MODULE

INNOVATIVE SUSTAINABILITY COMPETENCE

Unit 3 I Activity 1 **Sustainable competence knowledge**

180min

• Pen and blank paper

DESCRIPTION

By implementing this activity, you can increase your knowledge of sustainable competences in agriculture, which can help you to improve the sustainability of your farm.

Co-funded by the European Union

This project has been funded with support from the European Commission.This publication reflects the views only of the ACORN consortium, and the Commission or Agence Erasmus+ France/Education Formation - 2E2F cannot be held responsible for any use which may be made of the information contained therein.
Project number: 2021-1-FR01-KA220-ADU-000033693

acorn

www.acorn-europe.com

THE ACTIVITY

1. Self-Assessment: Begin by doing a self-assessment of your current knowledge of sustainable competences in agriculture. Identify areas where you feel confident and areas where you would like to improve your knowledge.
   Self assessment questions:

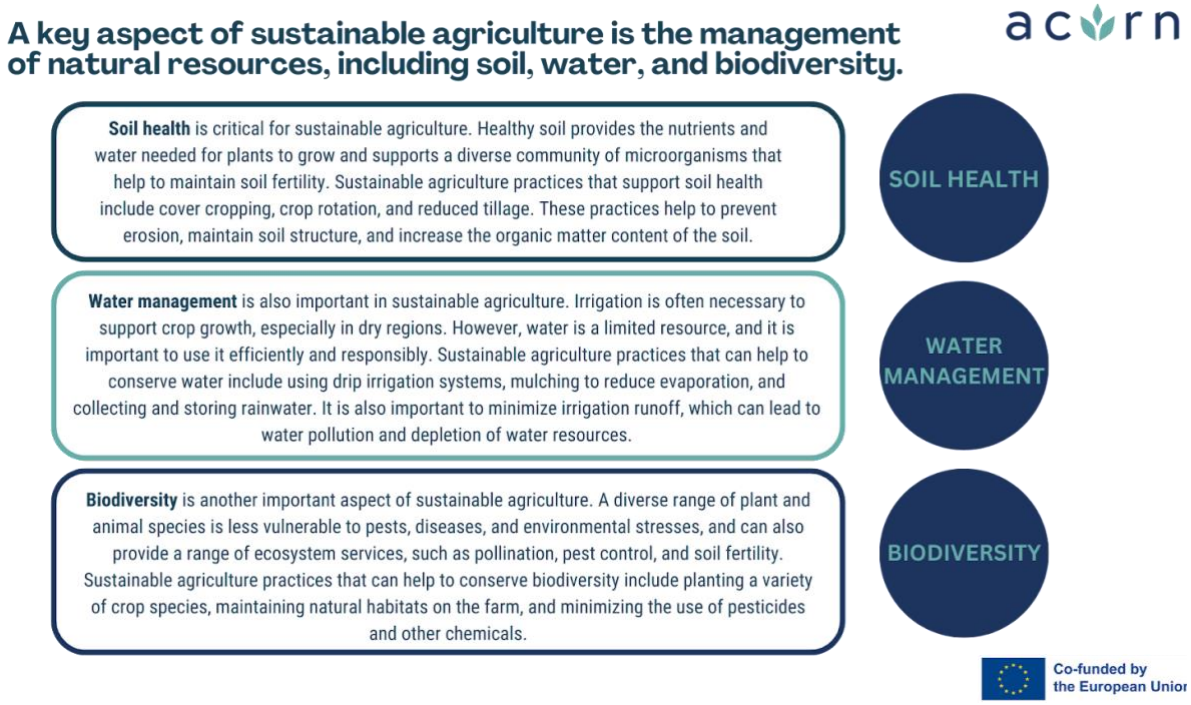
- How well do you understand the concepts of sustainable agriculture and sustainable farming practices?
- Are you familiar with renewable and non-toxic inputs in agriculture, and how they can be used to reduce environmental impacts and improve crop yields?
- Have you ever used precision agriculture technologies, such as precision planting or precision irrigation, on your farm?
- Are you aware of alternative forms of energy that can be used on a farm, such as solar or wind power?
- Do you have experience in diversifying your crops and adding value to your products and services?
- How well do you understand the social and environmental impacts of agriculture and how they can be minimised?
- Are you familiar with ways to engage with and support local communities, and promote fair and ethical working conditions for farmers?
- Are you aware of any sustainable certification schemes for farms, and have you ever considered certifying your farm?
- Are you familiar with the concept of regenerative agriculture and how it differs from sustainable agriculture?
- Are you familiar with the concept of agroecology and how it can be used to improve the sustainability of farms?

