

R & D STRATEGY 2021-2025

1. INTRODUCTION

The CPVO's R&D activities set out in the R&D 2015-2020 Strategy have proven to be successful. With some adjustments, this R&D Strategy 2021-2025 will therefore allow the continuation of CPVO's co-funding activities. It will also continue to provide a framework for the promotion of BMT in variety testing. Accordingly, the co-funding of R&D projects as well as the promotion of BMT remain a central part of the R&D Strategy 2021-2025.

A new element in this 2021-2025 Strategy is the setting of a framework on the involvement of the CPVO in R&D activities of the EU Commission. Those activities should have a close link to the CPVO's field of work. The purpose of including these activities in this strategy is to provide a structural approach to such CPVO activities and thereby ensuring transparency to stakeholders.

The EU's Farm to Fork (F2F) strategy being a core part of the European Green Deal, leans very much on the Commission's Horizon Europe programme, which will play an important role in the support of research and innovation in the EU in the coming years.

For some of the main objectives of the F2F strategy a direct link to plant breeding and the creating of new varieties can be established:

- Ensuring sustainable food production;
- Ensuring food security;
- Reducing food loss.

In order to reach these objectives, the F2F strategy must enable investments in research, innovation and knowledge sharing.

The EU PVP-system supports investment in breeding and provides therefore a framework for innovation like the development of new varieties with improved features.

A robust PVP system providing a strong incentive to breeders for the development of such new varieties contributes to achieve the objectives of the F2F strategy.

As an EU Agency in charge of managing the PVP system in the EU, the CPVO should therefore aim at being involved in the implementation of the F2F strategy wherever it relates to the CPVO's field of activity.

Organic farming is an important part of the F2F strategy. Before embarking on R&D projects related to this topic the CPVO must however assess if it falls within its mandate and consult with the AC and the Commission.

Details of such potential CPVO involvement needs to be discussed with the relevant services in the Commission. The Commission is working on "*Guidance on the involvement of EU decentralized Agencies in Horizon Europe*".

2. GUIDING VALUES

Quality, Cost-Effectiveness, Harmonisation, Timeliness and Accountability.

3. STRATEGIC GOALS

Contribute to implementing the Farm to Fork Strategy being part of the European Green Deal.

Act as centre of excellence for plant variety testing and exercise a network function for enhanced cooperation with European and other international partners.

Support R&D projects with the aim to optimize the quality while reducing costs of DUS testing within the CPVO network of Examination Offices, to strengthen EU Plant Variety Rights (PVR) in order to create a strong incentive for the development of improved varieties in line with the Commission Green Deal, and to facilitate enforcement.

4. OBJECTIVES

1. CPVO involvement in EU R&D programs with a clear link to its mandate;
2. Promotion of the use of bio-molecular techniques in DUS testing and variety identification;
3. Finance and Co-Finance R&D Projects
 - a. The setup of shared online databases
 - b. Improvement and harmonization of methodologies and procedures included in the CPVO Technical Protocols (TPs)

Objective 1 – CPVO Involvement in EU R&D programs with a clear link to its mandate

Following the creation of the IMODDUS WG, one of the first conclusions drawn was that R&D activities and the setting up of common databases in the area of BMT, as well as in other areas, is very costly. Funding from other resources, such as the EU budget was therefore contemplated.

In the recent past, the CPVO has got involved in various large-scale R&D projects under the Horizon 2020 programme of the EU Commission. The CPVO has become project partner in the INVITE project and it has become stakeholder in projects like Liveseed and InnoVar. These projects cover elements, which are directly or indirectly linked to the DUS testing of varieties where the CPVO can provide expertise.

Within INVITE, the role of the CPVO is to provide its experience and knowledge acquired from managing the EU DUS testing network and developing harmonized protocols applicable both for protection and for marketing authorization.

As regards Horizon Europe (HE), the Commission has underlined the important role of EU Agencies not only as a multiplier in disseminating results and exploiting research knowledge but also in shaping the research agenda. Accordingly, the objective for the CPVO as an EU Agency is to provide expertise and advice so that EU funded projects related to variety testing are designed and implemented in a way that supports the strategic goals as mentioned under chapter 3 above. The CPVO should do this in an objective, transparent and neutral way.

