

## Malta

### Water use efficiency

#### Location

Triq San Pietru

#### Programming period

2014 – 2020

#### Priority

P5 – Resource efficiency & climate

#### Measure

M04 – Investments in physical assets

#### Funding

Total budget 299 860.53 (EUR)

EAFRD 112 447.70 (EUR)

National/Regional 037

482.57 (EUR)

Private 149 930.26 (EUR)

#### Project duration

2018 – 2020

#### Project promoter

Charles Muscat

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## Climate adaptation and modernisation funding for a Maltese family farm.

### Summary

A Maltese fruit and vegetable producer used CAP support for co-financing an investment project that constructed a new rainwater reservoir and installed computerised 'fertirrigation' and fog spray systems in three greenhouses to modernise productivity and help adapt to climate change risks.



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### Project Results

Modernisation of the farm improved its resilience to climate change and increased business efficiency.

The farm's rainwater catchment capacity increased by 80%, and water consumption decreased by 25%.

Overall profits increased 15% more than anticipated.

### Lessons & Recommendations

- Adaptation and mitigation actions by agri-food businesses helps to protect the resilience of EU food supplies
- Project planning should include effective forecasting to identify and redress risks of project delays.

## Context

Charles Muscat is a full-time farmer who, together with his family, manages 3.52 hectares of land in the North-West Iġgarr area of Malta island, Malta. Mr Muscat produces fresh vegetables for local consumption, including greenhouse and open field tomatoes, melons, aubergines, zucchinis, potatoes, and other vegetables. The business currently manages three greenhouses which cover an area of circa 8 000 m<sup>2</sup>. Climate change poses a risk to water availability in Malta and the farm identified an opportunity to improve the resilience of its essential water supplies.

## Objectives

This project aimed to modernise and improve the competitiveness of a family farm holding by capitalising on water resource efficiency, innovation in greenhouse production, and business automation.

## Activities

The project involved three main components:

- The construction of a water reservoir to collect rainwater. The new water reservoir is the fourth reservoir owned by the farm. It brings their rainwater collection capacity up to over 4.5 million litres.
- The installation of computerised 'fertirrigation' systems in each of the three greenhouses managed by the farm. Each fertigation unit can be operated manually or automatically to calculate and accurately mix different fertilisers from four different tanks. The system delivers the exact dose of fertiliser needed by the crops, as well as the exact amount of water, which increases water consumption efficiency and reduces fertiliser costs.
- The installation of three fog spray systems in the greenhouses. The fog spray systems are used to quickly and efficiently irrigate the greenhouses with a fine mist. During the hotter months, the fog system is used to reduce the temperature and increase the humidity in the greenhouses, which also provides better conditions for pollination.

Amongst other machinery and equipment, this project enabled the farm to acquire:

- a battery-operated greenhouse working lifter to safely access high rows of tomatoes;
- a tractor-mounted mulcher shredder to reintegrate

waste crop residues into the soil profile;

- two submersible pumps that top up the farm's existing reservoirs from the new reservoir.
- two handheld rotary cultivators for areas where a tractor cannot access;
- two knapsack sprayers that are used in open fields to apply targeted amounts of plant protection products and foliar fertiliser.

## Main results

The rainwater catchment capacity of the farm holding increased by 80% and water consumption decreased by 25%.

Overall profits increased 15% more than anticipated due to: reduced fertiliser and water costs; improved pollination thanks to the fog spray systems; and the use of rainwater for tomato production which produces higher quality fruit.

The modernisation and increased automation of the three greenhouses requires less manual input thereby reducing business risks from human error.

Quote: *"With a normal rain season of 550mm - which is the norm for Malta - I almost manage to irrigate all of my greenhouses with rainwater. This water is valuable for my greenhouse tomato operation as it is of very good quality. Thanks to the computerised fertirrigation systems, I can now calculate and give the exact doses of fertilizer with the irrigation water."*

## Key lessons

Climate change represents a long-term threat to food supplies and agri-food businesses. Adaptation and mitigation actions by agri-food businesses helps to protect the resilience of EU food supplies.

Project planning should include effective forecasting to identify and redress risks of project delays.