Research: *Research sustainable competences in agriculture, such as sustainable farming practices, renewable and non-toxic inputs in agriculture, precision agriculture technologies, alternative forms of energy for farmers, diversifying and adding value to products and services, knowledge of the social and environmental impacts of agriculture, and engaging with and supporting local communities.*
Reading: *Read articles, books, or other resources on sustainable competences in agriculture. Look for information from reputable sources such as government agencies, universities, and non-profit organisations. Make a list of the different concepts, practices and methods that seem most promising and relevant to your farm.*
Quiz*: Take a quiz or test on sustainable competences in agriculture. There are many resources available online that can help you to test your knowledge and identify areas where you need to improve.*
Case Study*: Read case studies on sustainable agriculture, and analyze how the farmers in the case studies have implemented sustainable competences on their farms.*
Mind Map*: Create a mind map that illustrates the different sustainable competences in agriculture, and how they are interrelated. This can help you to understand the big picture and see how different practices and methods fit together.*
Reflection*: Reflect on your learning and identify areas where you feel you have improved your knowledge. Identify areas where you would still like to improve and set goals for continuing your education.*

Co-funded by the European Union
This project has been funded with support from the European Commission.This publication reflects the views only of the ACORN consortium, and the Commission or Agence Erasmus+ France/Education Formation - 2E2F cannot be held responsible for any use which may be made of the information contained therein.
Project number: 2021-1-FR01-KA220-ADU-000033693
acorn
www.acorn-europe.com

THE THEORY

Sustainable competences in agriculture refer to the skills and knowledge that are needed to produce food and other agricultural products in a manner that is environmentally, socially, and economically sustainable. These competences can include a range of technical skills, such as the use of precision agriculture technologies, as well as broader knowledge of sustainable farming practices and the social and economic context in which agriculture takes place.



Specific examples of sustainable competences in agriculture include:

Knowledge of sustainable farming practices:

It is an important aspect of sustainable agriculture. Sustainable farming practices are those that aim to produce food in a manner that is environmentally, socially, and economically sustainable. These practices can help to conserve natural resources, minimize waste and pollution, and support the health and well-being of farmers and broader community.

Some examples of sustainable farming practices include cover cropping, crop rotation, and integrated pest management. Cover cropping involves planting a cover crop, such as a legume or grass, between main crops to improve soil health and prevent erosion. Crop rotation involves planting a variety of crops in a specific sequence over a number of years, to help build soil fertility and reduce the need for synthetic inputs. Integrated pest management involves using a range of techniques, such as cultural, biological, and chemical controls, to reduce pest populations, rather than relying solely on chemical pesticide.

Knowledge of renewable and non-toxic inputs:

Renewable inputs are those that can be replenished over time, such as compost and mulch, whole non-toxic inputs are those that do not contain harmful chemicals and are safe for human and animal health.

Co-funded by the European Union
This project has been funded with support from the European Commission.This publication reflects the views only of the ACORN consortium, and the Commission or Agence Erasmus+ France/Education Formation - 2E2F cannot be held responsible for any use which may be made of the information contained therein.
Project number: 2021-1-FR01-KA220-ADU-000033693
acorn
www.acorn-europe.com

Using renewable and non-toxic inputs can help to reduce the environmental impacts of agriculture, as they are less likely to contribute to pollution and waste. They can also help to protect the health of farmers and consumers, as they do not contain potentially harmful chemicals.

