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Climate Information Services for Increased Resilience and Productivity in Africa

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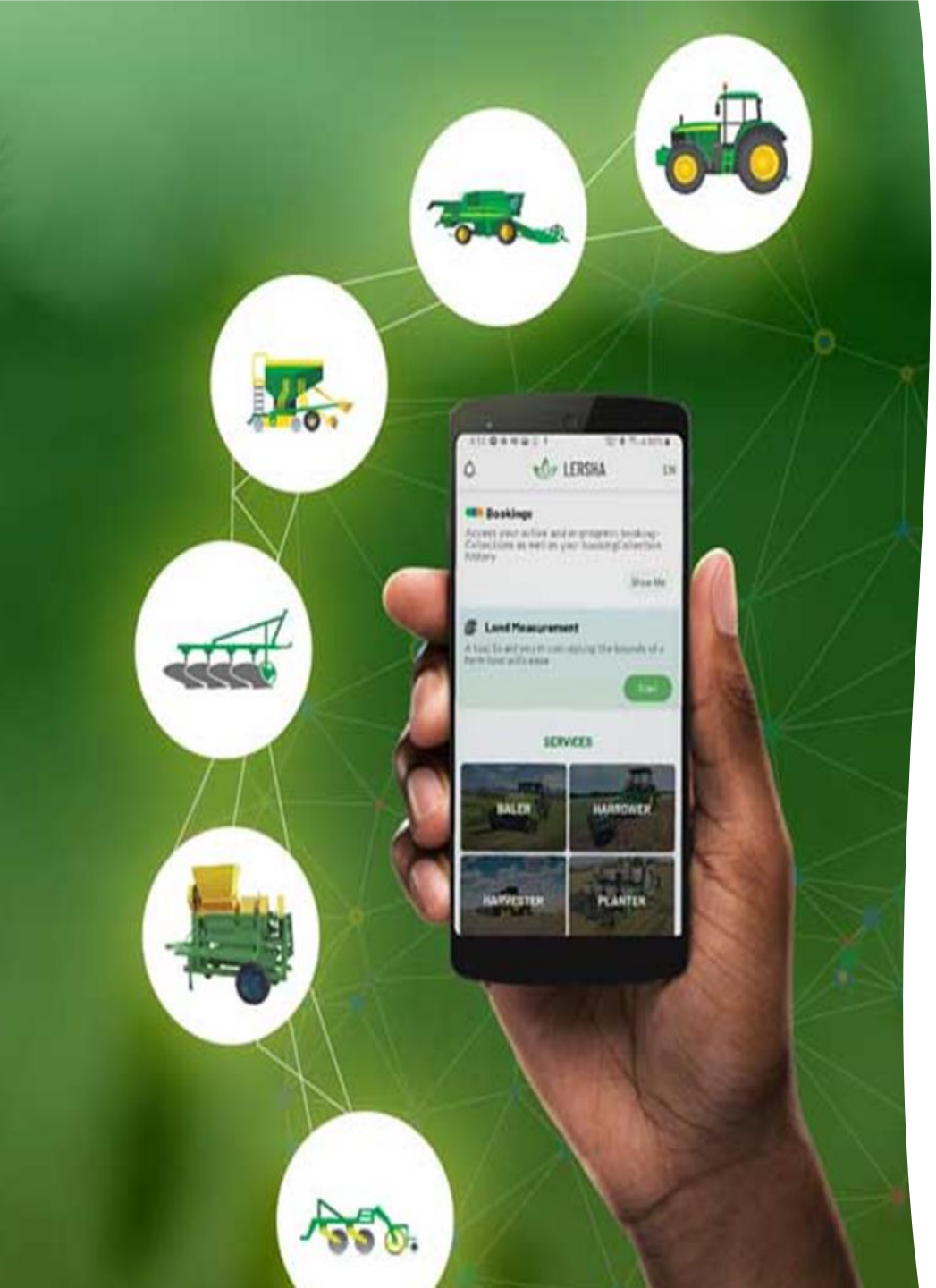
International Maize and Wheat Improvement Center (CIMMYT)-Ethiopia

First International Conference on "Transforming Food Systems through Climate Smart Agriculture (CSA)" National Convening
27-28 Oct 2022, Haramaya University



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Outline

Climate change and smallholder farmers in Africa

Role of climate services in risk management, productivity increase and resilience

