Climate-Smart Crop Production
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Native seeds banks

Diversification

Crop Rotations

Mulching

Direct Seeding
• New established patterns in average and distribution of rainfall?

• New established patterns in average temperature?

• Inter-annual climate variability / Shocks during specific phonological stages?
ADVICE FOR CLIMATE CHANGE ADAPTATION

Selecting the right seeds and planting at the right time minimizes production risks

LENGTH OF THE POTENTIAL GROWING SEASON

- 237 days
- 122 days
- 75 days
- 162 days
- 123 days
- 114 days
Transforming climate data in useful information helps farmers identify adapted crop varieties and the right planting window.
Performing analyses in near-real time by combining climate and weather data can now be done at farm level and translated in useful information for farmers.

1. Iterative validation and calibration of the model based on observed data in each agro-ecological region

2. Agro-ecological regions’ map updated using observed climate and soil data

3. Interactive map linking each location with crop varieties most adapted to climate, and markets

4. Climate (past), soil moisture (real time) and weather (forecasts) data combined to inform farmers of crop failure and productivity risks of planting on a given date

Developing a digital climate change adaptation tool for near-real time advice to farmers:

Farmers need assistance to select adapted crop varieties and the time for planting to avoid crop failure.
Knowing who / where are different types of smallholders is important for:

- **policy makers** to prioritize incentives coherent with climate change adaptation and mitigation
- **the private sector** to aggregate smallholders
- **development actors** to target interventions adapted to climate-markets, farmers’ resources, and competencies
Climate-Smart Crop Production in practice

Farm households mapped and classified based on quantity and quality of N applied / removed for farming

1 420 000 smallholders → 4 farm typologies
TARGETING AGRONOMIC SOLUTIONS

USE INFORMATION OBTAINED FROM CLIMATIC ASSESSMENT TO SELECT VARIETIES:

- Crops’ growing cycle matching the length of the climatic season
- Crops’ resistance to/avoidance of prevalent climatic shocks/pests
- Planting dates matching the local climate

USE INFORMATION OBTAINED FROM SOCIAL ASSESSMENT TO SELECT TECHNOLOGIES:

- Adapted to the current resource endowment of farmers
- That increase labour efficiency and productivity
- REQUIRES INVESTING IN SERVICES AND KNOWLEDGE
Working with the farmers and not for the farmers.
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SCALING UP
Linking climate-smart production to markets creates traction for sustainable agriculture

- Adapted seeds and sustainable equipment are available locally
- Governments and small rural entrepreneurs work together (public-private partnership) to provide farmers access to sustainable production inputs and services
- Farmers, public / private extension advisors, agri-businesses and service providers are trained and share the same understanding of sustainable practices
Developing capacity is an opportunity to improve productivity, create sustainable jobs in rural areas, and elevate the condition of the most vulnerable ones.
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Approach to sustainable production accounting for local-specific factors and replicable
Building climate-smart cropping systems

Due to their dependence on agriculture for their livelihoods, rural areas are the most vulnerable to the effects of climate change. Their agriculture is hard to produce and often environmentally unsustainable. Through climate-smart crop production practices, climate change adaptation and mitigation is possible.