TOT on digital advisory services to smallholder farmers

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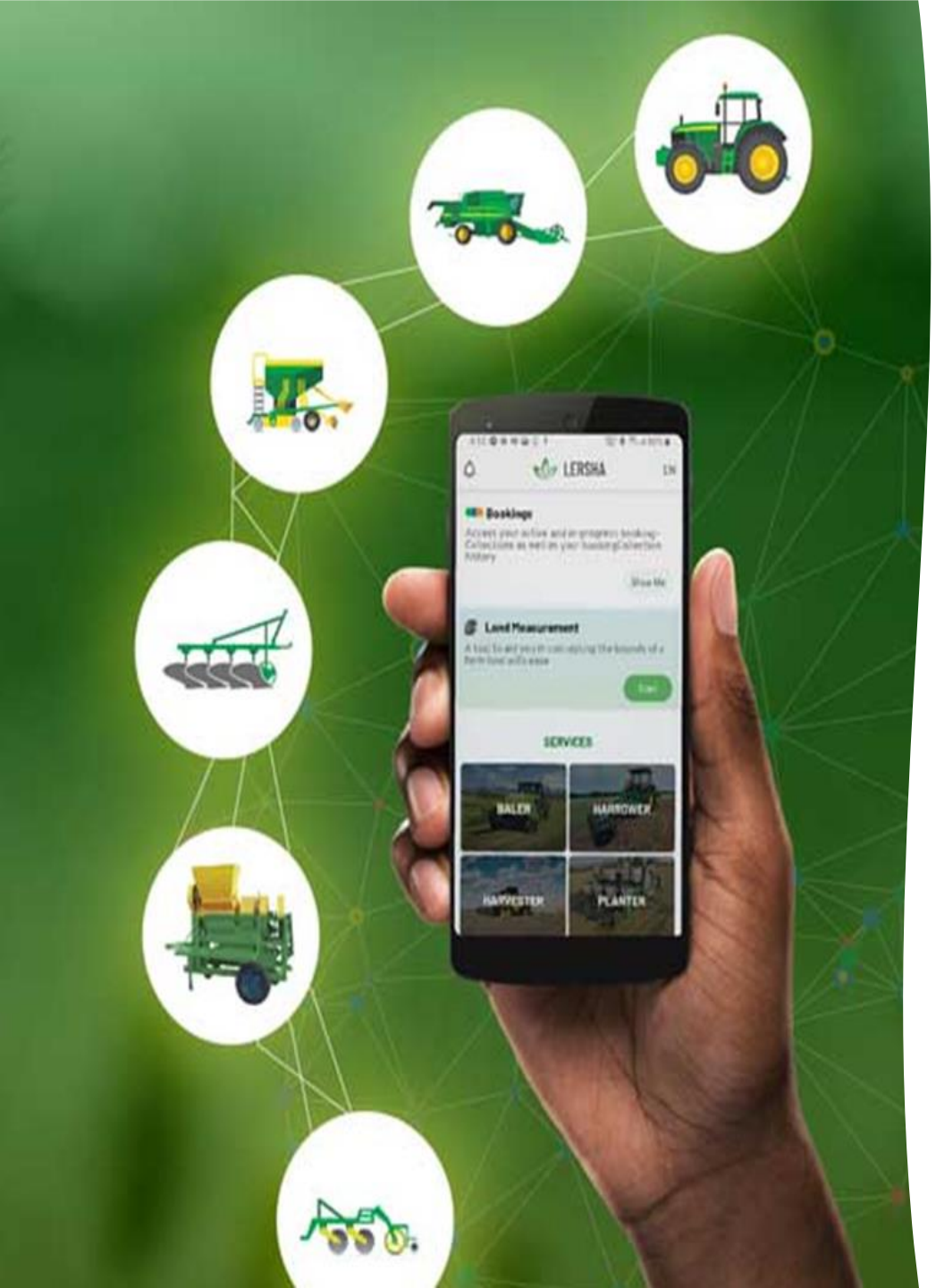

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Outline

Understanding smallholder agriculture

Climate and smallholder farmers

Decision relevant climate agro-advisories

Delivery of Digital-Agro-advisory Services

Integrating digital ag advisory services

Tips for TOTs

Objective

- Mind setting
- Creating clarity on the role of digital climate agro-advisories
- Exposure to TOT considerations