Agricultural consideration of climate services

Delivery of digital climate services

Concluding remarks

Agriculture is a Risky Business

- Farmers are confronted with several challenges every season
- Sources of agricultural risk
  - Climate variability (planting date failures, dry spells, drought, floods)
  - Climate change
  - Timely access to inputs (availability & affordability)
  - Market uncertainty
  - Pests and diseases
  - Timely labor supply
  - Access to credit services

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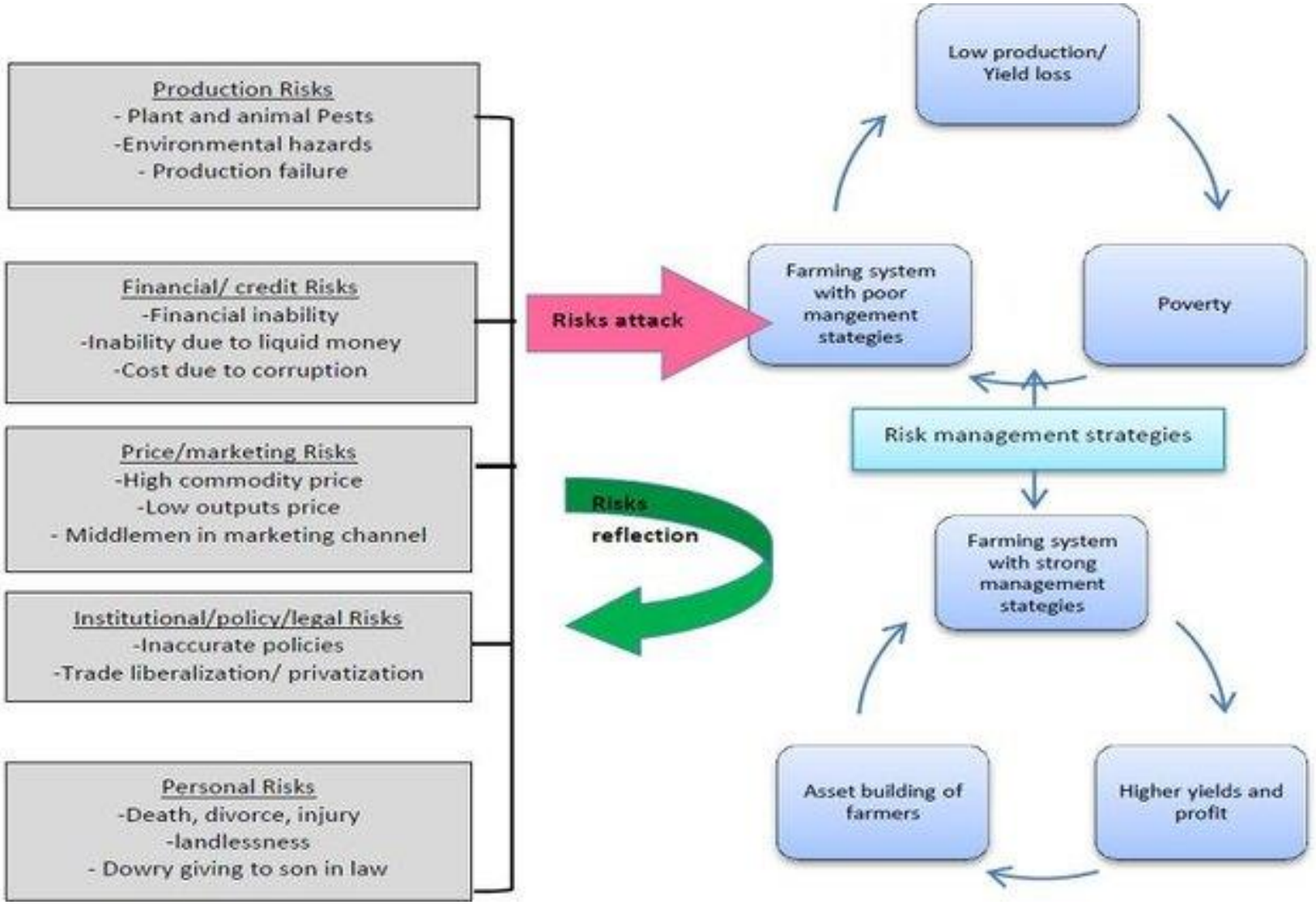

