

Category	Examples	Key Benefits
----------	----------	--------------

Introduction to Climate Change Adaptation in Agriculture

Crop-based	• Switch to heat-tolerant or drought-resistant varieties	Maintains yields under variable climate
	• Adjust planting/harvest dates	
	• Use shorter-duration cultivars	
Soil & Water Management	• Conservation tillage, mulching	Improves water use efficiency, reduces erosion
	• Drip/precision irrigation, rainwater harvesting	
	• Contour bunds, terracing, agroforestry	
Livestock & Pasture	• Breed selection for heat tolerance	Sustains animal health, protects feed base
	• Rotational grazing, improved forage species	
	• Shade structures, cooling systems	
Diversification	• Mixed cropping, intercropping, agro-silvopastoral systems	Spreads risk, creates alternative income streams
	• On-farm value-addition (processing, storage)	
	• Early-warning climate services	
Technology & Data	• Remote sensing for moisture stress	Enables timely, evidence-based decisions
	• Mobile apps for decision support	
	• Crop insurance, credit for climate-smart inputs	
Institutional & Policy	• Extension training, farmer field schools	Reduces financial barriers, scales up best practices
	• Land-use planning, supportive regulations	

4. Step-by-Step Adaptation Planning Process

1. Assess Climate Hazards

- Use downscaled climate projections (temperature, precipitation, extreme events).
- Identify the most likely hazards for the specific region.

2. Evaluate Vulnerability

- Map exposure (e.g., flood-prone fields).

Introduction to Climate Change Adaptation in Agriculture

- Gauge sensitivity (crop type, soil quality).
- Determine adaptive capacity (access to credit, knowledge).

3. Set Adaptation Objectives

- Example: “Maintain wheat yields within 10% of the 2020 baseline by 2035.”
- Align