Co-funded by the European Union

GEAVET DIGI-BASED COACHING MODULE FOR WOMEN IN SUSTAINABLE AGRI-BUSINESS AND ENTREPRENEURSHIP

DELIVERABLE 4.2

GEAVET PROJECT N° 101129027

"INCLUSIVE GREENING EXCELLENCE IN THE AFRICAN EDUCATION AND TRAINING ECOSYSTEM"

SECTION 1.2: Innovative and Climate-Smart Farming Practices

1.2.1: Understanding Climate-Smart Agriculture (CSA)

Climate-Smart Agriculture (CSA) is an approach to farming that helps farmers respond to climate change while improving productivity and protecting the environment. CSA focuses on farming in ways that produce enough food and income today without depleting natural resources needed for future generations. For women farmers across Sub-Saharan Africa, CSA is particularly important because farming relies heavily on rainfall, which has become increasingly unpredictable.

CSA is built on three interconnected goals:

1. **Increasing productivity** – helping farmers produce more food and earn higher incomes. For example, smallholder women in Kenya and Tanzania use **improved seed varieties and intercropping techniques** to boost yields.
2. **Adapting to climate change** – strengthening farmers' resilience to droughts, floods, pests, and diseases. In Senegal, women are practicing **water harvesting and mulching**, while in Malawi, **early warning weather SMS alerts** help women plan planting and harvesting.
3. **Mitigating environmental impact** – protecting land, water, and biodiversity. Practices include **agroforestry, conservation agriculture**, and **composting** to enrich soil and reduce erosion.

While some high-tech CSA innovations like AI, drones, or precision sensors are emerging in Sub-Sahara African countries, these technologies are currently **limited to pilot projects or larger commercial farms** and are not yet widely accessible to smallholder women farmers. Therefore, this module focuses on CSA practices and digital solutions that are **practical, locally available, and scalable for women in rural communities**.

CSA is not a replacement for traditional knowledge; instead, it **combines local experience with innovations** to help women farmers work more effectively in a changing climate.

Reflective Questions

- Which CSA practices are already used in your community?
- How could you adapt one of these practices on your farm or garden this season?
- How could women's groups share knowledge or resources to make CSA easier to adopt?

Work sheet: Exploring Climate-Smart Agriculture

Objective: Understand Climate-Smart Agriculture practices, see them in action, and reflect on how to apply them in your own farm or community.

Step 1: Watch the Video

Video: Climate Smart Agriculture | Targeting the Small Farmer (CSA in Africa)
Climate Smart Agriculture | Targeting the small farmer

- Duration: ~6 minutes
- Focus: Practical CSA practices for smallholder farmers in Africa.

Step 2: Identify CSA Practices

Instructions: While watching the video, note down the CSA practices you observe. Examples include water conservation, intercropping, agroforestry, mulching, or using improved seeds.

CSA Practice Observed	How It Helps Farmers Adapt to Climate Change	Could Women in Your Community Use It? (Yes/No)	How?

Step 3: Reflection Questions

1. Which CSA practice in the video do you find most interesting or useful? Why?
2. Are there practices from the video that you or other women in your community already use?
3. What challenges might prevent you from using a new CSA practice? How could you overcome them?
4. How can women's groups help each other adopt CSA practices?

Step 4: Action Planning

Choose **one CSA practice** you want to try on your farm or in your garden this season. Fill in the plan below:

CSA Practice	Goal (What do you want to achieve)	Steps to implement	Support needed	Target Date

Step 5: Share & Discuss

- Pair up with another participant and **share your chosen CSA practice and plan**.
- Discuss:
    - What challenges might you face?
    - How could you help each other succeed?

1.2.2: Why Climate-Smart Agriculture Matters for Women

Women play a major role in food production across Sub-Saharan Africa, yet they are among the most affected by climate change. Many women farm small plots of land and rely on rain-fed agriculture. When rainfall becomes unpredictable, pests increase or soil fertility declines, women's livelihoods and household food security are directly threatened. Climate-Smart Agriculture provides practical solutions that help women continue farming despite these challenges. For example, Women farmers can adopt drought-tolerant crop varieties, practice mulching to retain soil moisture, use rain water harvesting or drip irrigation, apply organic compost to improve soil fertility and introduce crop diversification to reduce the risk of total crop failure. These approaches help farmers adapt to changing weather conditions while maintaining productivity on small plots of land.