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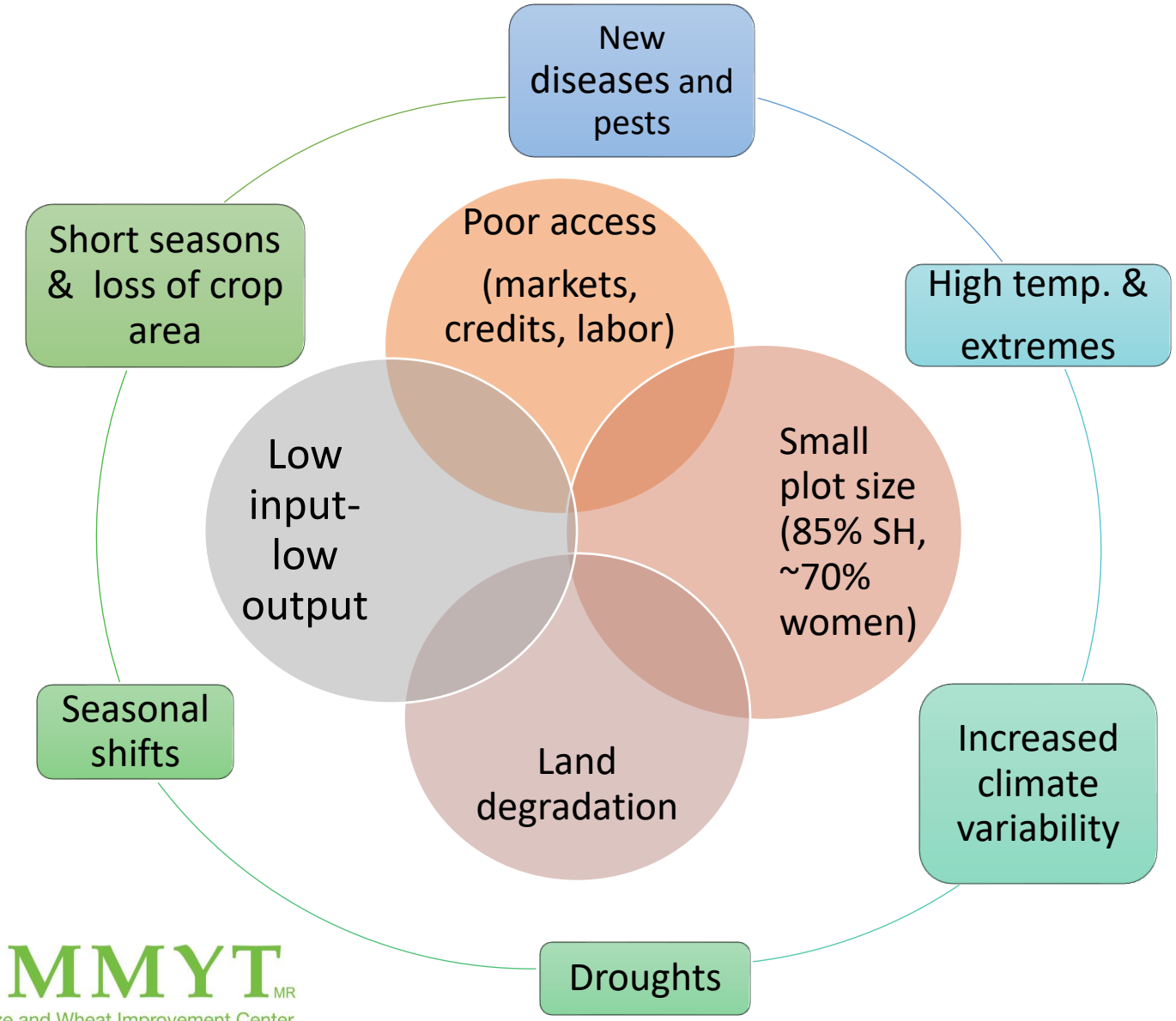
Climate change is exacerbating the risk of smallholder agriculture in Africa



Smallholder farmers are mostly risk-averse

Fail to exploit opportunities during good years

Vulnerable to climate risks

Low adaptive capacity and resilience

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Climate (rainfall) is the major driver of Agriculture in Africa