In its role to provide expertise and advice in shaping the research agenda in the field of its mission and tasks, the CPVO could, on request of the Commission-DG Santé, provide assistance in:

- the preparation of the HE strategic planning
- the drafting of the HE work-programme
- disseminate results and implement them where appropriate.

In EU funded projects for which the CPVO has contributed to shaping the project, it is not appropriate for the CPVO to be part of a consortium requesting EU funds. It would however not exclude the CPVO from providing technical expertise and advice to one or more of the winning entities in the implementation phase.

In its role to provide expertise and advice so that EU funded projects related to variety testing are implemented in a way that supports the strategic goals, some conclusions can be drawn from INVITE.

Experience from the INVITE project shows that acting, as a project partner requires significant investment in terms of staff and working time. Although the CPVO is convinced that its role as a partner within INVITE brings benefit to the project, it should not be the role the CPVO should aim at in future projects. To be able to provide expertise in an efficient and objective way in EU funded projects related to variety testing the CPVO should limit its role in future to being an active stakeholder.



Before engaging into a project as a stakeholder, the CPVO will assess together with DG SANTE its potential role in a given project and report accordingly to the Administrative Council. Financial as well as workload aspects should be carefully analysed before such engagement.

It is foreseen that the CPVO should carry out the above-described activities within its available resources.

Objective 2 - Promotion of the use of bio-molecular techniques in DUS testing and variety identification

Bio-molecular techniques (BMT) have proven to be a useful tool in the DUS tests of some species. UPOV document TGP/15/1 provides clear guidance on the use of biochemical and molecular markers in the examination of DUS based on the models for which accepted examples have been provided. Some EOs apply such models with success in certain species. The potential for using such techniques for the improvement of DUS tests, variety identification and enforcement purposes has been recognized.

The CPVO believes that technology is rapidly being developed as regards bio-molecular techniques. As a leading Agency in plant variety rights it should invest in R&D in view of the potential use of such techniques. R&D should help to reveal where BMT can contribute to achieving the strategic goals namely the improvement of quality of DUS testing and in particular the strengthening of EU Plant Variety Rights.

Practice has shown that the CPVO BMT Expert Group IMODDUS plays an important role. It provides a forum for BMT experts from entrusted EOs, from breeders' organizations as well as scientists from universities to work as a think-tank for the CPVO in line with the Terms of reference as endorsed by the AC.

Objective 3 – Finance and Co-Finance R&D Projects

Objective 3a - The setup of shared online databases containing data that can be used for managing reference collections (morphological data/biochemical and molecular data/administrative data and photos)

Having complete reference collections is a key requirement for the quality and reliability of DUS tests and consequently for the robustness of the EU PVR system. The increasing number of varieties of common knowledge makes this task becoming more complex and expensive for each Examination Office (EO), and ultimately for breeders. Experience shows that shared databases containing morphological data, biochemical, molecular data and administrative data (incl. photos) can help EOs to ensure the completeness of the reference collection. Synergies can also be made in the sense that each EO contributes data to a centralised database instead of each one of the EOs compiling and maintaining overlapping data.

Experience has also shown that significant work needs to be done in order to ensure that data entered into a database by different partners established in different ecological areas of the EU is reliable and coherent. EOs might need to carry out ring tests, calibrate observation methods, establish common photo facilities and assess to what extent bio-molecular techniques can be used and for what purpose. For the implementation of project results, it is crucial that a commitment is made by all partners to feed into a common database on a continuous basis with data of varieties tested. Such projects have the positive effect that the partners of the EO network meet with the aim to harmonize methods, procedures and to exchange expertise in order to achieve a common understanding. Technical protocols can be improved therefore and a better understanding of the interaction between Genotype and Environment will be gained.