Understanding smallholder agriculture

Agriculture is a Business

- Agriculture is a business, and it has a business model
- Business characteristics
  - Products
  - Services
  - Management
  - Customers
  - Partners
  - Market
  - Risk

Agriculture is a Risky Business

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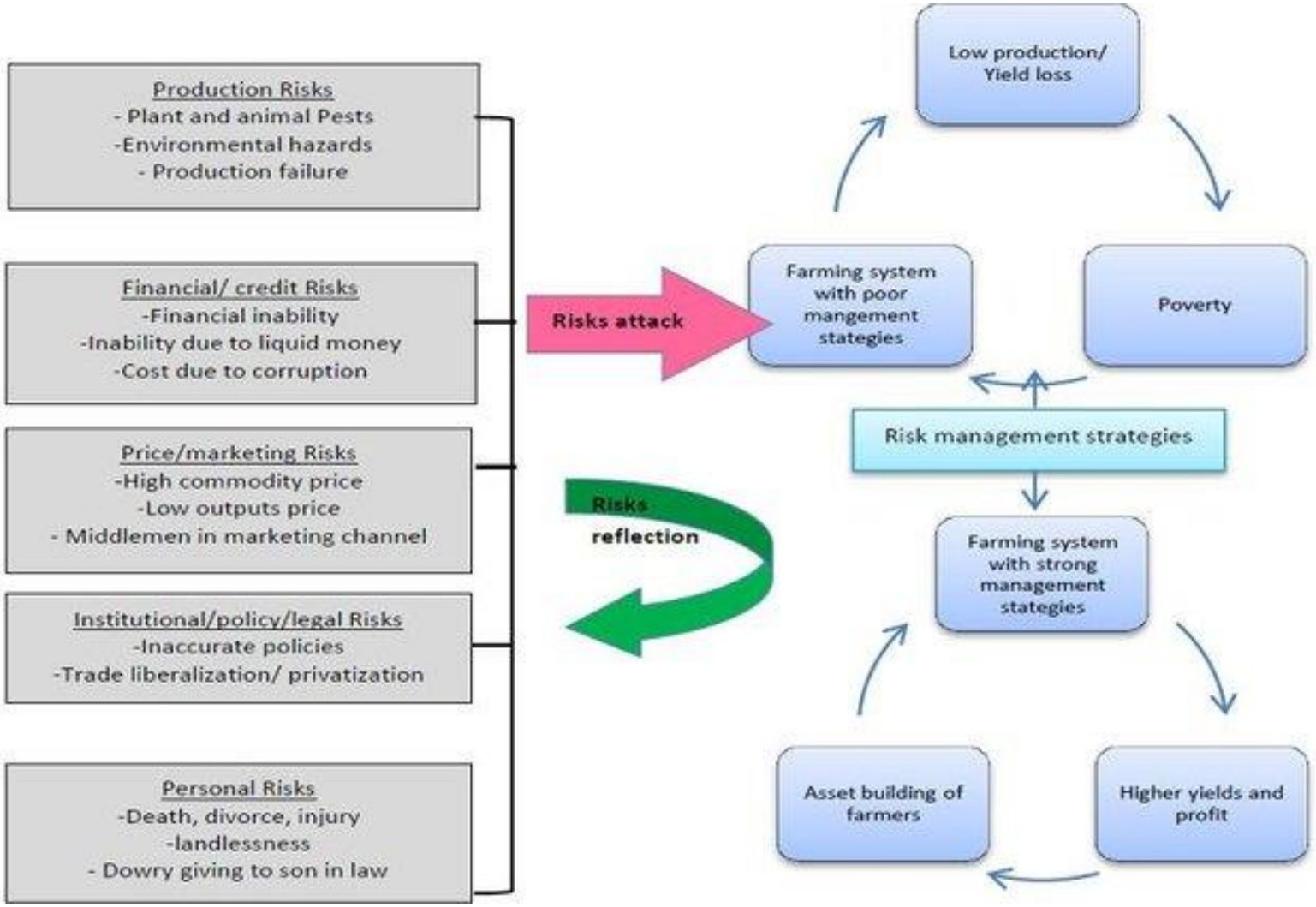
- Farmers are confronted with several challenges every season
- Sources of agricultural risk
  - Climate variability (planting date failures, dry spells, drought, floods)
  - Climate change
  - Timely access to inputs (availability & affordability)
  - Market uncertainty
  - Pests and diseases
  - Timely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