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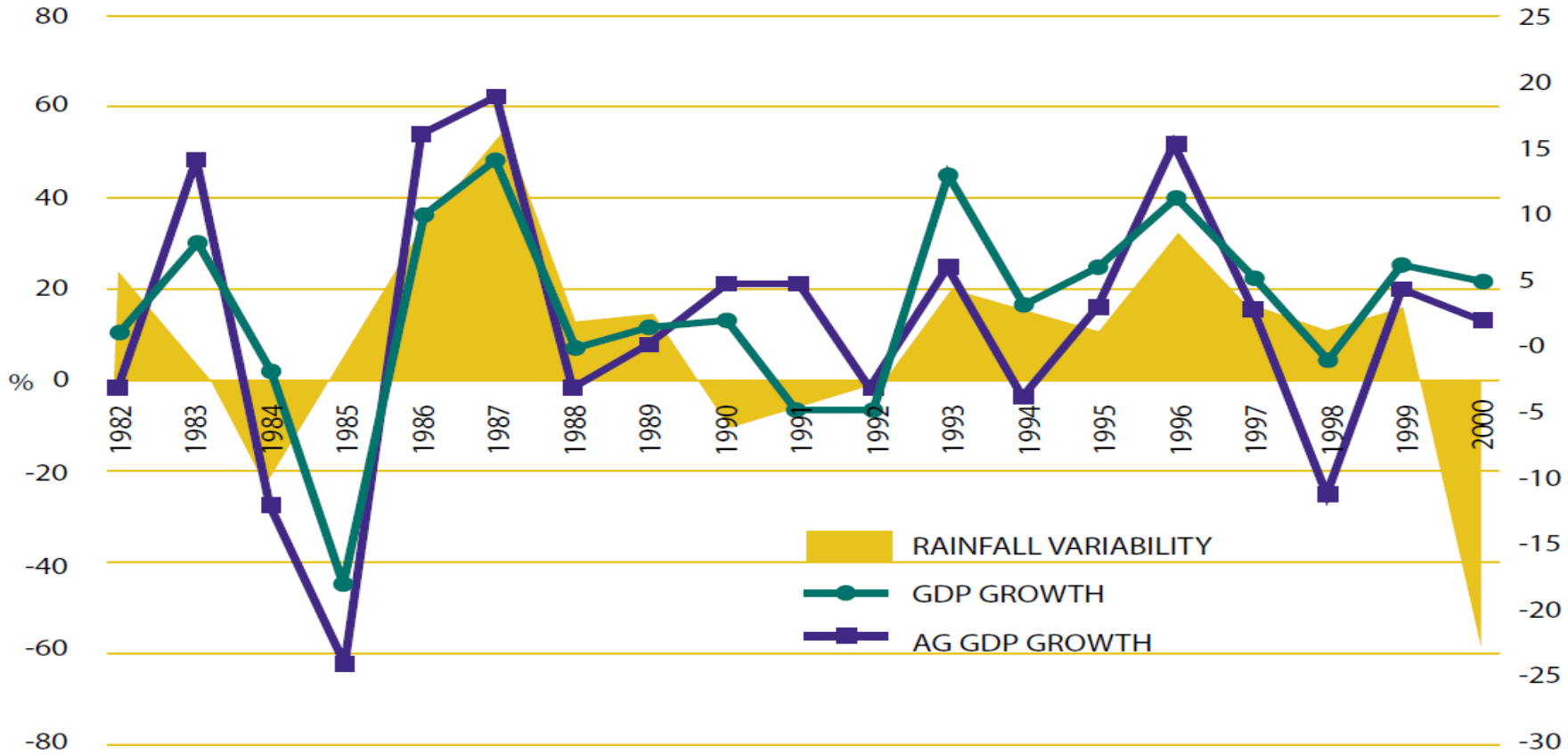
e.g., Rainfall Variability and Ethiopian agriculture and economy



Source: De Jong, The World Bank (2005)

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Addressing and managing climate variability & change through technological and institutional innovations is critical for transforming smallholder agriculture in Africa.

One of such innovations is delivering decision relevant digital climate services (climate smart advisories)

What do we mean by climate services?

- A climate service is a decision aide derived from climate information that assists individuals and organizations in society to make improved ex-ante decision-making (WMO, 2013).
  - Assist climate smart decision making at different levels
- **The service must**
  - respond to user needs,
  - be based on **scientifically credible information and expertise**,
  - engage users and providers, and
  - help society to cope with climate variability and limit the economic and social damage caused by climate-related disasters.

Climate Services ensure that **the best available climate science** is effectively communicated with **agriculture, water, health, disaster risk management** sectors, to develop and evaluate adaptation strategies.

Who needs climate services?

- Farmers
- Agro-pastoralists
- Pastoralists
- Development agents
- Agro-dealers
- Experts
- Policy makers
- Input suppliers
- Processors
- Transporters

An opportunity for digitalization of African extension systems, and agriculture in general.

