

ITALY

Restructuring and
developing physical
potential and
promoting innovation

Location

province of Pisa

Programming period

2007 – 2013

Axis / Priority

Axis 1 - Competitiveness

Measure

M124 - Cooperation for development of new products, processes and technologies

Funding (EUR)

Total budget 667 087

EAFRD 235 691

National/regional 299 970

Private 131 426

Project duration

2011 – 2014

Project promoter

Lead Partner: Consortium
Strizzaisemi

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A number of arable farms formed a consortium to explore the possibility of growing oleaginous crops and adding value to the local production.

Summary

Nine arable farms in the province of Pisa, in Tuscany, came together in a consortium in 2010 and two years later they presented a project to explore the possibility of growing oleaginous crops and adding value to the local production.



Project activities included cultivation trials and selection of oleaginous crops, developing and testing of new products and processes, and a market analysis. The farms partners of the project carried out these activities with the assistance of the consortium and of the University of Pisa.

Results

Two innovative products were created: i) high-quality flax and safflower oil for human consumption; and ii) flax and safflower feeding cakes.

A specific packaging to better preserve the organoleptic qualities of the flax oil was developed.

Cultivation protocols were defined that allow to improve the crop rotation, enhancing soil fertility thanks to the introduction of pioneer crops.

All farms involved had positive economic effects, due to the diversification of crops and the possibility to process and sell in the market high-quality products.

The consortium Strizzaisemi, today, counts for more than 300 hectares cultivated with oleaginous crops.

Lessons & Recommendations

- ❑ The interaction between partners along the implementation of the project, and in particular for the definition of cultivation protocols is considered a success factor, because it allowed the identification of practices tailored for the specific characteristics of the area considered.
- ❑ The coordination of all partners was considered a difficult task, and required a lot of effort and work. This was also related to the long implementation phase of the project (four years), which needed a regular animation action of the lead partner to keep unchanged the commitment to the project of all partners.

Context

The project was implemented in the province of Pisa, in Tuscany. The area, as the rest of the region, is well known to produce high quality olive oil, but also of seed oil and in particular sunflower oil which has always been a traditional product in this part of Italy. Sunflower is a high yield crop. It does not require particular attention and matches conveniently in rotation with cereal crops. Of course, production does not reach the level of the leader countries in this sector such as Russia or EU eastern countries.

Nevertheless, in the past decade the number of hectares used to grow sunflower and rape seed increased of 39%. High quality seed oil is more and more demanded in the market, not only to produce cosmetics and in conserve production, but also because some of them are considered good ingredients in a healthy diet. These trends suggested that the market of seed oil could offer good opportunities for development. On this basis, a number of arable farms came together in a consortium in 2010 and two years later they presented a project that could represent for them the possibility to grow as enterprises and to add value to the local production.

Objectives

The general scope of the project was to add value to the local production of seed oil and to create a working process that could integrate all actors of the supply chain, from the production of raw materials to selling the final products into the market.

To reach this general scope, specific objectives were set, as follows:

- to analyse the seed oil market in order to identify the most viable development opportunities for actors involved in the project;
- to add value to the local sunflower oil, focusing on producing high quality oil with organoleptic properties suitable to be used in a healthy diet;
- to grow other oleaginous crops as to produce additional high-quality oils suitable for human consumption and to be used also in the cosmetic industry;
- to integrate the production of seed oil with that of animal feedstuffs, focusing always on high-quality products;
- to organise all actors involved in the supply chain and create economic benefits for the entire area and not only for few enterprises.

The project had a strong focus on innovation, aiming to introduce new products and new processes. For this reason, the project leader considered strengthening relations with different actors of the supply chain and between them, as well as with the scientists involved in the project who were of particular importance for the success of the project itself. As a result, the creation of a strong partnership that could continue also after the end of the project it could be considered as a horizontal objective of the project, which influenced all implementation phases.

Activities

The project implementation was articulated in six main blocks of activities, summarised in the following table.

