



Co-funded by the
Erasmus+ Programme
of the European Union

PRODUCTION OF FEEDSTOCK FOR FOOD AND PATTERNS AND AGROFORESTRY SYSTEMS - UOF

CORRESPONDING MODULE 2

Introduction

Multiple-Cropping and Agroforestry Systems: Farming systems that are based on diversification of land use and production are either systems combining the growth of different annual crops, such as *multiple-cropping*, or systems mixing annual and perennial crop species, i.e. *agroforestry*. *Multiple-cropping* patterns are described by the number of crops per year and the intensity of crop overlap. *Double (triple) cropping* refers to systems with two or three crops planted sequentially with no overlap in the growth cycle. *Intercropping* indicates that two or more crops are planted at the same time, or at least planted so that significant parts of their growth cycles overlap. *Relay cropping* describes the planting of a second crop after the first crop has flowered; in this system, there may be some competition for water or nutrients. *Mixed cropping, strip cropping, associated cropping, and alternative cropping* represent variations of these systems.

Description

It is a broiler farm with a capacity of 30,000 chickens. The farm is located in Carretera GR-6103, La Calahorra, Granada, Andalucía and was built and put into operation in 2018.

The chickens are fattened to a certain weight on the farm. Then, the chickens are then sold to another company, which is responsible for slaughtering, packaging and placing them on the market.

This farm has a significant energy consumption, so it has installed a 27 kW solar photovoltaic plant on the roof of the industrial building, as can be seen in the pictures below. The installation also has an energy storage system with batteries, which offer a storage capacity of up to 100 kWh.

This renewable energy installation avoids the emission of 17.8 tons of CO₂ into the atmosphere. In addition, the energy produced is free of charge for the entrepreneur.

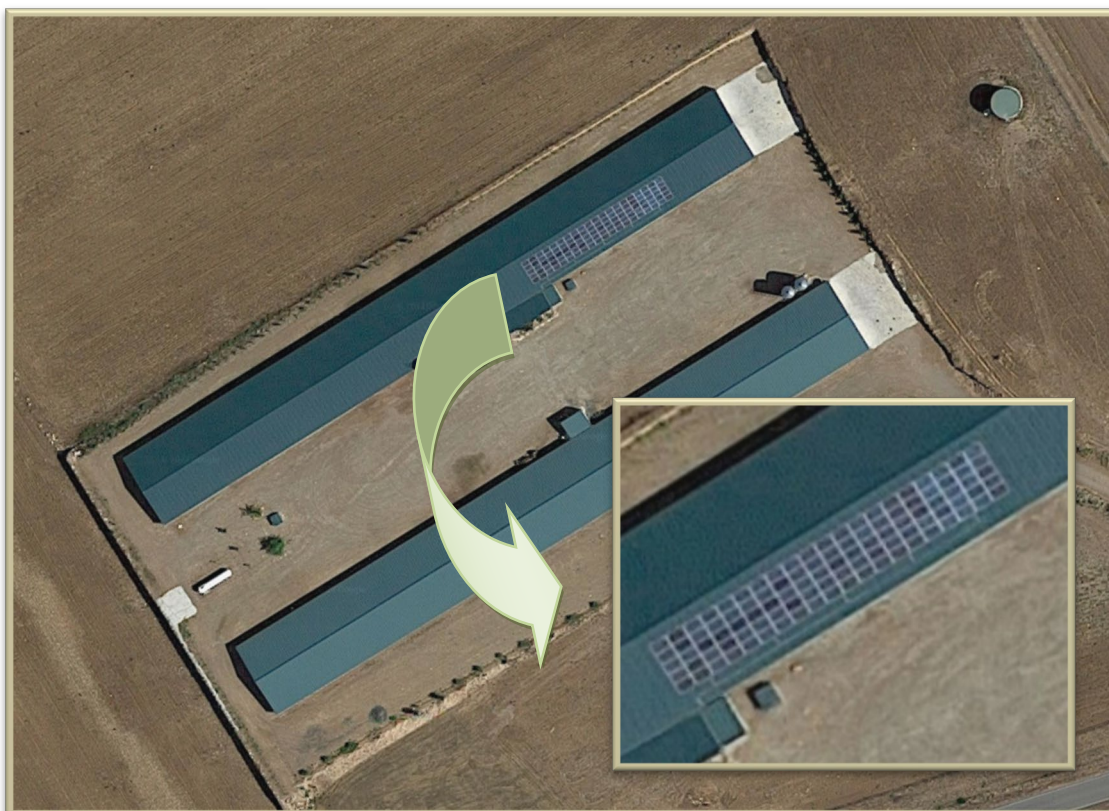


Image 1: General view of the farm



Image 2: General view of the farm



Image 3: Inverters and voltage and voltage regulators



Image 4: Battery system



Advantages and challenges

This company wants to install devices that use renewable biomass as a source of energy for heating, such as high-efficiency cookers or pellet boilers

The advantages and disadvantages of the photovoltaic installation are as follows:

- Advantages:
 - Economic savings
 - Removable source energy
 - Reduction of CO2 emissions
 - Low maintenance of the installation
- Disadvantages:
 - High initial investment
 - Variable energy source - Depends on weather conditions
 - Need to install batteries to become independent from the electricity grid

Main data

- This farm consists of two buildings, each measuring 140 metres by 15 metres. The surface area of each building is 2100 square metres, so the total surface area of the farm is 4200 square metres.
- The total number of broilers that can be reared at the same time is 30,000.
- The solar photovoltaic system has an output of 27 kW. In addition, the farm has a 100 kWh battery storage system.
- With this installation the farm covers its energy needs. In addition, it has a generator set installed for exceptional or emergency cases.

Further Information

- [Instalación solar fotovoltaica aislada para granja de pollos en Charches \(Granada\) Greening - YouTube](#)
- [GRANJA AVÍCOLA AUTOSUFICIENTE CON ENERGÍA FOTOVOLTAICA | PROultry.com, avicultura para profesionales](#)