Course Title: Climate-Smart Agriculture & Adaptation Strategies

- **Duration:** 5 Days (approximately 35-40 instructional hours)
- **Course Goal:** To provide farmers, agricultural extension professionals, and development practitioners with a comprehensive understanding of Climate-Smart Agriculture (CSA) principles and the practical skills to identify, select, and implement effective adaptation strategies that sustainably increase agricultural productivity, enhance resilience to climate change, and reduce greenhouse gas emissions where possible.
- **Core Focus:** Building the capacity to design and implement practical, context-specific agricultural strategies that address the challenges of climate change.

Learning Objectives:

Upon successful completion of this workshop, participants will be able to:

- **Explain** the core principles and three pillars of Climate-Smart Agriculture (Productivity, Adaptation, Mitigation).
- **Understand** the key impacts of climate change on local agricultural systems.
- **Conduct** a basic Climate Change Vulnerability Assessment for a farm or community.
- **Identify** and evaluate a portfolio of climate-smart practices for soil, water, crop, and livestock management.
- **Select** climate-resilient crop varieties and livestock breeds suitable for changing conditions.
- **Integrate** climate information and weather advisory services into farm-level decision-making.
- **Understand** principles of climate-resilient value chains and risk management.
- **Explore** the synergies and trade-offs between productivity, adaptation, and mitigation.
- **Develop** a basic Climate-Smart Agriculture Action Plan for a specific farming context.

Target Audience:

- Lead Farmers and leaders of Farmer Organizations/Cooperatives.
- Agricultural Extension Workers and Agronomists.
- NGO staff and Development Practitioners working in agriculture, food security, and climate change.
- Local government planners and policymakers in the agricultural sector.
- Agribusiness professionals interested in building resilient supply chains.

Prerequisites:

- A foundational understanding of agricultural practices and local farming systems.

Teaching Methodology:

This is a highly interactive and participatory workshop, grounded in practical application. The methodology includes:

- **Interactive Lectures & Case Studies:** Introducing CSA concepts using real-world examples of successful adaptation strategies.
- **Hands-on Workshops & Field Exercises (if feasible):** Participants will conduct vulnerability assessments, map climate risks, and design integrated CSA systems.
- **Participatory Tools:** Using tools like seasonal calendars and community mapping to understand climate impacts.
- **Group Discussions & Problem-Solving Clinics:** A collaborative environment for sharing local climate challenges and co-creating solutions.
- **Guest Speakers (optional):** Inviting a meteorologist, a researcher on climate-resilient crops, or a farmer successfully practicing CSA.
- **Action Planning:** Developing practical plans that can be implemented in participants' home communities or organizations.

*(For **Online Delivery**, this will be adapted using virtual whiteboards (e.g., Miro/Mural) for mapping exercises, breakout rooms for case studies, polls for vulnerability ranking, and online climate data tools.)*

Materials Provided:

- Comprehensive digital or printed workbook with key concepts, practical guides, and a catalogue of CSA practices.
- Templates for a Climate Vulnerability Assessment, a Seasonal Calendar, and a CSA Action Plan.
- Case study documents reflecting diverse farming systems and climate challenges.
- Links to relevant online climate information portals, weather services, and CSA resources.
- Certificate of Completion.

ADEPT TRAINING CENTER

Detailed Day-by-Day Curriculum

Day 1: Understanding Climate Change & Its Impact on Agriculture

- **Module 1: Introduction to Climate Change & Local Impacts (Approx. 2.5 hours)**
  - Welcome, introductions, and course objectives.
  - Demystifying Climate Change: Weather vs. Climate, the Greenhouse Effect.
  - Global trends and local manifestations: Changes in temperature, rainfall patterns, seasonality, and extreme weather events.
  - **Participatory Workshop:** "Mapping Our Climate Story" – Using historical timelines, participants map out observed changes in their local climate and farming systems over the past decades.
- **Module 2: The Impact of Climate Change on Agriculture (Approx. 2 hours)**
  - Impacts on crops (heat stress, drought, flooding, new pests/diseases).
  - Impacts on livestock (heat stress, feed/water scarcity, disease vectors).
  - Impacts on soil and water resources.
  - Socio-economic impacts on farmers and rural communities.
- **Module 3: Introduction to Climate-Smart Agriculture (CSA) (Approx. 3 hours)**
  - Defining the CSA Approach.
  - Deep dive into the **Three Pillars of CSA:**
    1. **Productivity:** Sustainably increasing agricultural productivity and incomes.
    2. **Adaptation:** Adapting and building resilience to climate change.
    3. **Mitigation:** Reducing and/or removing greenhouse gas emissions, where possible.
  - Understanding the synergies and trade-offs between the three pillars.
  - CSA is context-specific: "No one-size-fits-all" solution.
  - **Activity:** Classifying different agricultural practices against the three pillars of CSA.
  - **End of Day 1 Recap & Q&A.**