The use of shared databases is also beneficial for DUS tests organized for national purposes (listing and national PVR). The CPVO considers that a strong cooperation amongst EOs therefore contributes to the implementation of the principle of "one key-several doors". The cooperation amongst EOs in updating administrative information on varieties in the shared DBs should also lead to facilitate the access to plant material of reference varieties from breeders/maintainers.

Some R&D projects co-funded under the present strategy have led to common databases being set up and co-hosted by EOs. Feedback shows a generally positive attitude to the results. For the reasons mentioned above it is important to continue with these activities building on the experience gained and to create new



databases for further species where this is considered to contribute to quality, cost-effectiveness and harmonisation.

The CPVO will work closely with examination offices when creating and developing such projects. Due to the relevance of these databases to its strategic goals, the following conditions should be respected in R&D projects co-financed by the CPVO in the framework of this objective:

- The relevant crop sector expert groups should identify possible projects for databases.
- All entrusted EOs for the species in question should be given the possibility to be part of the project and to contribute either as active or associated partners according to their capacity of investments. A non-participation of an entrusted EO in a project should be justified by the EO concerned.
- Necessary and adequate preparatory work e.g. ring tests, calibration of observation methods to ensure the reliability and suitability of the data included in the database.
- An agreement indicating the terms and conditions for contribution and maintenance of data as well as access to and use of the database by the project partners, including the CPVO and future entrusted CPVO EOs for the species (partnership agreement).
- In case of dispute, the CPVO shall act as mediator and if necessary take action to ensure that the administrator and all partners respect the conditions laid down in the agreement mentioned above.

As a matter of principle, the possibility to involve EOs from outside the CPVO network located in countries in or outside the EU in this type of projects is an option in case there are recognized advantages for the CPVO network, EOs and the users of the EU system. The cost of involving such EOs should be borne by the EOs concerned unless there are justified reasons to deviate from this principle.

Objective 3b - Improvement and harmonization of methodologies and procedures included in the CPVO TPs

This objective is to a certain extent overlapping with Objective 3a. However, there are methodologies and practices where there is room for harmonization/standardization within the CPVO network of EOs, e.g. the testing of resistances. The EOs, the breeders and ultimately all testing centres that are doing variety testing based on CPVO TPs are the beneficiaries of this objective. Results can also be shared in UPOV and thus contributing to international harmonisation.

It should be the CPVO crop experts' group to identify and agree on the procedures and methodologies where harmonization could be achieved through R&D projects and to define the priorities.

5. MEANS OF INTERVENTION

5.1. Financing

As described, the strategy envisages the approach of funding applied research projects, organising think-tank meetings and participate in meetings related to R&D.

The available resources are not intended and not enough to finance full-fledged research programs.

It is expected that in this way the CPVO will be able to promote focussed projects and move faster in the achievement of the proposed objectives in order to achieve the strategic goal.

The financing of projects is in essence demand driven. However, due to the introduction of a structured and transparent procedure for processing proposed R&D projects for funding, the CPVO is today in a position to propose in the draft budget an amount which is adjusted to the annual situation and which reflects the real needs for co-funding. So far, the maximum amount proposed on the R&D budget line was 500.000 Euro.



Based on the experience the CPVO is of the opinion that this amount can be considered as an upper limit on this budget line.

5.2. Human Resources

The work related to the co-financing of R&D projects consists of processing and assessment of candidate projects including payments, the organisation and the management of IMODDUS, the coordination and monitoring of on-going projects, the follow up of finalized projects including the implementation as well as the promotion of the results. This work has been integrated in the tasks of CPVO staff, essentially to crop experts.

Any other R&D related activity is also integrated in the tasks of different experts. It is not foreseen to employ or allocate one person responsible only for R&D tasks taking into account the various technical, legal and administrative expertise needed.

Accordingly, the implementation of the strategy as such should not lead to an increase of staff. Its implementation depends on the overall availability of human resources, which will be analysed in the Single Programming Document and annually in relation to the adoption of the budget by the Administrative Council.

6. REPORTING AND ASSESSMENT OF THE STRATEGY

The CPVO shall report on the implementation of the strategy on an annual basis to the AC. The implementation of this strategy should be assessed in 2025 and a report presented to the AC.

