

Title: Successional Agroforestry's central role in a project of rural development and climate change adaptation in Alentejo, Portugal

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Agroforestry for the Green Deal transition. Research and innovation towards the sustainable development of agriculture and forestry
Abstract

Corresponding Author:
email

ricvl@ci.uc.pt
ricveigaleitao@gmail.com

Ricardo Leitão^{1,2}, Pedro Nogueira³, António Coelho³, Marta Cortegano³, Pedro Mendes-Moreira¹

¹ Polytechnic of Coimbra - College of Agriculture, Bencanta, Portugal

² University of Coimbra - Centre of Functional Ecology, , Portugal

³ Associação Terra Sintrópica, Mértola, Portugal

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Abstract

Mértola is a municipality located in Alentejo, in the SW of Portugal, with a semi-arid climate, whose actual climate scenarios predict a marked reduction in precipitation (to near 300 mm in the year 2100) and is amongst the regions in Europe most susceptible to desertification. Mértola is the Portuguese municipality with the 2nd lowest demographic density (4,8 inhabitants/km² in 2021) and its socioeconomic indicators are generally very low, with a marked period of decline and rural exodus in the last 50 years (García-Delgado et al. 2020).

The project *Mértola, a Lab for the Future* started to be designed in 2017 and is a project of agroecological transition with climate change adaptation, desertification combat and rural abandonment reversal as its major goals. With a focus in food security the project aims to give to local community the power and leadership to guarantee sustainability to all components of the local food system: ecological, economic and social (Cortegano et al. 2021).

Agroforestry has been at the heart of the project since the beginning. Starting from an organic aromatic plant production background (since 2008) and later with organic vegetable production (2014 onwards), the project farms "Horta da Moura" and "Horta da Malhadinha" were the testing grounds for the proposed agroecological transition. One of the first actions promoted by project (in 2017) was the gradually conversion of all organic vegetable agriculture fields to Successional Agroforestry Systems

(SAFS). This strategy, now followed by other farmers in the region, was an attempt to reduce water used for irrigation and to protect vegetable crops from excessive high temperatures and sunlight exposure during summer peak, while promoting soil restoration and natural resources conservation. Mértola's soils have typically small thickness of horizons and low content of organic matter, and consequently low fertility and a low capacity for water storage. With the inclusion, across the vegetable production fields, of rows of fruit and multifunctional trees and shrubs (Figure 1) (including regional autochthonous species) SAFS are currently providing an environmental and economically sustainable certified organic food production. "Horta da Malhadinha" is nowadays the new *Agroecological Centre* (2019) headquarters and a living laboratory used for demonstration, experimentation and training purposes, besides the regular production of vegetables, aromatics and fruits to be commercialized by the *Local Food Network*. This network, one of the project's original goal to provide most of food supply for Mértola's municipality, was consolidated in 2020 as a response to the pandemics and includes other farmers, local associations, and different institutions responsible for collective catering canteens and consumers.

In addition, sessions with *Local Food Network* partners and other local farmers are regularly promoted by the project, where SAFS and local traditional agriculture practices are discussed with the purpose of co-creation of knowledge and its dissemination in a peer learning process. Also, as a result of the arriving of new farmers with the project several training initiatives and with the popular volunteers program in the *Agroecological Centre*, all directly related to SAFS, the settlement of young people in Mértola is slowly rising.

References:

Cortegano M, Dias RC, Guedes Vidal D, Seixas PC (2021) 'Mértola, a lab for the future' as a transformational plan for the mediterranean semi-arid region: A learning case based on landsenses ecology. *International Journal of Sustainable Development and World Ecology* 28:612–621. <https://doi.org/10.1080/13504509.2021.1920059>

García-Delgado FJ, Martínez-Puche A, Lois-González RC (2020) Heritage, Tourism and Local Development in Peripheral Rural Spaces: Mértola (Baixo Alentejo, Portugal). *Sustainability* 2020, Vol 12, Page 9157 12:9157. <https://doi.org/10.3390/SU12219157>



Figure 1. SAFS field (900 m²) organic certified from the Agroecological Centre headquarters "Horta da Malhadinha" focused on bio-intensive vegetable production in the alleys of mixed fruit and multifunction tree rows (November 2020). Implementation date November 2019. (Photography by Pedro Nogueira)