Module 4:
Introduction to Climate-smart agriculture

ERA
EVIDENCE FOR RESILIENT AGRICULTURE

World Agroforestry

CGIAR

RESEARCH PROGRAM ON
Climate Change, Agriculture and Food Security

CCAFS

DEPARTMENT OF STATE
UNITED STATES OF AMERICA

USDA

Learning objectives

- What is CSA and its objectives
- Describe CSA practice levels
- Describe the technologies in CSA

Course Outline

Part A: What is CSA and its objectives

- Genesis of CSA
- What is CSA?

Part B: Describe CSA practice levels

- Farm level
- Landscape level

Part C: Describe the technologies in CSA

- weather smart
- water-smart
- seed/breed smart
- nutrient smart
- institutional/market smart

Part D: Case studies

Part A: History of Climate-Smart Agriculture

19th century, climate change began and natural GHG is identified

1992, Rio Earth Summit Global governance on climate (developed countries pledge to reduce GHG emissions

1997 –COP3, Kyoto protocol Commitments from countries to reduce GHG emissions

REDD+ mechanism: market based approach to reduce GHG emissions

Late 2000s: Mitigation dominant approach

2006: COP 12, SBSTA mandated to address impacts, vulnerability and adaptation programmes

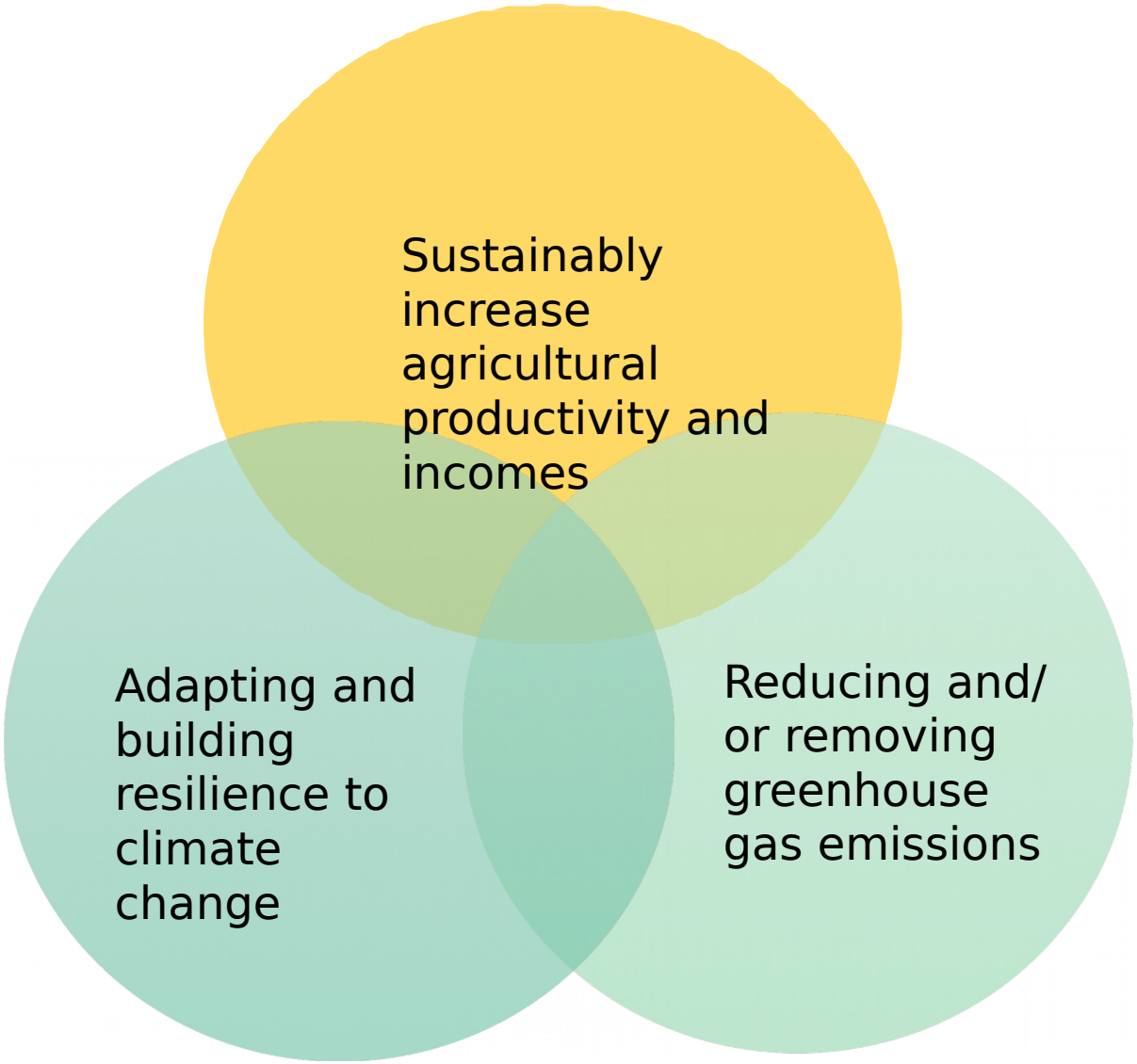
2009:
CSA is BORN!!!