Examples of renewable and non-toxic inputs in agriculture include compost, mulch, and natural pest controls, such as predators and parasites. Compost is a soil amendment made from organic matter, such as food waste, yard waste, and animal manure, that has been decomposed. It helps to improve soil structure, increase the organic matter content of the soil, and provide nutrients for plants. Mulch is a layer of material, such as wood chips or straw, that is spread over the soil to help retain moisture, suppress weeds, and regulate soil temperature. Natural pest controls are living organism, such as predators, parasites, and pathogens, that can be used to control pest populations in a more sustainable manner than chemical pesticides.

Having knowledge of renewable and non-toxic inputs can help farmers and other agripreneurs to produce food in a more sustainable manner. It is also important for policy makers, researchers, and broader community to support and encourage the use of these inputs, to help reduce the environmental impacts of agriculture and protect the health of farmers and consumers.

Ability to use precision agriculture technologies:
Precision agriculture involves the use of technologies, such as GPS-guided equipment and sensor-based monitoring systems, to improve efficiency and reduce waste in farming operations.

One key advantage of precision agriculture technologies is that they can help farmers to apply inputs, such as fertilizers and pesticides, more precisely and at the right time, reducing the risk of overuse and waste. They can also help farmers to optimize irrigation, by providing real-time data on soil moisture levels and crop water needs. This can help to conserve water and reduce the risk of irrigation runoff, which can lead to water pollution and depletion of water resources.

In addition to improving efficiency and conserving resources, precision agriculture technologies can also help to increase crop yields and improve the quality of agricultural products. They can provide real-time data on crop health and growth, allowing farmers to respond quickly to any problems that may arise.

Having the ability to use precision agriculture technologies is important for farmers and other agripreneurs who are looking to increase efficiency and sustainability in their operations.

Knowledge of alternative forms of energy:
Agriculture is a major energy user, and it is important to explore ways to reduce energy use and incorporate more sustainable forms of energy into farming operations.

Some examples of alternative forms of energy that farmers can use include solar power, wind power, and bioenergy. Solar power involves using photovoltaic panels or other technologies to convert sunlight into electricity. It can be used to power farm buildings, irrigation systems, and other equipment. Wind power involves using wind turbines to generate electricity. It is most effective in areas with strong and consistent wind, such as coastal regions or mountainous areas. Bioenergy involves using organic matter, such as plant material or animal manure, to generate electricity or heat. It can be an especially useful form of energy for farmers, as it can help to utilize waste materials and reduce the need for fossil fuels.

Co-funded by the European Union

This project has been funded with support from the European Commission.This publication reflects the views only of the ACORN consortium, and the Commission or Agence Erasmus+ France/Education Formation - 2E2F cannot be held responsible for any use which may be made of the information contained therein.
Project number: 2021-1-FR01-KA220-ADU-000033693

acorn
www.acorn-europe.com

Having knowledge of alternative forms of energy can help farmers and other agripreneurs to reduce their energy use and carbon footprint, and contribute to a more sustainable agriculture industry. It is also important for policy makers, researchers, and the broader community to support and encourage the adoption of alternative forms of energy in agriculture, to help reduce the sector's reliance on fossil fuels and mitigate the impacts of climate change.

Ability to diversify and add value to products and services:
Diversification refers to the practice of expanding the range of crops or products that a farm produces, in order to reduce risk and increase income. Adding value to products and services involves creating higher-value products or services, such as through processing or branding, in order to increase profits.