Day 2: Assessing Vulnerability & Climate-Smart Soil/Water Management

- **Module 4: Conducting a Climate Change Vulnerability Assessment (Approx. 3 hours)**
  - Understanding Vulnerability = Exposure + Sensitivity + Adaptive Capacity.
  - A practical, step-by-step guide to conducting a participatory vulnerability assessment for a community or farm.
  - Tools for assessment: Hazard mapping, seasonal calendars, livelihood analysis.
  - Identifying the most vulnerable groups and farming systems.
  - **Workshop:** In groups, participants conduct a simplified vulnerability assessment for a case study community.
- **Module 5: Climate-Smart Soil Management (Approx. 2.5 hours)**
  - The role of healthy soil in climate resilience (water retention, nutrient supply, carbon storage).
  - Key Practices:
    - **Conservation Agriculture:** Minimum tillage, permanent soil cover (mulching, cover crops), crop rotation.
    - **Integrated Soil Fertility Management:** Composting, manure management.
    - Agroforestry and soil erosion control.
- **Module 6: Climate-Smart Water Management (Approx. 2 hours)**
  - Key Practices:
    - **Water Harvesting:** Ponds, tanks, swales, check dams.
    - **Efficient Irrigation:** Drip irrigation, sprinklers.
    - **In-field water conservation:** Tied ridges, contour bunds.
  - **Demonstration/Field Exercise (if possible):** Measuring soil moisture or observing a water harvesting structure.
  - **End of Day 2 Recap & Q&A.**

Day 3: Climate-Smart Crop & Livestock Strategies

- **Module 7: Climate-Resilient Crop Management (Approx. 3 hours)**
  - **Crop & Variety Selection:** Choosing drought-tolerant, flood-tolerant, heat-tolerant, or early-maturing crop varieties.
  - **Participatory Varietal Selection (PVS):** Involving farmers in testing and selecting the best-adapted varieties.
  - **Crop Diversification:** The power of mixed cropping, intercropping, and agroforestry to reduce risk.
  - Adjusting planting times and crop calendars based on changing seasons.
- **Module 8: Climate-Smart Livestock Management (Approx. 2.5 hours)**
  - **Breed Selection:** Promoting hardy, locally adapted livestock breeds.

ADEPT TRAINING CENTER

    - **Feed & Fodder Management:** Cultivating drought-resilient fodder, fodder conservation (silage, hay), and strategic supplementation.
    - **Animal Health:** Managing climate-sensitive diseases and heat stress.
    - **Manure Management:** Reducing methane emissions and creating valuable fertilizer.
    - Silvopastoral systems (integrating trees into grazing lands).
- **Module 9: Integrated Pest & Disease Management (IPDM) in a Changing Climate (Approx. 2 hours)**
    - How climate change is altering pest and disease patterns.
    - Strengthening monitoring and early warning systems.
    - The role of biodiversity and a healthy ecosystem in pest regulation.
    - **Workshop:** Brainstorming a portfolio of CSA crop and livestock practices for the case study community based on their vulnerabilities.
    - **End of Day 3 Recap & Q&A.**

Day 4: Leveraging Climate Information & Managing Risk

- **Module 10: Using Climate & Weather Information for Farm Decisions (Approx. 3 hours)**
    - Differentiating between weather forecasts (short-term) and climate projections (long-term).
    - Accessing and interpreting locally relevant weather advisories (via radio, mobile phones, extension services).
    - Using seasonal forecasts for strategic planning (e.g., crop choice, planting dates).
    - **Workshop:** "Decision-Making Game" – Participants are given weather forecasts and have to make farming decisions (e.g., to plant, to irrigate, to harvest).
- **Module 11: Agricultural Risk Management & Insurance (Approx. 2 hours)**
    - Identifying key climate-related risks for farmers.
    - Strategies for managing risk: Diversification, savings, on-farm storage.
    - Introduction to agricultural insurance:
        - Indemnity-based insurance.
        - Weather Index-Based Insurance (WIBI).
    - Understanding the potential and limitations of insurance for smallholders.
- **Module 12: Climate-Resilient Value Chains (Approx. 2.5 hours)**
    - Analyzing climate risks at different stages of the value chain (post-harvest, transport, processing).
    - Strategies for building resilience: Improved storage, diversified processing, strengthened market linkages.
    - The role of certifications (e.g., organic, fair trade) in climate resilience.
    - **End of Day 4 Recap & Q&A.**

Day 5: Planning, Financing & Implementing CSA

- **Module 13: The Economics of CSA: Synergies & Trade-offs (Approx. 2 hours)**
    - Analyzing the costs and benefits of adopting CSA practices.
    - Identifying "win-win-win" practices that meet all three CSA pillars.
    - Understanding potential trade-offs (e.g., a practice that increases adaptation but is costly).
    - Making the business case for CSA to farmers and investors.
- **Module 14: Accessing Climate Finance for Agriculture (Overview) (Approx. 2 hours)**
    - Introduction to sources of climate finance (e.g., Green Climate Fund, Adaptation Fund, carbon markets - conceptual).
    - The role of governments, NGOs, and the private sector in financing CSA.
    - Developing bankable CSA project concepts.
- **Module 15: Your Climate-Smart Agriculture Action Plan (Capstone) (Approx. 3 hours)**
    - **Capstone Workshop:** Participants work in groups (based on their region or farming system) to develop a CSA Action Plan.
    - The plan will include:
        1. A summary of key climate vulnerabilities.
        2. A prioritized list of CSA practices to promote.
        3. An implementation strategy (including extension and capacity building).
        4. Basic M&E indicators to track adoption and outcomes.
    - Groups present their action plans for peer and instructor feedback.
- **Module 16: Course Review & Commitment to Action (Approx. 1 hour)**
    - Review of key CSA principles and adaptation strategies.
    - Open forum for final questions.
    - Participants share one key commitment from their action plan.
    - Course evaluation and closing.

ADEPT TRAINING CENTER