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Types of climate services/agro-advisories

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Seasonal (3-6 months)

Strategic decisions

e.g.;

Drought and flood outlooks

Crop/variety choice (seed supply)

Time of tillage

Import of inputs

Planting window

Probability pest and diseases incidence

NRM works

Operational (1-15 days)

Tactical decisions

e.g.;

Time /amount of fertilizer application

Proper weeding time

Frost incidence

Harvest time conditions

Spray of pesticides

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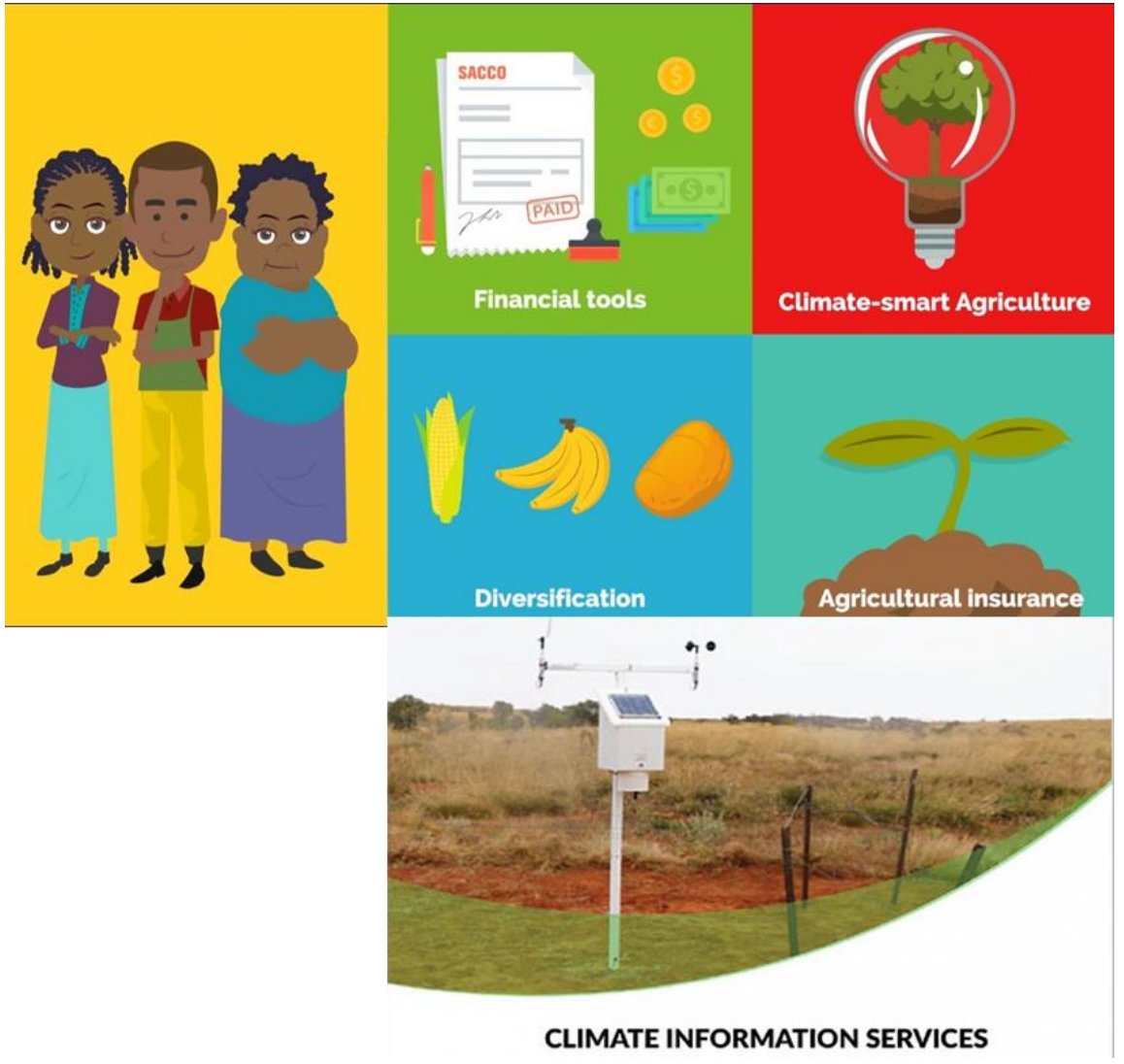
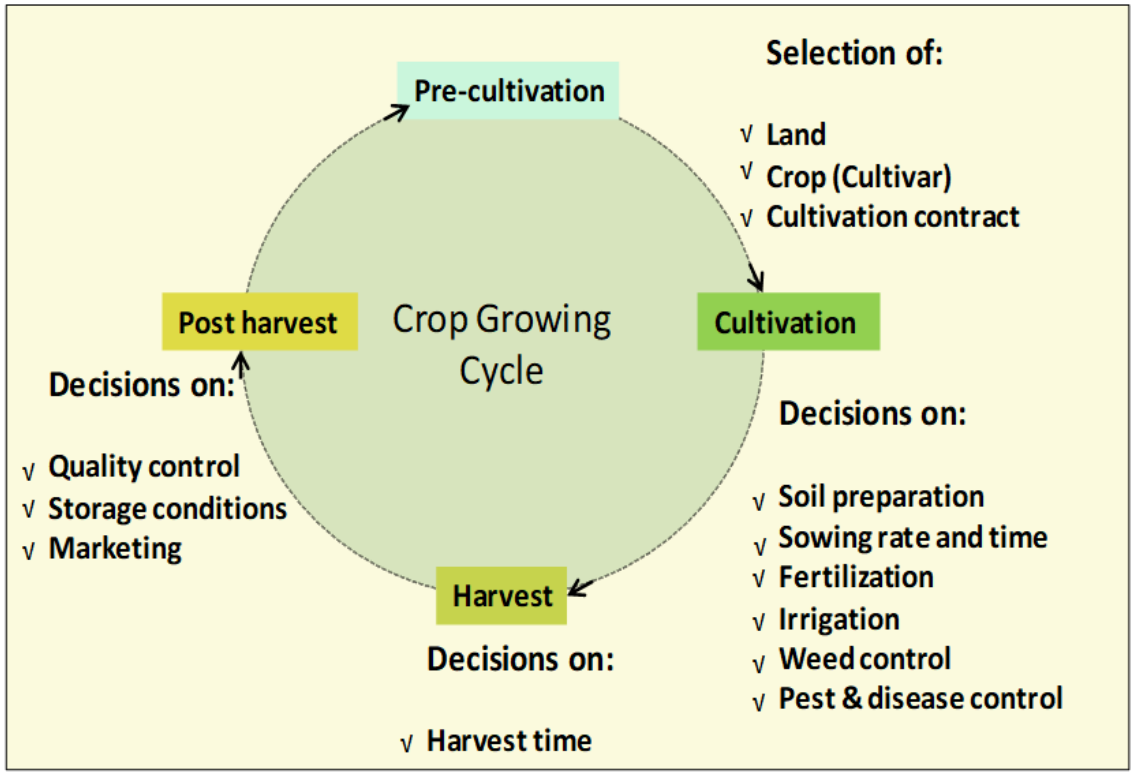
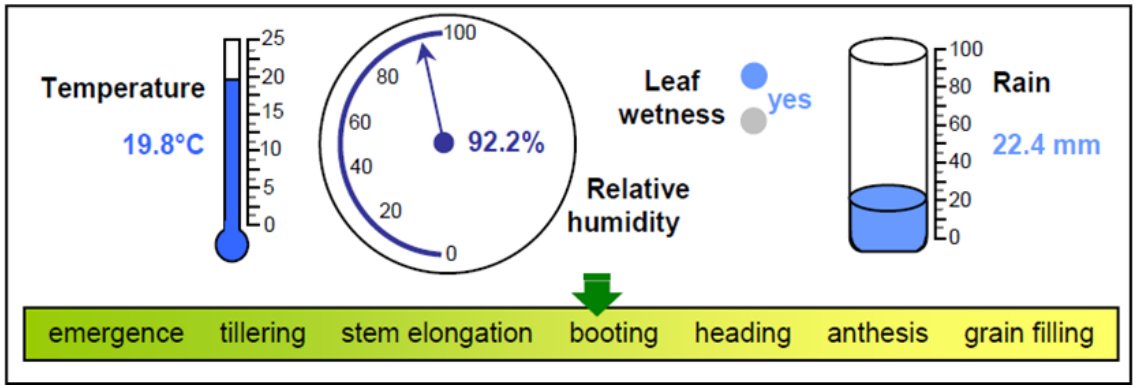
Considerations for climate services

- The farmer/pastoralist is the general manager of the farm business
  - Makes decisions after analyzing the information available to her/him.
- The farmer/pastoralist considers climate information/agro-advisory as part of his/her **risk management decision making.**



