Transforming olive groves into carbon sinks [1]

Working closely with farmers, an award-winning LIFE project has reduced the environmental footprint of the olive, one of Greece's most important agricultural products. At the same time, it has shown how changing cultivation methods can help tackle climate change.

A major source of greenhouse gas emissions, agriculture is also extremely vulnerable to the changing climate. oLIVE-CLIMA [2] set out to test new cultivation practices for olive tree crops, to find a cost-effective way of dealing with climate change. Its success saw the project crowned the winner of the LIFE Award for Climate Action [3] earlier this year.

The oLIVE-CLIMA team tried out several practical measures in 120 olive groves in the south Peloponnese and Crete. These included new pruning methods, returning chipped or shredded tree branches directly to the soil, composting the branches and olive mill by-products and applying this to the olive groves, weed management and the introduction of non-soil tillage practices.
Thanks to its efforts, the pilot sites saw a considerable increase in soil organic matter, improving the olive groves' soil fertility and reducing the need for artificial fertilisers. Boosting soil organic matter contributes to long-term storage of carbon removed from the atmosphere. It is also important for tree health, and the uptake of minerals and water, which are critical for trees under climate change-induced stress.

As the olive harvest season begins, LIFE caught up with Eftichia Kivrakidou from project leader ANATOLIKI, the development agency for eastern Thessaloniki, to find out more.

What are the benefits of oLIVE-CLIMA's methods for farmers?

The practices we introduced are more economically sustainable than their traditional counterparts. The pilot plots showed an increase in soil fertility, enhanced biodiversity and higher yields. Greater yield is particularly important when it comes to persuading farmers to adopt environmentally friendly methods. Some of those involved in the project said they have better results with oLIVE-CLIMA's techniques and have adopted them long term.

You also had a big impact on policy. How exactly?

We found that shredding the pruned wood and returning it to the soil of the olive groves, either directly or after composting, has direct benefits for the grove, the farmer and the environment. Because of this, the government decided to revise Greece's rural development programme to give olive farmers financial incentives to adopt the practice. It will provide funding to buy the machinery needed, while a grant for wood shredding (per hectare) is also under discussion.

In addition, oLIVE-CLIMA worked with national ministries on the possibility of using olive mill waste as a fertiliser. Thanks to our data, legislation was amended in Crete to allow wastewater from olive mills to be used on farmland under certain conditions.
The project also had an impact on EU agricultural policy, on the Product Environmental Footprint Category Rules for olive oil, showing the potential of olive trees for mitigating climate change by storing carbon in the soil and in the tree biomass.

What are you working on now?

The partners are continuing to demonstrate the project's practices, in parallel with monitoring the soil's agro-ecosystem functions, to improve the sustainability of these measures.

We are also working on certification of the cultivation methodology, looking to create an ecolabel for olive tree products.

See also

Publication: Ready, steady, green! LIFE helps farming and forestry adapt to climate change [4]

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[1] https://ec.europa.eu/easme/en/news/transforming-olive-groves-carbon-sinks
[2] http://www.oliveclima.eu/en/
[3] https://ec.europa.eu/info/news/eu-celebrates-best-projects-nature-environment-and-climate-action-2019-may-17_en
[4] https://op.europa.eu/en/publication-detail/-/publication/8119493f-db52-11e9-9c4e-01aa75ed71a1/language-en/format-PDF/source-108551708