produce reference materials to be used in interlaboratory studies and validation procedures
7	WP3	Updated Standard Operating Procedure (SOPs) for the production of the reference materials (RM)	Reference material producers, NPPOs, diagnostic laboratories	Optimisation of SOP for reference materials production Use in diagnostic Standard for the production of reference material
8	WP5	Results of a survey concerning the proficiency testing needs of laboratories (D5.1)	Companies and/ or Laboratories	Business development of proficiency tests organisation
9	WP5	Leads to develop an offer of proficiency tests	Companies and/ or Laboratories	Business development of proficiency tests organisation
10	WP5	Leads to develop a participation plan to proficiency tests	Laboratories	Improvement of the proficiency testing strategy
11	WP6	Addition of validation data in the EPPO database	TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories, farmers/growers	Addition of validation data in the EPPO database
12	WP6	Revision of EPPO diagnostic standards	TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories, farmers/growers	Revision of EPPO standards
13	WP6	Training activities (webinars, practical training sessions, tutorials)	TPS organizers, EU reference laboratories (in the field of plant health), companies developing diagnostic tests, diagnostic laboratories, farmers/growers	Training activities on validation concept and TPS organisation (theoretical and practical)
14	WP7	European Plant Diagnostic Industry (EPDIA) establishment and EPDIA website	EU reference laboratories (in the field of plant health), plant health experts, private laboratories, policy makers, accreditation bodies, manufacturers, farmers/growers	Ensure the market sustainability of the SMEs by facilitating dialogue with stakeholders and decision makers Website containing EPDIA information and database of EU produced kits available on the market (technical information)
15	WP7	EU Quality Charter establishment	EU reference laboratories (in the field of plant health), plant health experts, private laboratories, policy makers, accreditation bodies, manufacturers, farmers/growers	Improvement and competitiveness of EU kits manufacturers Contribute to the quality and reliability of the EU products worldwide Guaranty of the kits performance and reliability to end-users

3.2. Individual exploitation plan strategy

Considering that VALITEST exploitable results answer to the precise needs of the target audiences, the exploitation plan strategy requires the definition of individual strategies and activities according to the specificities and the profile of each project partner.

Each individual exploitation plan shall be defined as an integrated part of the general exploitation plan taking into account the strategy and the activity of each partner. Each partner will develop a detailed exploitation strategy that contains the description on how they will exploit the outcomes of the VALITEST project.

Each partner has to develop its own individual exploitation plan based on the guidelines indicated in the D7.1-“Results exploitation plan” because of the differentiation of partners in two main groups: industrial partners and research institute partners. Below the guidelines for both groups are reported:

<u>Guidelines for Industrial Partners</u>
<ul style="list-style-type: none">○ Focus on the main market exploitable results from the project (products, services, validation data...) and their commercial feasibility;○ Identify validation protocols and methods developed in the project transferable to the Industry and laboratories to improve products and services competitiveness considering the current market needs;○ Define how European stakeholders (Inspection services, NPPOs, policy and decision makers and governmental authorities, accreditation bodies,...) can benefit from the exploitation of the results;○ Identify possible obstacles to the exploitation plan and define the actions to make the exploitation plan successful;○ Develop a timeline for exploitation, showing how the exploitation can be structured in phases and identify the prospective time frame after the end of the project to bring the results to the market through the establishment of EU Plant Health Diagnostics Industry Association (EPDIA) and the EU Plant Health Diagnostics Charter for the market;○ Involve marketing, product-management, and sales departments early in the process of the exploitation plan;○ If possible, start exploitation of intermediate results already during the project;○ Consider connections for exploitation with other EU and national research and innovation projects;○ Participate to the establishment of the EU Plant Health Diagnostics Industry Association and the EU Plant Health Diagnostics Charter;○ Evaluate intellectual property protection through patents or industrial secret.

Guideline for Research institutions Partners

- Identify validation data and procedures obtained/developed during the project that are transferable to the end-users (reference and official laboratories, accreditation bodies, industry and NPPOs) to improve services quality and competitiveness considering the current needs;
- Define how European stakeholders (Inspection services, NPPOs, policy and decision makers and governmental authorities, accreditation bodies,...) can profit from the exploitation of the results;
- Identify possible obstacles to the exploitation plan and define the actions to make the exploitation plan successful;
- Identify obstacles to a successful exploitation of the project in TPS organization to improve them early on;
- If possible, start exploitation of intermediate results already during the project.
- Consider connections for exploitation with other EU and national research and innovation projects;
- Evaluate intellectual property protection through patents or industrial secret;
- Organize seminars, conferences, workshops, lab-courses on topics related to the project by showing how they can influence and/or improve education and training;
- Ensure networking for the duration of the project and engage with new partners in future collaborations.
- Exploit the project for acquiring new projects and further funding.

The Plan for Dissemination and Exploitation of Results (PDER) to be provided at month 36 (D6.9), will include a table presenting all the individual exploitation plan actions done during the project and the one to be done beyond the end of VALITEST.

4. NEXT STEPS

The exploitation strategy objective is to ensure that the outcomes and results of the project are exploited during and beyond its end. The final version of the Exploitation plan will be provided at month 36 within the Plan for Dissemination and Exploitation of Results (PDER).