There are many ways that farmers can diversify and add value to their products and services. Some examples include:
Growing specialty crops: Specialty crops are niche crops that are in high demand, such as heirloom vegetables, artisanal cheeses, or medicinal herbs. By growing specialty crops, farmers can often command higher prices for their products.
Adding value through processing: Processing can involve activities such as drying, milling, or packaging, and can help to increase the value of agricultural products. For example, a farmer who grows grains can add value by milling the grains into flour and selling it as a higher-value product.
Developing branded products: Creating a brand and marketing products under that brand can help to increase the perceived value of agricultural products. This can involve developing a logo, packaging design, and marketing strategy to differentiate the products from those of competitors.
Offering value-added services: Farmers can also add value by offering services in addition to their products. This could include offering farm tours, hosting events, or providing educational resources.

By diversifying and adding value to their products and services, farmers and other agripreneurs can increase their profits and improve the sustainability of their operations.

Knowledge of the social and environmental impacts of agriculture, and how to minimize negative impacts and maximize positive ones:

Having knowledge of the social and environmental impacts of agriculture can help farmers and other agripreneurs to make informed decisions about their farming practices, and to minimize negative impacts and maximize positive ones.

Ability to engage with and support local communities, and promote fair and ethical working conditions:

The ability to engage with and support local communities, and promote fair and ethical working conditions, is an important aspect of sustainable agriculture. As mentioned above, sustainable agriculture involves considering the social, environmental, and economic impacts of farming practices, and striving to minimize negative impacts while maximizing positive ones. This includes supporting the well-being of farmers and other workers in the agriculture industry, and contributing to the social and economic health of the communities in which farms are located.

Co-funded by the European Union
This project has been funded with support from the European Commission.This publication reflects the views only of the ACORN consortium, and the Commission or Agence Erasmus+ France/Education Formation - 2E2F cannot be held responsible for any use which may be made of the information contained therein.
Project number: 2021-1-FR01-KA220-ADU-000033693
acorn
www.acorn-europe.com

Some ways that farmers and other agripreneurs can engage with and support local communities include:

Participating in local events and organizations: Farmers can get involved in local events, such as farmers' markets or agricultural fairs, and join local organizations, such as farm bureaus or conservation groups, to help build connections with their communities.

Providing educational resources: Farmers can share their knowledge and expertise with their communities by offering educational resources, such as farm tours or workshops. This can help to increase understanding and appreciation of agriculture and its role in the local community.

Supporting local food systems: Farmers can contribute to the sustainability of local food systems by selling their products locally, rather than relying on long-distance transportation. This can help to reduce food miles and support the local economy.

In addition to supporting local communities, it is also important for farmers and other agripreneurs to promote fair and ethical working conditions on their farms. This can involve paying fair wages, providing safe and healthy working conditions, and respecting the rights of workers.

By engaging with and supporting local communities, and promoting fair and ethical working conditions, farmers and other agripreneurs can contribute to the sustainability and resilience of the agriculture industry, and the well-being of the broader community. It is also important for policy makers, researchers, and the broader community to support and encourage these activities, to help ensure that the agriculture industry is able to meet the needs of the present and future in a sustainable manner.

Co-funded by the European Union

This project has been funded with support from the European Commission.This publication reflects the views only of the ACORN consortium, and the Commission or Agence Erasmus+ France/Education Formation - 2E2F cannot be held responsible for any use which may be made of the information contained therein.
Project number: 2021-1-FR01-KA220-ADU-000033693

acorn
www.acorn-europe.com

www.acorn-europe.com

Developed by our organizations

Co-funded by the European Union

This project has been funded with support from the European Commission.This publication reflects the views only of the ACORN consortium, and the Commission or Agence Erasmus+ France/Education Formation - 2E2F cannot be held responsible for any use which may be made of the information contained therein.
Project number: 2021-1-FR01-KA220-ADU-000033693

www.acorn-europe.com

Developed by our organizations

Co-funded by the European Union

This project has been funded with support from the European Commission.This publication reflects the views only of the ACORN consortium, and the Commission or Agence Erasmus+ France/Education Formation - 2E2F cannot be held responsible for any use which may be made of the information contained therein.
Project number: 2021-1-FR01-KA220-ADU-000033693