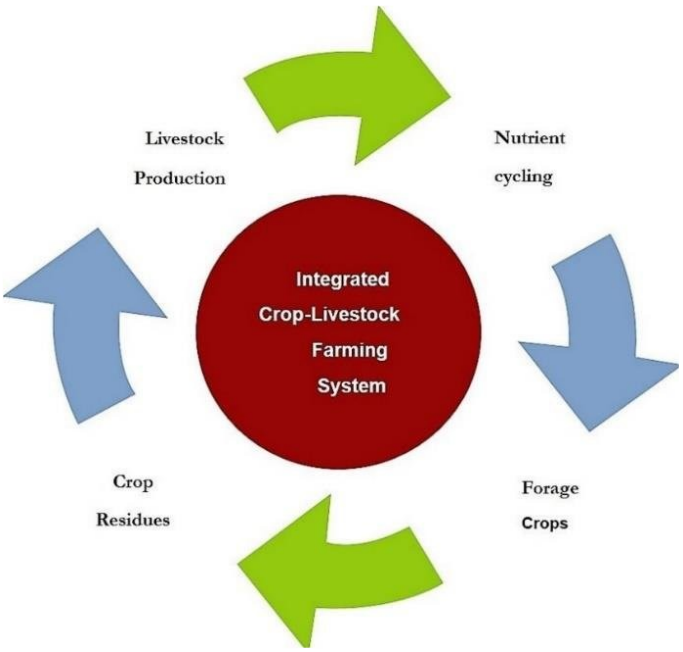
Co-funded by the Erasmus+ Programme of the European Union

SUSTAINABLE CROP AND LIVESTOCK INTEGRATION

CORRESPONDING MODULE 4



Introduction

Diversified crop-livestock systems are more productive, sustainable, and economically competitive with traditional cropping systems. Bringing grasslands into crop production has increased concerns of exposing erodible land to cultivation and reducing the sustainability of our food production system. Healthy soil, clean water, and productive crop and grasslands are essential to maintaining quality of life. Incorporating livestock production into a cropping system offers additional opportunities to recover establishment and

SUSTAINABLE CROP AND LIVESTOCK INTEGRATION

CORRESPONDING MODULE 4

termination costs associated with cover crop management. Additional benefits associated with integrating livestock into cropping systems include reduced risk of raising a single product, increased water infiltration and resistance to soil erosion, increased soil organic carbon, reduced fertilizer use from nutrient cycling.

Project Number:
2021-1-FR01-KA220-VET-00034605

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

SUSTAINABLE CROP AND LIVESTOCK INTEGRATION

CORRESPONDING MODULE 4

An overview

In times of shrinking and uncompetitive Bulgarian agriculture, two fields from this sector have been steadily on the rise over the past years. These are grain production and bio-farming. The new wave within the Common agricultural policy 2014-2020 entitled “becoming green” provides exceptional opportunities for the development of organic farming. A special group of experts and people employed in this sector are currently developing a Bulgarian policy for the best usage of the EU funds to encourage the local bio-farming. They outlined several critical fields which urgently need to receive financial aid. One of them is the organic stock-breeding. So far, only the plant-growing sector has received supplementary payments for organic development. The new national policy of organic farming recommends that the EU funds should be used for the transition from export of organic materials to manufacture of end products. This is so, because currently Bulgaria exports a huge quantity of raw organic materials which later return to Bulgaria processed and very expensive.

In Bulgaria, on widespread areas, silvopasture or forest-grassland complexes, where tree and shrub plant species are mixed with herbaceous forage crops ("grass mixtures", etc.), were also created. These areas are used for freely grazing animals.

Project Number:
2021-1-FR01-KA220-VET-00034605

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

SUSTAINABLE CROP AND LIVESTOCK INTEGRATION

CORRESPONDING MODULE 4

Organic farming

Organic farming is an agricultural system that uses ecologically based pest controls and biological fertilizers derived largely from animal and plant wastes and nitrogen-fixing cover crops. Modern organic farming was developed as a response to the environmental harm caused by the use of

Project Number:
2021-1-FR01-KA220-VET-00034605

SUSTAINABLE CROP AND LIVESTOCK INTEGRATION

CORRESPONDING MODULE 4

chemical pesticides and synthetic fertilizers in conventional agriculture, and it has numerous ecological benefits. Compared with conventional agriculture, organic farming uses fewer pesticides, reduces soil erosion, decreases nitrate leaching into groundwater and surface water, and recycles animal wastes back into the farm. These benefits are counterbalanced by higher food costs for consumers and generally lower yields. Indeed, yields of organic crops have been found to be about 25 percent lower overall than conventionally grown crops, although this can vary considerably depending upon the type of crop. The challenge for future organic agriculture will be to maintain its environmental benefits, increase yields, and reduce prices while meeting the challenges of climate change and an increasing world population.

Project Number:
2021-1-FR01-KA220-VET-00034605

SUSTAINABLE CROP AND LIVESTOCK INTEGRATION

CORRESPONDING MODULE 4

The model biofarm

The model biofarm is located on the land of Topolovo village, Madjarovo municipality, Haskovo region. It has been certified since 2008 and is used for demonstrations of organic farming practices and training in organic farming during the period of the New Thracian Gold Project (NTZ) project and after its completion. This model farm for organic farming has a key role in this project and aims to support the Eastern Rhodope region by combining organic farming,

natural grazing and ecotourism.

The farm applies the principles of organic

References:

1. https://agronomy.unl.edu/range-pasture-forages/integrated-crop-livestock-systems
2. https://www.britannica.com/topic/organic-farming
3. https://bnr.bg/en/post/100201611/bulgarian-bio-farming-with-new-opportunities-by-2020
4. https://www.euractiv.com/section/agriculture-food/news/sustainable-farming-offers-a-boost-to-rural-bulgarian-communities/
5. https://newthraciangold.

SUSTAINABLE CROP AND LIVESTOCK INTEGRATION

CORRESPONDING MODULE 4

farming - it does not use chemical synthetic products such as mineral fertilizers to nourish the soil, pesticides for plant protection, GMOs, etc; improves soil fertility by composting manure and legumes and recycling organic waste; applies a greater variety of plant species and varieties – flexibility is created in disease and insect protection and brings alternative incomes. Resistant varieties are used to prevent disease and compete with weeds, natural pest enemies (ladybugs, golden eyes, predatory mites), pruning and weeding of the rows are also used.

eu/ cmspage.php? id=57&lng=bg

SUSTAINABLE CROP AND LIVESTOCK INTEGRATION

CORRESPONDING MODULE 4

In organic livestock farming, only feed that is organically certified is used. The waste fertilizers are composted by the means of California worms and are used in organic horticulture to obtain sustainable yields. The animals are fed on natural pastures, so their freedom is not violated; animals express their natural behavior, stress is minimal and meat and milk quality is better.

SUSTAINABLE CROP AND LIVESTOCK INTEGRATION

CORRESPONDING MODULE 4

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	

Project Number:
2021-1-FR01-KA220-VET-00034605

purpose of the resources)	
Duration	
Materials	
No of Learners/Representatives	
Individual or group work	
Step by step guide	