



VOICE

Vegetable Oil Initiative for a Cleaner Environment



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CO-ORDINATOR

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The **VOICE-LIFE** project aims at investigating the possibility to develop short energetic chains, where the main part of the added value, created by selling the energy, remains to the farmer.

The project will try to reach the following target through research, demonstration and training activities:

- stimulating EU, National and Regional/Provincial (Tuscany, Florence) authorities towards the use of pure Vegetable Oil (VO, also called Pure Plant Oil, PPO) for clean transports and energy generation;
- raising the awareness of these competent bodies, so to create favourable conditions for the establishment of incentive measures in Italy (as already happens in other EU Countries, and not yet in Italy for VO);

- showing the technical and economical feasibility of extracting and using vegetable oils (other than rape oil) in converted/adapted technologies by adopting innovative system chains and technologies under Southern EU conditions ;
- disseminating the results towards farmers, directly involved in the present action, and creating new source of income in the rural areas;
- developing proposals for National and Regional strategies, thus supporting policy measures to be implemented according to the EU Biofuel Directive
- spreading the results and defining a strategy for the Southern EU and MED Countries by Italian and Portuguese partners.

The research activities in the project will be focused to adapt engines for power and heat production and to convert several tractors/vehicle to work with pure vegetable oil, as well. In order to promote new growth opportunities in the agricultural sector, feasibility of short agri-energy chains will be demonstrated through the VOICE project. The farmers involved in the project will have the opportunity to produce a rather traditional feedstock (the oil seeds), easily transform it into a highly added value product (vegetable oil) in decentralized mills and produce electrical/thermal energy (in converted engines). The farmers can sell either the seeds or the oil but, is evident, that the main added value is in the energy generation. It is because of this reason that the size of the power systems to be converted have to be compatible with the available land. During 39 months of the project, efforts will be made to modify 50 kW_{el} endothermic engines, 30 kW_{el} MGT and two 5 kW_{el} engines. Some tractors will also be modified.

In addition, analysis of various low-input oil crops suitable for the Southern EU climate, selection and cultivation of the most interesting crops (focusing on sunflower oil varieties), other cultivations (i.e. *Jatropha Curcas*), harvesting and collection of crops (also considering mixed-cropping), extraction of oil at both farm and industrial level, valorisation of the co-product press cake (for animal feed or other uses), use of the oil in innovative adapted engines for transports and in small scale energy generation systems, will be undertaken.

Economic analysis of the whole chain (considering separately decentralized farm extraction, industrial extraction and use in engines for transports or for energy generation), analysis of fuel taxation under with different options and necessary measures to overcome these barriers are another important aspects to be studies. Environmental analysis of selected options, definition of a possible regional supply chain, support to the development of a National policy for the promotion of vegetable oil direct use (not biodiesel) with possible environmental as well as socio-economic benefits for the farmers, will also be evaluated.

Dissemination and training (directly addressing farmers, which could be at the same time biofuel producers and end-users of the biofuel for energy and transports in agriculture) to Southern EU and MED Countries will complete the project Workprogramme.

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