Decision relevant climate services/agro-advisories are operation specific





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Delivery of Digital Climate Services

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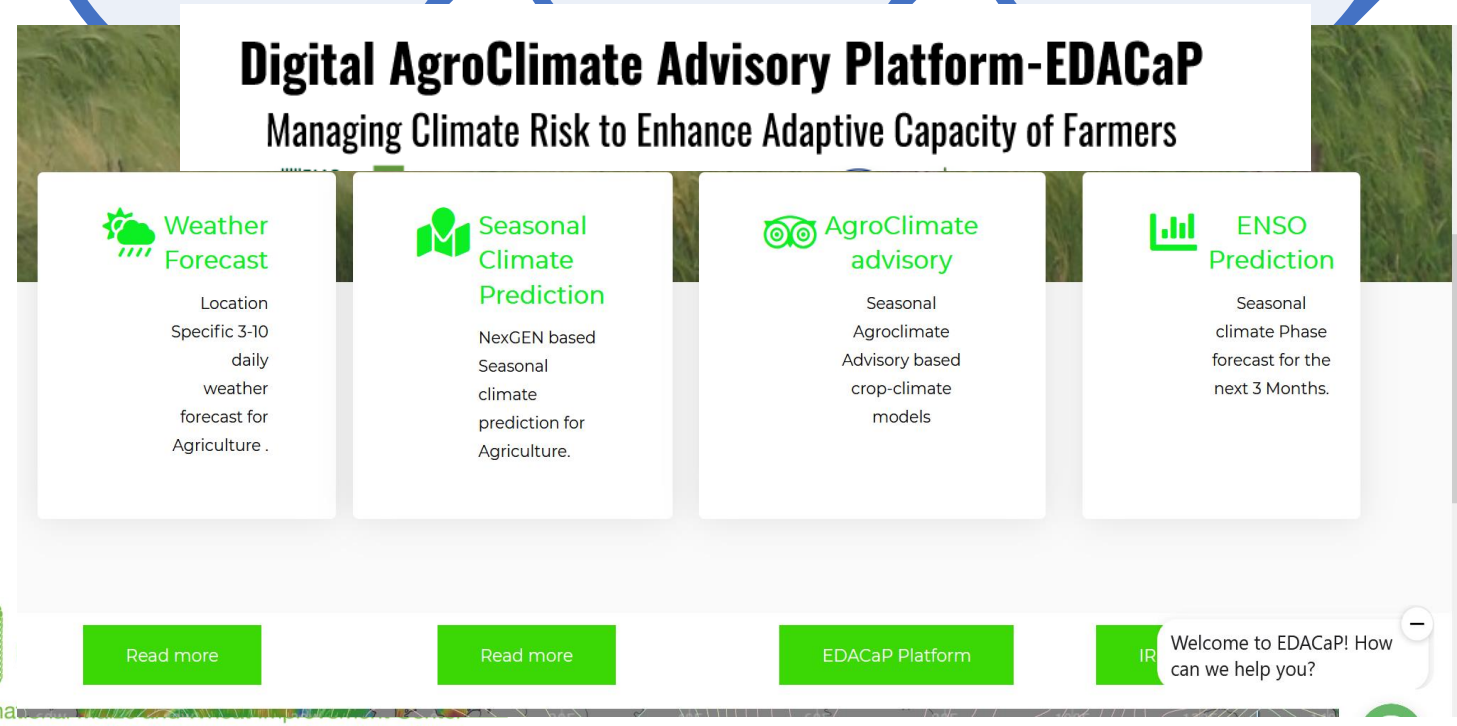
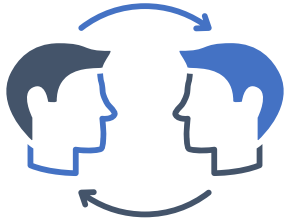
Production → Translocation → Agro-Advisory → Communication → Feedback



Delivery/communication of climate information

Short Message Service (SMS)

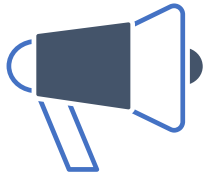
Interactive Voice Response (IVR)



Development Agents (DAs)

Mobile Apps

Website



Mass Media

Integrating digital ag advisory services (bundling)