What is Climate-Smart Agriculture?

It is an approach that …

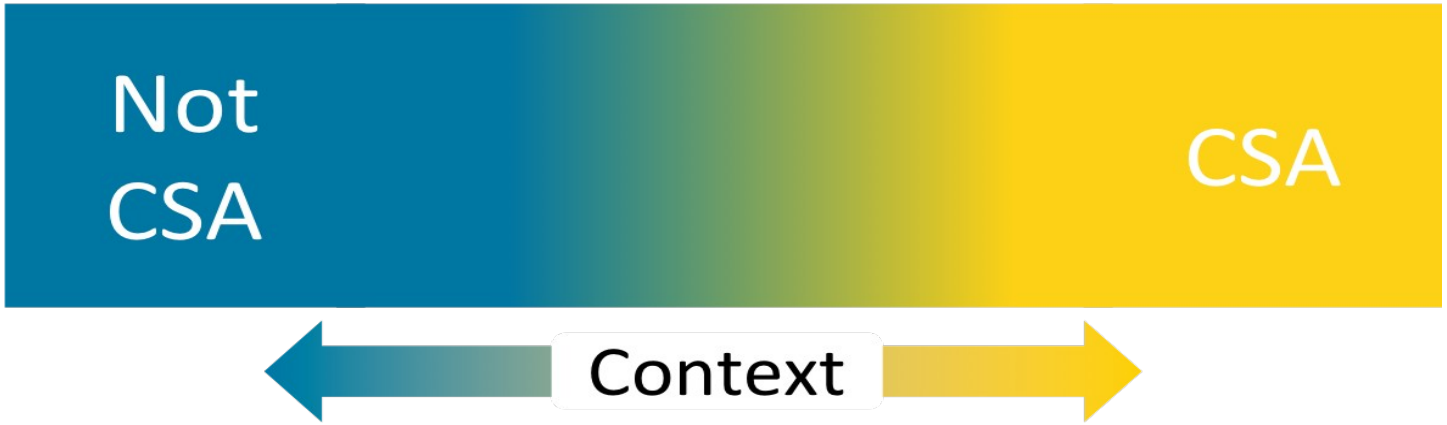
- Sustainability increase agricultural productivity
- Adapting and building resilience to climate change
- Reducing and /or removing greenhouse gas emissions

Features of CSA



Features of CSA

CSA is context specific …



Many practices/programs/policies can be CSA
somewhere
But **none** are likely CSA everywhere

Rosenstock & Lamanna 2015

Defining CSA pillars

- What do productivity, resilience and mitigation mean to you?
- Write down a word for each pillar

Afterbirth, what next?

2009: CSA IS BORN

FAO & partners broadly define the approach

2014: MOONSHOT

UN secretary general sets target to reach 500m smallholders

2014 – x:
MASSIVE MOBILIZATION

Billions of USD of public and private sector investment, 10s of Alliances, 10s of countries

2019:
CSA TURNS 10!