CSA also supports women farmers by improving yields on limited land, reducing losses caused by climate shocks, and promoting farming practices that require fewer costly inputs. For instance, intercropping, improved seed varieties, and better soil management practices can increase productivity without requiring large investments. These approaches can lead to more reliable harvests and steady market supply, which in turn helps women maintain more stable income throughout the year rather than experiencing large income losses when crops fail. Some CSA practices also reduce the heavy workload faced by women by introducing more efficient methods of water use, soil management, and crop production. Through CSA, women can strengthen their agribusinesses, improve household nutrition, and increase income stability. By adopting climate-smart practices, women farmers also contribute to community resilience and long-term food security. When women farmers are able to produce consistently despite climate challenges, they strengthen their households, support local markets, and build more sustainable agribusinesses. For this reason, Climate-Smart Agriculture is increasingly recognized as an important pathway for women's empowerment in agriculture.

Visual Link

This short video introduces the concept of Climate-Smart Agriculture and explains how farmers can adapt to climate change while improving productivity

Climate Change 101 with Bill Nye | National Geographic

Reflective Questions.

1. What climate challenges have you experienced on your farm in the past few years (for example drought, flooding, pests, or poor soil fertility)?

2. Which climate-smart practice mentioned above could help address one of these challenges on your farm?
3. How might adopting one climate-smart practice help you produce more consistently or protect your income?

1.2.3: Agroecology as a Climate-Smart Practice

Agro ecology is a farming approach that works with nature rather than against it. It is based on the idea that healthy soils, diverse crops, and balanced ecosystems lead to stronger and more productive farms Across many countries in Sub-Saharan Africa, women farmers already practice agro ecology through traditional farming knowledge without always calling it by that name.

Common agro ecological practices include intercropping (growing different crops together), crop rotation, covering soil with mulch, and using compost or animal manure instead of synthetic fertilizers. These practices improve soil fertility, conserve soil moisture, and help control pests and diseases naturally. For example, planting legumes such as beans alongside cereals like maize can improve soil nutrients while providing multiple food sources.

For women farmers, agro ecology is particularly suitable because it relies largely on locally available resources and traditional knowledge, making it affordable and practical for small-scale farms. It can reduce the need for costly external inputs while improving soil health and farm productivity over time. By adopting agro ecological practices, women farmers can increase food diversity for their families while protecting their land from degradation caused by climate change.

Visual Link

What is Agroecology-FAO

What is Agroecology?

1.2.4: Sustainable Irrigation and Water Management

Water is one of the most critical resources in agriculture, and climate change has made water availability more uncertain. Sustainable irrigation focuses on using water efficiently so that crops receive enough moisture without wasting this valuable resource.In many parts of Sub-Saharan Africa, women farmers are turning to simple irrigation methods to cope with irregular rainfall.

Techniques such as rainwater harvesting, drip irrigation, and small water storage systems allow women to continue farming during dry periods. Solar-powered pumps are also becoming more common, reducing the cost and labour associated with watering crops. Sustainable irrigation not only improves crop yields but also reduces the time

and physical effort women spend fetching water, allowing them to focus on other agribusiness activities.
Effective water management helps women farmers produce crops throughout the year, increasing income and food security.

Visual Link

Ethiopian Rural Smallholder Farmers Embracing Drip Irrigation Technology

Ethiopian Rural Smallholder Farmers embracing Drip Irrigation Technology

This video shows how smallholder farmers use drip irrigation to deliver water directly to plant roots, helping crops grow while reducing water waste. Drip irrigation is widely recognized as one of the most efficient irrigation methods, improving crop yields while conserving water resources

1.2.5: Organic Farming and Renewable Energy in Agriculture

Organic farming is a climate-smart practice that avoids synthetic chemicals and focuses on maintaining healthy soils and ecosystems. Women farmers across Sub-saharan Africa, are increasingly adopting organic methods by using compost, animal manure, and natural pest control techniques. Organic farming reduces production costs and improves soil health, while also responding to growing market demand for safe and healthy food.
Renewable energy is another important innovation in climate-smart agriculture. Technologies such as solar dryers, biogas systems, and solar-powered irrigation reduce dependence on expensive and environmentally harmful energy sources. Solar dryers, for example, help women preserve fruits and vegetables, reduce post-harvest losses, and improve product quality. These innovations support both environmental sustainability and agribusiness growth.

Visual Link

Reducing post-harvest losses thanks to OGV's solar drying technologies

This video shows how solar dryers help smallholder farmers reduce post-harvest losses by drying crops using renewable solar energy. Solar drying improves food preservation, maintains product quality, and allows farmers to sell their produce later at better prices.

