

PORTUGAL

Innovation & cooperation

Location

Alcobaça

Programming period

2014 – 2020

Priority

P1 – Knowledge transfer & innovation

Measure

M20 – Technical Assistance

Funding (EUR)

Total budget 89 524

EAFRD 76 096

National/Regional 13 428

Project duration

2018 – 2019

Project promoter

COTHN - Centro Operativo e Tecnológico Hortofrutícola Nacional (Lead partner)

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The knowledge generated in research and innovation projects is hard to access, thus it is vital to create networks for knowledge transfer between production and research.

Summary

The project aims to promote the transfer of knowledge and good practice between the research and horticulture sectors. It has a particular focus on innovations in the production of fruit and vegetables. This new approach should lead to both increased productivity and sustainability. The main focus of activities is on addressing phytosanitary problems that distress fruit and vegetable crops without the use of products harmful to human health and biodiversity.



Results

Identified the main challenges facing fruit and vegetable producers, including challenges in incorporating innovation.

Strengthened the capacity of project partners to transfer knowledge to the sector.

Gained a perspective on medium- and long-term opportunities in terms of production and transformation processes in the fruit and vegetable sector.

Helped draft a research and innovation strategy in the fruit and vegetable sector, which is of increasing importance to Portuguese agriculture.

Lessons & Recommendations

- ❑ It is important to include in the project partnership at least one partner that can act as an intermediary between the research and agricultural sectors.
- ❑ Maintain a proactive attitude in all phases of the project, in order to stimulate and sustain the involvement of all partners.
- ❑ Use a combination of different methods to disseminate and transfer new knowledge (e.g., online publications, face-to-face meetings, focus groups, open days, etc.).
- ❑ Employ a mediator to manage expectations and sensitivities, as well as to establish relationships of mutual trust between research and innovation and production.

Context

The project arose from the need of the fruit and vegetable sector to find new agricultural practices that can address a key challenges:

- controlling pests and diseases; and
- increasing productivity, while protecting the soil, water resources and biodiversity.

Barriers to addressing these challenges include the fact that the knowledge generated by research and innovation projects is hard to access. Furthermore, research projects often fail to systematically address the needs of the fruit and vegetable sector. It is vital to create networks linking production and research. This would bring producers' needs closer to areas of interest explored by researchers. By doing so, it would help to tackle the following issues::

- increasing incidence of emerging pests and diseases , and the need to seek alternatives to chemical control - reduction of active substances;
- increasing influence of climate change on production conditions, and the need to mitigate its effects; and
- increasing loss of biodiversity, and the need to know and incorporate production practices that contribute to its preservation.

The themes to be explored in the framework of this project were selected based on a diagnosis that the leading partner carried out on the needs of the fruit and vegetable sector. Although the process of inquiry was carried out in 2013, it was considered that the findings are still accurate, relevant and up-to-date. In this context, the following points indicate the set of needs / priorities to be explored:

1. Mechanisms for communicating the results of Research and Development (R&D) projects.
2. Mechanisms for transferring technology between the entities of the scientific and technological system to businesses in the fruit and vegetable sector.
3. Efficiency of water use in irrigation systems.
4. New technologies to find the best harvesting dates.
5. Means of biological protection against pests and diseases.
6. Sustainable production systems aimed at increasing production / quality.
7. Cultural zoning in the national territory (adaptation of crops to the specific conditions of each region).

8. Expedited methods for assessing the fruit and vegetable quality.
9. Soil preservation techniques.
10. Genetic improvement to increase crops' resistance to pests and diseases.

Objectives

The project objectives include:

- Transfer of scientific and technical knowledge that can be applied in the F&V sector. Emphasis is placed on phytosanitary issues, cultural practices oriented to the efficient use of natural resources, and production of new products.
- Mobilisation of national and international partners to work in a network to exchange practical experiences that can be applied in the Portuguese context.
- Incorporation of innovation in the fruit and vegetable sector, demonstration of practices that promote biodiversity and environmental protection.
- Promotion of rural areas, particularly through innovative quality products.

Activities

The project partners were involved in the following activities:

1. Update on innovation needs

Carried out a survey on cross-cutting and specific challenges related to fruit and vegetables production and rural areas. This defined the research needs, as well as constraints in adopting/incorporating innovation in the sector. This needs assessment was structured and developed by the Strategy and Innovation Council, which was set up within the leading partner specifically for this purpose. For the accomplishment of this activity:

- a survey of the members of the leading partner (and their affiliates) obtained their views on production needs and the constraints of adopting innovation;
- a Strategic Council was established to define research and innovation priorities and to develop a single strategic R&D agenda; and
- a series of workshops was held to present to stakeholders and validate the strategic R&D agenda.