Governments incorporating CSA in their policies

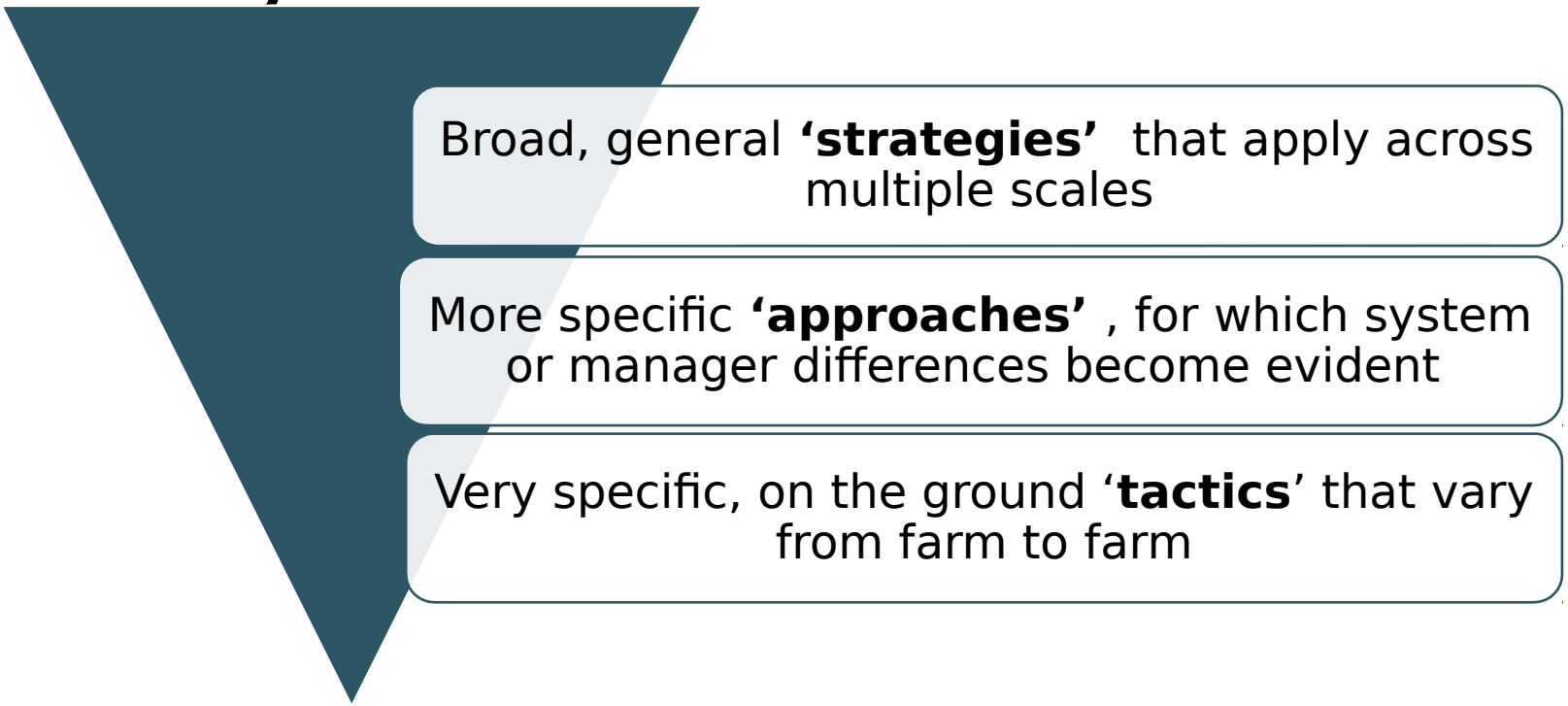
Part B: Defining CSA based on Scale

… from individual farms

Farmers operate within landscapes…

How is CSA practiced at farm level

Farm scale CSA can be classified according to **specificity**



Examples of farm level CSA practices

Landscape level CSA?

