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SUSTAINABLE CROP AND LIVESTOCK INTEGRATION



CORRESPONDING MODULE 5

Introduction

Integrated crop-livestock systems are a form of sustainable intensification of agriculture that rely on synergistic relationships between plant and animal system elements to bolster critical agroecosystem processes, with potential impacts on resilience to weather anomalies.

Sustainable intensification of agriculture aims to increase resource-use efficiency and limit expansion of agricultural land area in part by leveraging ecosystem services.

The benefits of integrating crops and livestock include:

- Reduce animal feed costs
- Reduce labor
- Improve soil health
- Increase farm biodiversity
- Reduce machinery inputs
- Additional source for plant fertility

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- Reduced pest problems
- Utilize marginal lands
- Reduce tillage
- Additional weed management strategies



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Description

General description of the CASE STUDY with information related to the questions already mentioned in section 3 of this document.

Background, types, basic information
Best practices

Rota Farm is a sustainable pig farm, based on integrated crop-livestock system. Rota is a direct farmer, who lives and manages his farm with his family: his wife Francesca and four children. The farm is located in Camagna Monferrato, a small town of 400 people in the Piedmont Hills, in the province of Alessandria, a Unesco heritage site.

By his example, Rota Farm teaches to live by "circular economy". In 1998 he took over a pig production company, which today boasts 500 females and 2,200 young. From the pig livestock it draws **sustenance and energy**.

It is one of the five farms in Italy of the "triple negative" genus, a qualification to indicate animals free of disabling diseases. An added value guaranteed by the personalized care of Animals against the mass antibiotic therapies taken through feed.

The pigs of the Rota farm are not only beasts for slaughter, but they are also an **excellent source of renewable energy**.

In 2010, they implanted a photovoltaic system to ensure **self-sufficiency**. Three years ago, a **biogas plant** was built, using sewage from pigs.

The heat produced by cogeneration is used to heat the house and farms.

The sewage tanks have been covered, no water enters, and no odors and gases come out.

Thanks to a small **separation plant**, the solid part is used to fertilize 100 hectares of fields, where cereals, peas and soybeans grow. For two years, at the edge of the land, bee-friendly essences are sown, such as phacelia and buckwheat which has a delicious flowering for bees.

With an **air conditioning system** for the barn that in winter



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works as heating. He purchased a **fast-charging station**, for public use. The column is placed outside the company and is indicated by specific phone apps.

With eight other members, Rota has established an **agricultural cooperative** and has just opened a 100 sqm store, located in the premises of the Church of Camagna.

The cooperative sell products of their own production and at zero kilometres. Rota farm is also creating a **multifunctional laboratory**.

They produce honey and use the meat of our pigs to make cold cuts. As an agricultural cooperative, we want to run a vineyard in order to offer the wine made by the farmers of Camagna".

Main objective of the institution implementing the case study and main achievements.

Good to remember information, practical information, links to other CSs.....

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Advantages and challenges

- integrated crop-livestock system
- the "triple negative" genus qualification
- photovoltaic system
- biogas plant
- separation plant to fertilize the fields
- fast-charging station for public use
- agricultural cooperative
- multifunctional laboratory

Main data

Further



Budget, main dates (investment, start of production, period of raise funding, etc.), location, module name and number, contact data when possible, institution

- In 1998 was founded the farm
- Nowadays counts 500 females and 2,200 young pigs
- a photovoltaic system implanted in 2010
- biogas plant implanted in 2019
- 100 hectares of fertilised soils
- a 63 Kwt energy and 80 Kwt thermal plant and the heat produced by cogeneration is used to heat the house and farms.

Information

..... to be completed
with links when
possible

[https://
rodaleinstitute.org/
science/crop-livestock-
integration/](https://rodaleinstitute.org/science/crop-livestock-integration/)

[https://
www.frontiersin.org/
articles/10.3389/
fsufs.2020.604099/ful](https://www.frontiersin.org/articles/10.3389/fsufs.2020.604099/ful)



ANNEX - STRUCTURE OF MODULE CONTENT TO PREPARE SLIDES

Module Name: The name of the partner: Country:

The name of the module	
Target group involved	
Current information about the topic	
Principles of the specific module	
Basic terms/measures of the module/topic	
Training materials (tasks, case studies, exercises)	
Short description of the materials	
Link of the online resources (film or video resources)	
Specific images (to support the purpose of the resources)	
Duration	
Materials	
No of Learners/Representatives	
Individual or group work	
Step by step guide	