1.2.6: Women as Climate Change Advocates

Women are not only affected by climate change; they are also key actors in finding solutions. Through their daily farming activities, women experiment with new practices, share knowledge with neighbours, and influence household and community decisions.

By adopting climate-smart practices, women become advocates for sustainable land use and environmental protection.

Women-led farmer groups and cooperatives also play an important role in spreading climate-smart innovations. These groups provide spaces for learning, sharing experiences, and accessing resources such as training and finance. For example, in many farming communities across Sub-Saharan Africa, women who adopt practices such as mulching, composting, or drought-tolerant crops often demonstrate these methods to other farmers during group meetings or community field days, encouraging others to adopt more climate-resilient practices.

When women are supported to lead climate-smart agribusinesses, they contribute to stronger communities and more resilient food systems. Empowering women as climate change advocates strengthens both gender equality and environmental sustainability.

Reflection Question

Can you think of a woman in your community who has introduced or promoted a farming practice that helps protect the environment or improve resilience to climate change? What can others learn from her example?

Visual Link

Young Women Leading Climate-Smart Agriculture in Africa-UN Women Africa.

Building Sustainable Resilience in Uganda: Climate Smart Agriculture

1.2.7: Lessons from Women-Led Innovations in the EU and SSA

Across the European Union and Sub-Saharan Africa, women agripreneurs have successfully scaled their businesses by combining innovation, digital tools, and climate-smart practices. In the EU, women-led farms often use organic certification, precision farming technologies, and renewable energy to increase productivity while meeting sustainability standards.

In Sub-Saharan Africa, women-led agribusinesses are applying climate-smart practices such as composting, solar drying, water-efficient irrigation, and digital market platforms to improve productivity, reduce losses and strengthen income resilience. These experiences show that innovation does not always mean complex technology; it often involves practical solutions that respond to local farming conditions.

The exchange of knowledge between the EU and SSA provides valuable lessons on how women can grow sustainable agribusinesses through climate-smart innovation. For example, women farmers and agripreneurs share experiences on organic production standards, climate-smart soil management, digital marketing tools for agricultural products, and renewable energy technologies such as solar drying or solar irrigation systems.

Visual Link
Women farmers Leading innovation in Agriculture.
https://youtu.be/sPpZFn57EKw?si=RaJlhuC0cd4iXdfT

1.2.8: Case Studies and Practical Learning Activity

Across the world, women farmers are successfully applying climate-smart agriculture practices to improve productivity and resilience to climate change. For example, in Kiryandongo District in Uganda, farmer **Florence Atim** has adopted practices such as mulching, compost production, and solar-powered irrigation. By using organic manure and covering the soil with mulch to retain moisture, she has been able to maintain vegetable production even during dry periods. Solar irrigation allows her to grow crops such as cabbage, onions, and eggplants throughout the year, helping stabilize her income despite irregular rainfall.

Similarly, women farmer groups in districts such as Nebbi have benefited from solar-powered irrigation systems introduced through community initiatives. These systems enable women horticultural farmers to irrigate crops during dry seasons, increasing yields and strengthening their resilience to climate change.

In the European Union, women-led farms are also adopting climate-smart practices such as organic farming, digital farm management tools, and renewable energy technologies like solar panels. These approaches help farmers improve productivity while reducing environmental impact. These examples show that climate-smart agriculture can be adapted to different contexts. When women farmers combine sustainable farming practices with appropriate technologies, they can strengthen farm resilience, improve productivity, and build sustainable agribusinesses

Reflection Questions

- Which climate-smart practices mentioned above could be applied in your farming or agribusiness context?
- What local resources could support the adoption of these practices in your community?

1.2.9: Activity: Mapping Climate Challenges and CSA Solutions

Participants reflect on the main climate challenges affecting their farming or agribusiness activities. Working individually or in small groups, they identify local climate risks such as drought, floods, irregular rainfall, soil degradation, or pest outbreaks.

Next, participants discuss which climate-smart agriculture (CSA) practices could help address these challenges. For example, they may consider practices such as mulching,

rainwater harvesting, drought-resistant crops, integrated pest management, or solar irrigation.

This activity helps participants connect climate-smart agriculture concepts to their own farming experiences and identify practical solutions they can apply in their local context.

Work Sheet.

Participants can fill this table below;

Climate Challenge	How does it affect my farm/business?	Possible Climate-Smart Solution
Example: Drought	Crops dry before maturity	Mulching, Rainwater harvest.

References

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