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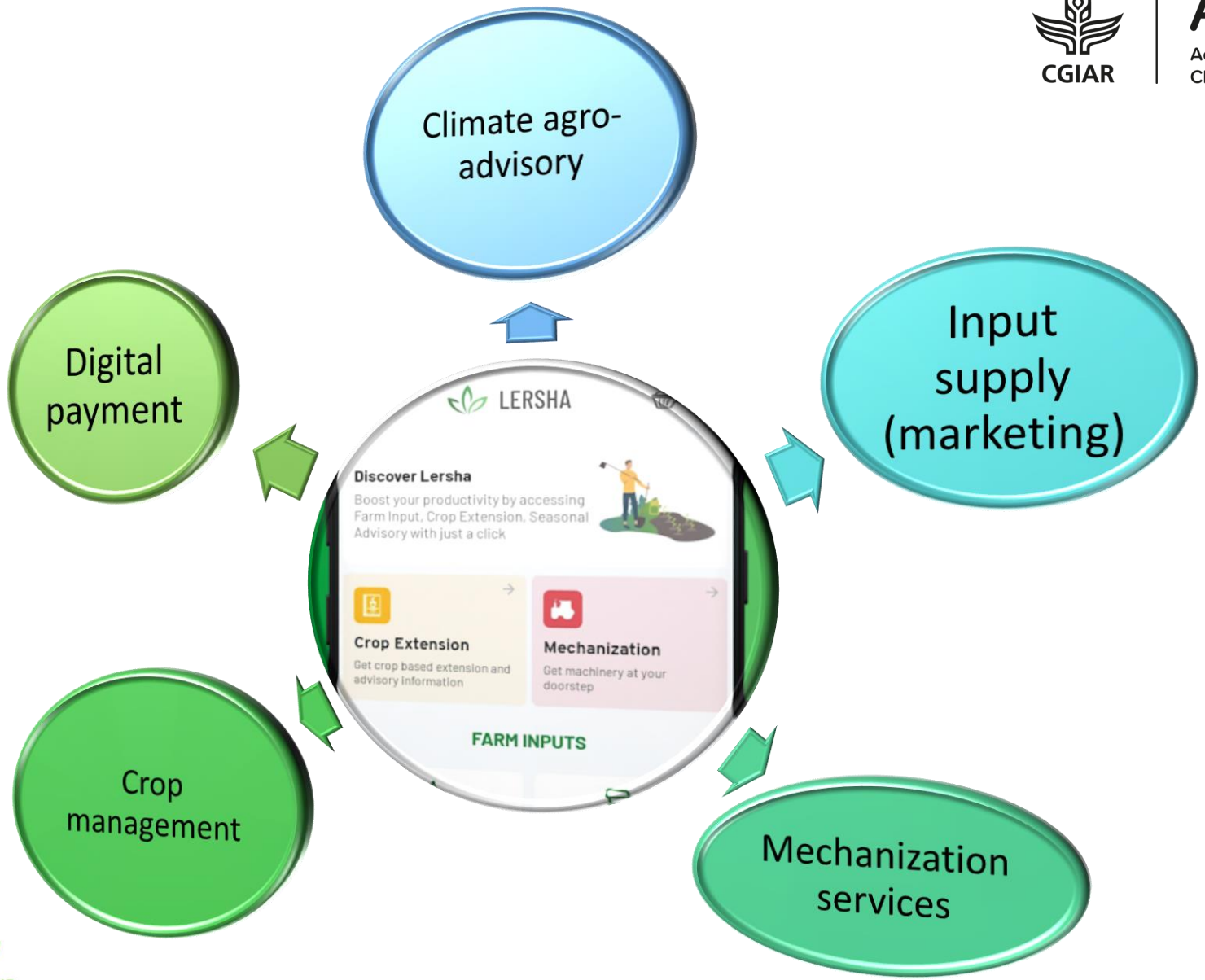

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Concluding Remarks

Climate variability and change and related climate risks are the major bottlenecks of agricultural performance in Africa

Scaling up climate smart advisories at different levels has irreplaceable role in increasing productivity and enhancing adaptation and resilience

Capacity building efforts are needed to have digitally enabled society to reap the benefit of climate services.

Strengthening **public-private partnership** in digital climate services is required to expand access to and relevance of CSs.

Source: LERSHA webpage

Bundling of climate advisories with other agricultural services such as seed and fertilizer delivery, credit services and other input delivery systems is key.

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Concluding Remarks…

- A climate service requires appropriate and iterative engagement to produce a timely advisory that end-users can comprehend, and which can aid their decision-making and enable early action and preparedness.

- Climate services need to be provided to users in a seamless manner and, most of all, need to respond to user requirements.

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Thank you for your interest!

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