smart skills
smart sustainable agriculture

Course 5: Climate-Smart Agriculture(CSA) Techniques

M1: Introduction to Climate-Smart Agriculture

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contents

In this module, learners will understand what Climate-Smart Agriculture (CSA) is, its importance in tackling climate change, and its three fundamental pillars: sustainable productivity, adaptation and mitigation.

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01

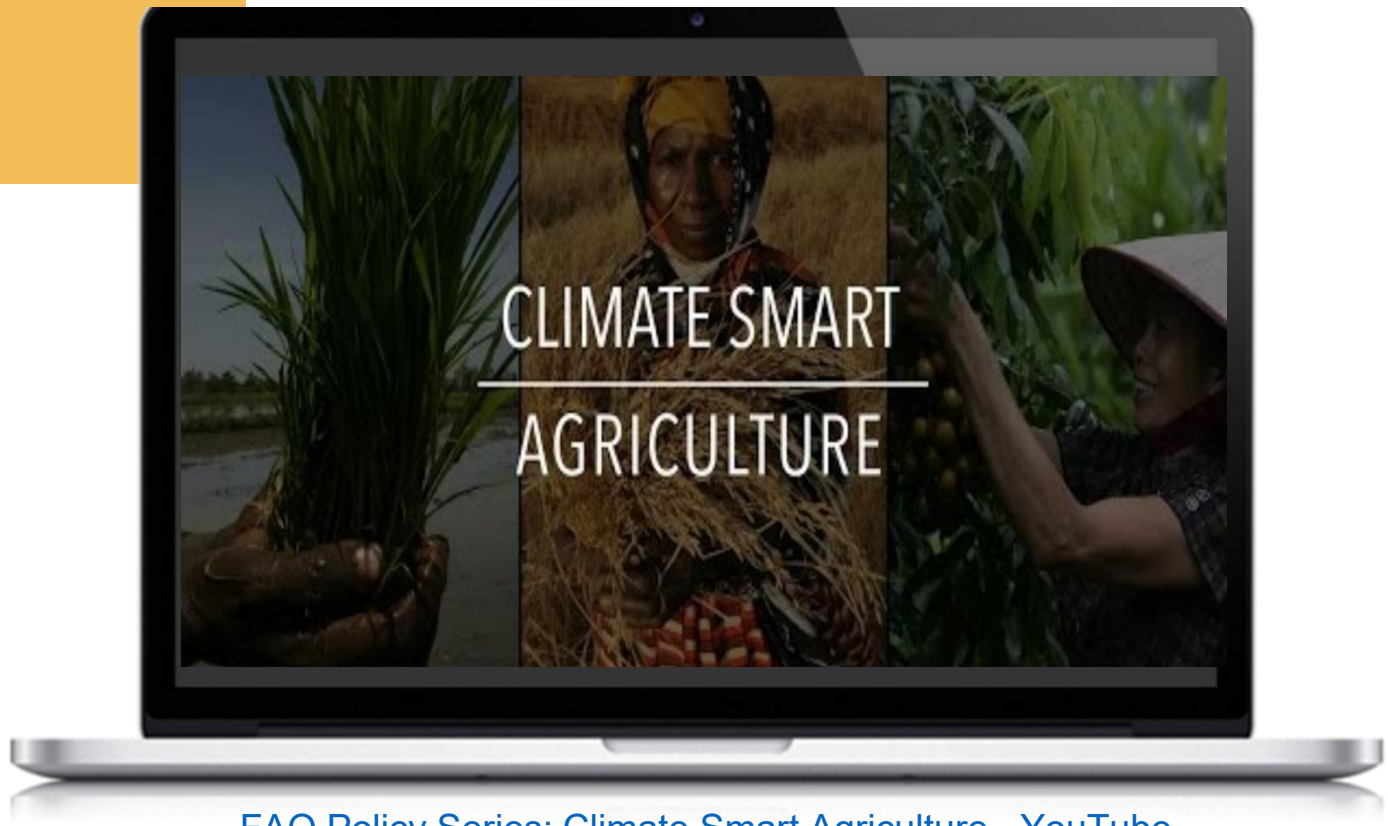
DEFINITION OF CLIMATE-SMART AGRICULTURE (CSA)

What is CSA?