Phase	Activities implemented	Partners involved	Timing
1	Identification of all partners interested and official set-up of the partnership.	The consortium Strizzaisemi was responsible for the implementation of this phase, that started already before the project approval;	2011
2	Selection of the additional oleaginous crops to be planted and running cultivation trials.	Nine local farms were involved. Conventional, organic and integrated farms were involved in the projects and trials were run in all of them for different products. The farms were assisted in these activities by the consortium and by the University.	2011-2014
3	Development and testing of new products and processes, including investigation about the most promising marketing channels for the new products.	The consortium Strizzaisemi was the lead partner of this phase of activities in close cooperation with the University of Pisa and the farms.	2012-2014
4	Analysis of the supply chain.	Research center on Agri-environment "Enrico Avanzi" of the University of Pisa	2012
5	Management of the products initially produced in the Italian commodity exchange (Borsa Merci Telematica Italiana BMTI); training of farmers to continue managing the products within the BMTI.	The company Geostudio srl was mainly responsible for this block of activities, in close cooperation with farms.	2013-2014
6	Dissemination of results	Italian confederation of farmers, Tuscany office.	2014-2015

Cultivation trials and selection of oleaginous crops

The nine farms partners of the project carried out these activities with the assistance of the consortium and of the University of Pisa. Flax, safflower, sesame and rape seed were the crops selected for the trials together with sunflower. The farms are in plane and hilly areas; this allowed evaluating which are the optimum conditions for growing the selected crops. This phase of the activities was strongly related to phases 4 and 5. The results of the cultivation trials of course influenced the experiments on new products and processes.

Development and testing of new products and processes

This phase was the longest and the most complex, being related to the growing seasons of the crop selected. The activities implemented included the development of:

- i) **high-quality seed oil for human consumption**, with different processing techniques, mainly cold pressing, and without the use of any chemical product;
- ii) **production of feeding cakes** from the residues of the seed pressing;
- iii) **new management procedures**, particularly related to the storage of the raw materials. While all farmers involved had already some experience in growing these crops (or at least some of them), they were not aware of any procedures needed to store properly the seeds after harvesting, in the view of using them for producing oil for human consumption. Several chemical analysis to identify the best processing techniques that enabled to enhance the organoleptic characteristics of the products were undertaken during the four years of activities.

The selection of the right equipment and the training of farmers were two important elements of this phase of work. A detailed four-year business plan was prepared to evaluate the economic performance of the production of oil seeds and feeding cakes. This helped the beneficiaries to better estimate the cost-benefits of the new products and processes used and to introduce some adjustments when needed. Finally, the work on the development of new products was complemented by a specific research to identify the most viable market channels for them.



Market analysis

This block of activities included an analysis of the reference market, which included also a detailed research about the cultivation techniques used for the selected crops. The findings of this research were shared with farmers involved in the trials and thanks to this constant interaction it became possible to prepare specific production guidelines and protocols, tailored to local conditions

Main Results

The implementation of the project was overall successful. Two innovative products were obtained and considered successful, namely: high-quality flax and safflower oil for human consumption; flax and safflower feeding cakes. In addition, a specific packaging to better preserve the organoleptic qualities of the flax oil was developed.

In terms of environmental effects, the definition of the cultivation protocols allowed to improve the crop rotation, enhancing soil fertility thanks to the introduction of pioneer crops. Furthermore, farmers could count on additional options for the rotation, using also agricultural techniques with a low environmental impact, such as for example the integrated techniques. Finally, these new crops when used adequately in the rotation enable to reduce the use of pesticides because they naturally decrease the presence of weed.

Looking at the economic effects of the projects, all farms involved had positive effects, in terms of viability, related to the diversification of crops and the possibility to process and sell in the market high-quality products. In addition, the organisation of the short supply chain and the definition of transparent cultivation and management protocols contributed to ensure higher profits for all actors involved.

The consortium Strizzaisemi, created within the project, started officially its activities in 2014. Today, it counts for more than 300 hectares cultivated with oleaginous crops and its products are sold also on-line.

Only the cultivation of sesame was not successful and it was decided to abandon it. The reason of this failure was mainly related to the not favourable conditions in the area selected for growing this crop, combined with difficult weather conditions, that affected this crop more than what happened with the others.

In terms of dissemination activities, communication materials, such as brochures, leaflets, newsletters, articles, were prepared and disseminated. In addition, specific seminars, demonstrative days, focus groups with farmers and processors were organised to disseminate the results. At the end of 2014 a final conference to present the results of the project at national level was organised.



Key lessons

The interaction between partners along the implementation of the project and in particular for the definition of cultivation protocols is considered a success factor, because it allowed the identification of practices tailored for the specific characteristics of the area considered. Transferring such an example would need the same attention to adopt the more suitable farming practices for the area chosen.

The coordination of all partners was considered a difficult task, and required a lot of effort and work. This was also related to the long implementation phase of the project (four years), which needed a regular animation action of the lead partner to keep unchanged the commitment to the project of all partners.

Additional sources of information

<https://www.strizzaisemi.it/>