Three features that characterize climate-smart landscape

i) CSA practiced across numerous farms/ fields

ii) Diverse land uses within, between and beyond farms

iii) Management of land use interactions beyond the farm and landscape scale to optimize benefits, development and conservation

Example of climate-smart landscape

Part C: Types of CSA technologies

Weather-smart

- climate information services
- Index-based insurance

Water smart practices

Water-smart

Under rain fed agriculture:

- Water harvesting
- Soil management practices to capture and retention

Water smart practices

Water-smart

Irrigation:

From source

Means of dispensation and application appliances

Seed/Breed smart practices

Involves strategies that account for differences in socio-economic, climatic and soil conditions in the soil

Examples

- Short-term adaptation (drought tolerant)
- Long-term adaptation (heat, saline and disease tolerant)
- Productivity: High yielding varieties, faster growing
- Mitigation: reductions in emissions from soils and water management and more productive livestock breeds

Carbon/Nutrient smart practices

Soil management practices

Improve productivity: Improve soil nutrients, increase water availability and reduce losses

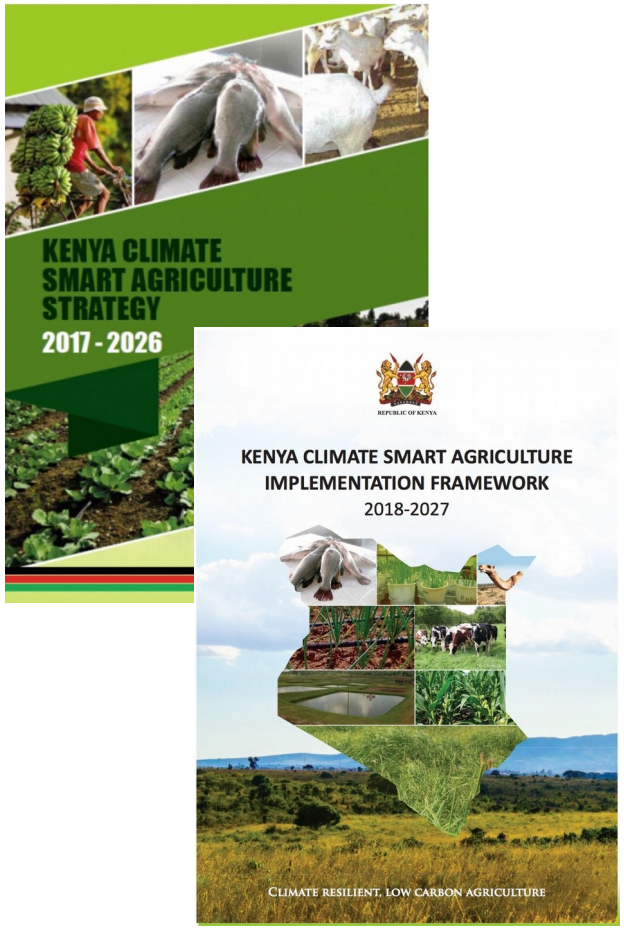
Enhance resilience/adaptation: specific practices that help to reduce the risk of e.g run-off during intense rainfall or erosion during intense wind periods

Mitigation: practices that improve carbon storage, reduce emissions from nutrient/fertilizer usage, Reduce emission intensities in animals

Institutional/market smart practices

Value chains: increasing the shelf life of products, coordinated stakeholders to make decision making easy

Policy engagement: Appropriate policies and enabling environment



Case studies

Climate-smart agriculture in the Kenyan arid lands

Climate-smart simple farming techniques

CSA FAQs

1. Does a practice need to do achieve all three pillars, productivity, adaptation & mitigation?

   *Not necessarily. In developing countries, mitigation is seen as a **co-benefit** rather than a requirement. Also, in a portfolio or landscape approach, some practices could focus on productivity and resilience while others focus on mitigation, as long as all objectives are being met in the entire area.*

2. Isn't this just the same as {sustainable agriculture, agroecology}?

   CSA's "equal" focus on productivity, resilience, and mitigation differentiates it from other approaches, but it shares many characteristics with other approaches to sustainable food security. CSA is also not prescriptive, but must be tailored to the local context.

THANKYOU!

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