

Unit 14A

The Circular Economy in the Agriculture Sector

Reduction of Agricultural Carbon Footprint

1 Introduction

Unit 14A provides resources for vocational trainers seeking to incorporate the circular economy into their courses in the Agriculture sector, focusing on emissions from transportation, precision farming, renewable energy and staying local. This unit explores the importance of shifting towards renewable energy sources for farming practises and how farms can take advantage of renewable energy by hosting renewable technologies, as well as identifying appropriate precision farming techniques to reduce fuel use and increase efficiency.

2 Learning Outcomes

Knowledge	Understand approaches to reduce agricultural carbon footprint
Skills	Identify technologies and approaches that can be applied across the farming sector to reduce carbon emissions
Competencies	Apply circular economy principles for the agricultural sector in reducing carbon emissions and environmental impact.
EQF Level	This material is mainly suitable for EQF Level 4

3 Lesson Plan

Method	Description	Suggested duration in minutes (total minutes)
Brainstorming session	Brainstorming where you as a trainer write down definitions, notions and connotations ought to be used for future discussions and references. You can continue the brainstorming session with the following questions if needed: <ul style="list-style-type: none"> ● Discuss the importance of moving towards a renewable energy source and the variety of 	15



	impacts this could have to the farm and the whole supply chain.	
Presentation by trainer using PPT	Overview	30
	Unit Learning Objectives	
	EU net-zero agriculture in 2050	
	Avoiding emissions	
	Reducing emissions	
	Emissions from internal transportation	
	Recovery of emissions	
	Farming machinery	
	Precision Agriculture	
	Case Study – The Small Robot Company	
	Using local nutrients, pesticide and herbicides	
	Emissions from farming outputs transportation	
	Staying local	
	Greenhouse farming	
	Using renewable energy in farming	
Case Study – Production of renewable energy in a wine cellar		
Case Study – Solar dryer for fodder		
Case Study – RETHINK organic production		
Discussion		
Assessment	Quiz	15

4 Quiz

- 1. What is the level of carbon emissions reduction possible according to the CTI Tool by 2030?**

Answer: 37%

- 2. What are three main levers to contain damage done by nutrient loss in farming?**

Answer:

- Changing diets by lowering consumption of livestock products
- Improve crop and animal nutrient use efficiency by precision farming
- Reducing waste

- 3. The pre and post production process for farming produce accounts for what proportion of all emissions associated with agricultural products?**

Answer: 50%