Topics examined:

- application of plant protection products;
- protection of fruit and vegetable crops against pests and diseases;
- bioecology, harmfulness of substances and predictive models of pests and diseases;
- alternative means of pest and disease management, including advantages and limitations of biological, semi-chemical, biotechnical and cultural means of protection;
- adoption of practices for the protection of biodiversity;
- management and efficiency in the use of water resources in irrigation systems; and
- production costs and crop accounts for the main horticultural crops.

2. Capitalise on information and results of research projects

This activity was split into three sub-activities:

- compilation of information and results of projects relevant to the fruit and vegetable sector and creation of catalogues covering a range of themes (brochure and digital formats);
- creation of an online library on the lead partner's website, where it is possible to find the list of projects, described through a short summary and respective teams and contacts; and
- Dissemination of projects whose results are applicable in production.

3. Transfer technical knowledge to the sector, and set up knowledge transfer networks

This activity intended to:

- make available technical documentation, in accessible language, on several themes considered fundamental to the Portuguese fruit and vegetable sector. This activity will capitalise on the results achieved in projects with high potential for application, as well as technical manuals, articles and technical publications, etc. Focus groups will be organised to disseminate specific technical aspects, and extensive dissemination actions in the form of seminars or seminars (5 per year);
- set up national networks and participate in international forums for exchanging practical

experiences in the application of new knowledge (e.g., EIP-AGRI); and

- organise thematic workshops to present projects from other regions of Europe, whose results are already applied and which may be interesting in the context of Portuguese fruit and vegetable production systems.

4. Value innovation / incorporation into the agricultural production systems

This activity is divided into two sub-activities:

- demonstration of good practices that promote biodiversity. The demonstrations will be organised in farms applying such practices and are located in the Biosphere Reserve (two open days, one in 2018 and another in 2019); and
- organise Innovation Roadmaps, during the Fruit Fair (<http://www.feiradosfrutos.pt>), in 2018 and 2019. This includes showcasing a sample of projects and testimonies of horticultural producers who adopted innovations and had positive results.

Main results

The project is not yet completed, but it is possible to identify results that have been achieved so far:

- identified the main challenges facing fruit and vegetable producers, including challenges in incorporating innovation;
- strengthened the capacity of project partners to transfer knowledge to the sector;
- gained a perspective on medium- and long-term opportunities in terms of production and transformation processes in the fruit and vegetable sector; and
- helped draft a research and innovation strategy in the fruit and vegetable sector. This sector is of increasing importance to Portuguese agriculture.

The partnership considers that the project will achieve all its expected results in a concrete and tangible way, with emphasis on:

- adoption of innovation in fruit and vegetable production systems; and
- increased productivity and greater producer awareness of the importance of the sustainable use of natural resources.

Key lessons

- It is important to include in the project partnership, at least one partner that can act as an intermediary between the research and the agricultural sectors;
- Maintain a proactive attitude in all phases of the project, in order to stimulate and sustain the involvement of all project partners;
- Avoid dispersion of objectives and anticipate challenges (e.g., develop risk maps). In this way, it will be possible to address, in an effective and timely way, the cross-cutting and specific objectives of the project;
- Sensitise producers to the fact that they are (or will be) always the first to suffer the impact of lack of sustainability in agriculture; and also to the fact that markets are increasingly demanding in terms of quality and respect for natural resources. This will help them become more open to adopting innovative practices;
- Use a combination of different methods to disseminate and transfer new knowledge (e.g., online publications, face-to-face meetings, focus groups, open days, etc.);
- Involve decision-makers at the level of research and innovation and of rural development policy, in particular, when presenting the project results. It is

recommended to employ a mediator to manage expectations and sensitivities, as well as to establish relationships of mutual trust between research, innovation and production; and

- Set up indicators to evaluate whether the project is achieving its objectives / expected results. These could show to what extent the information disclosed is being apprehended by fruit and vegetable producers, or to what extent the incorporation of innovation in productive systems is delivering the expected results.

Project partners

- IPCB-ESA - Instituto Politécnico Castelo Branco – Escola Superior Agrária
[/www.ipcb.pt/esacb/escola-superior-agraria](http://www.ipcb.pt/esacb/escola-superior-agraria)
- UTL-ISA – Universidade Técnica da Lisboa – Instituto Superior de Agronomia /
www.isa.ulisboa.pt
- IPS-ESAS - Instituto Politécnico de Santarém – Escola Superior Agrária /
www.ipsantarem.pt/pt/escolas/escola-superior-agraria/
- Agrotejo – União Agrícola do Norte do Vale do Tejo / www.agrotejo.pt

Additional sources of information

n/a