Climate-Smart Agriculture is an approach to **transforming agri-food systems**, making them **more sustainable and resilient** to climate change. It contributes to the achievement of the **Sustainable Development Goals (SDGs)** and the Paris Agreement, focusing on:

- ***Increasing agricultural productivity in a sustainable way***
- ***Adapting to climate change***
- ***Reducing greenhouse gas (GHG) emissions***

Policy and planning



FAO Policy Series: Climate Smart Agriculture - YouTube

To be effective CSA policies must contribute to broader economic growth, poverty reduction and sustainable development goals. They must also be integrated with disaster risk management strategies, actions, and social safety net programmes. (FAO)

What is CSA?

CSA is a flexible concept that must be adapted to local specificities and implemented through five key actions according to the FAO:

1. **Expanding the knowledge base on CSA**
2. **Supporting enabling policies**
3. **Strengthening local and national institutions**
4. **Increasing investment and financing options**
5. **Applying CSA practices in the field**

Climate-smart agriculture (CSA) is an integrated approach to managing landscapes—cropland, livestock, forests and fisheries…that addresses the interlinked challenges of food security & climate change.

(WORLD BANK)

02

THE 3 PILLARS OF CSA

The 3 Pillars of CSA

Increasing Sustainable Productivity

The goal is to guarantee food security for a growing global population, which will reach **9 billion people by 2050.**

- **Improve agricultural yield by avoiding waste along the supply chain.**
- **Balance diets with the right nutrients (vitamins, proteins, minerals).**
- **Optimise animal production to reduce environmental impact.**
- **Adaptation and Resilience**
- **Emissions Mitigation**

Adaptation and Resilience

Climate change impacts agriculture through extreme events (droughts, floods, heatwaves).

- Agriculture must adapt through new practices, technologies and climate data.
- Examples of adaptation: choosing resistant crops, changes in sowing cycles, use of climate prediction models.

Emissions Mitigation

Agriculture and related sectors generate about 25% of global GHG emissions.

1 Reduce emissions with more efficient techniques.

2 Encourage carbon sequestration in soil and plants to offset emissions.

3 Optimise fertiliser use & livestock manure management.

Be Inspired - Case study

Fattoria Giuntoli produces and sells **zero-kilometre** agri-food products, using advanced cultivation and livestock technologies.

Why is it Climate-Smart?

- **Productivity:** Short supply chain & innovation.
- **Adaptation:** Self-sufficient livestock.
- **Mitigation:** Lower transport emissions.

🔗 Find out more

agriculture

03

Interactive Activity

Learner Reflection: how to apply Climate-Smart Agriculture (CSA)

The goal is…

- to reflect on strategic decisions that can improve the sustainability and resilience of agriculture.

Scenario

You are a farmer who runs a farm in a region affected by long periods of drought. Your corn crops are suffering due to high temperatures and water scarcity. You have three options for adaptation: which one will you choose?

Answer 1

Replace the corn with more drought-resistant crops, such as sorghum.

Answer 2

Install a drip irrigation system to reduce water consumption.

Answer 3

Use fertilisers with a high nitrogen content to stimulate corn growth.

Feedback on answers

Option A and B

Excellent choices! These practices are part of adapting to CSA, improving the resilience of the agricultural system.

Option C

This strategy could increase productivity in the short term, but it doesn't address the problem of drought and could worsen greenhouse gas emissions.

GREAT JOB!

This module introduces the concept of CSA and its role in food security and environmental sustainability. The **next module** will look in depth at **adaptation strategies** to protect agricultural production from climate change.

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