Smallholder Farming in Ethiopia has its own features

- Small plots
- Mixed crop livestock system (draught power, animal products, feed)
- Low input- low productivity
- Inappropriate land use
- Land degradation
- Loss of vegetation
- High climate variability (source of a major risk)

Climate (rainfall) is the major driver of Ethiopian agriculture and economy

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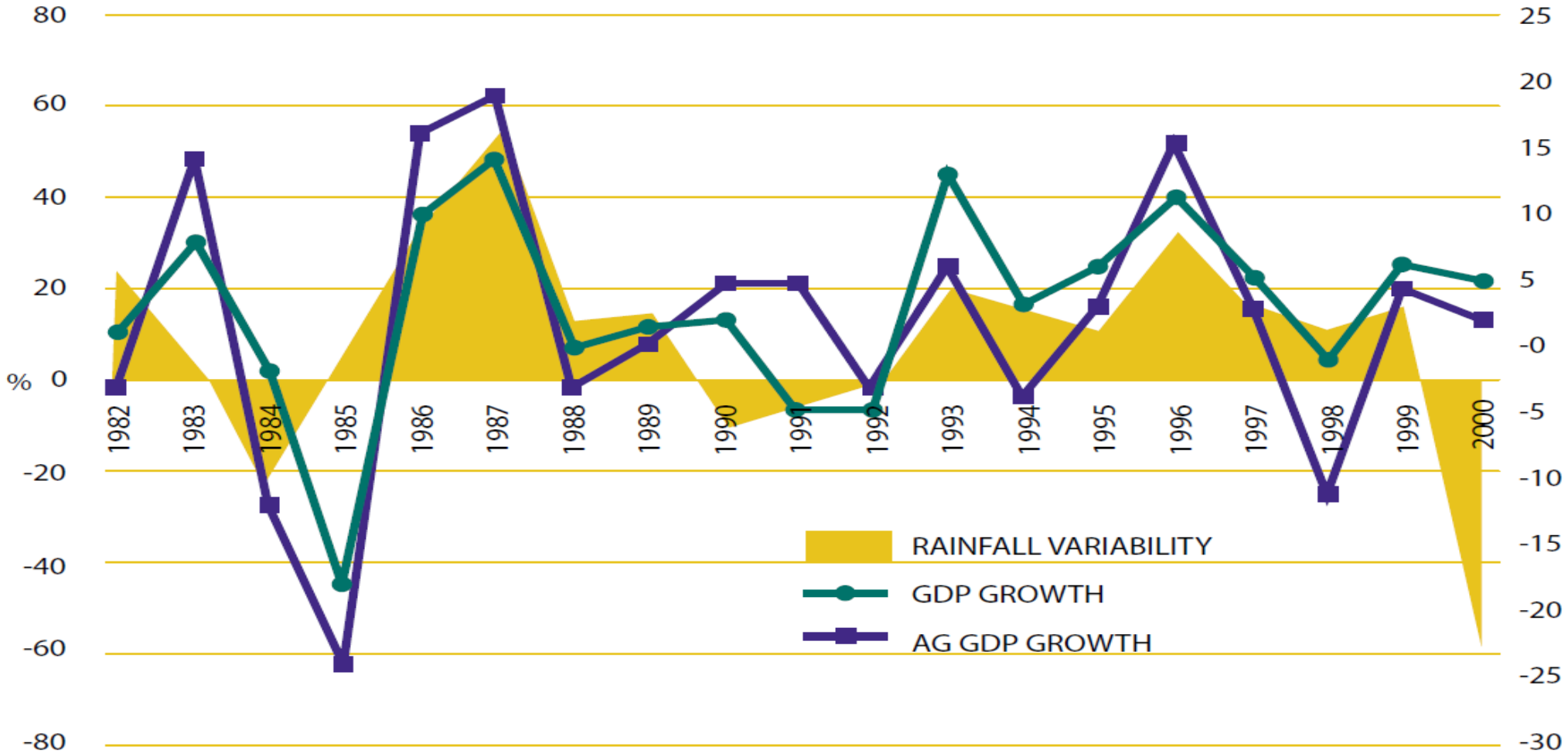
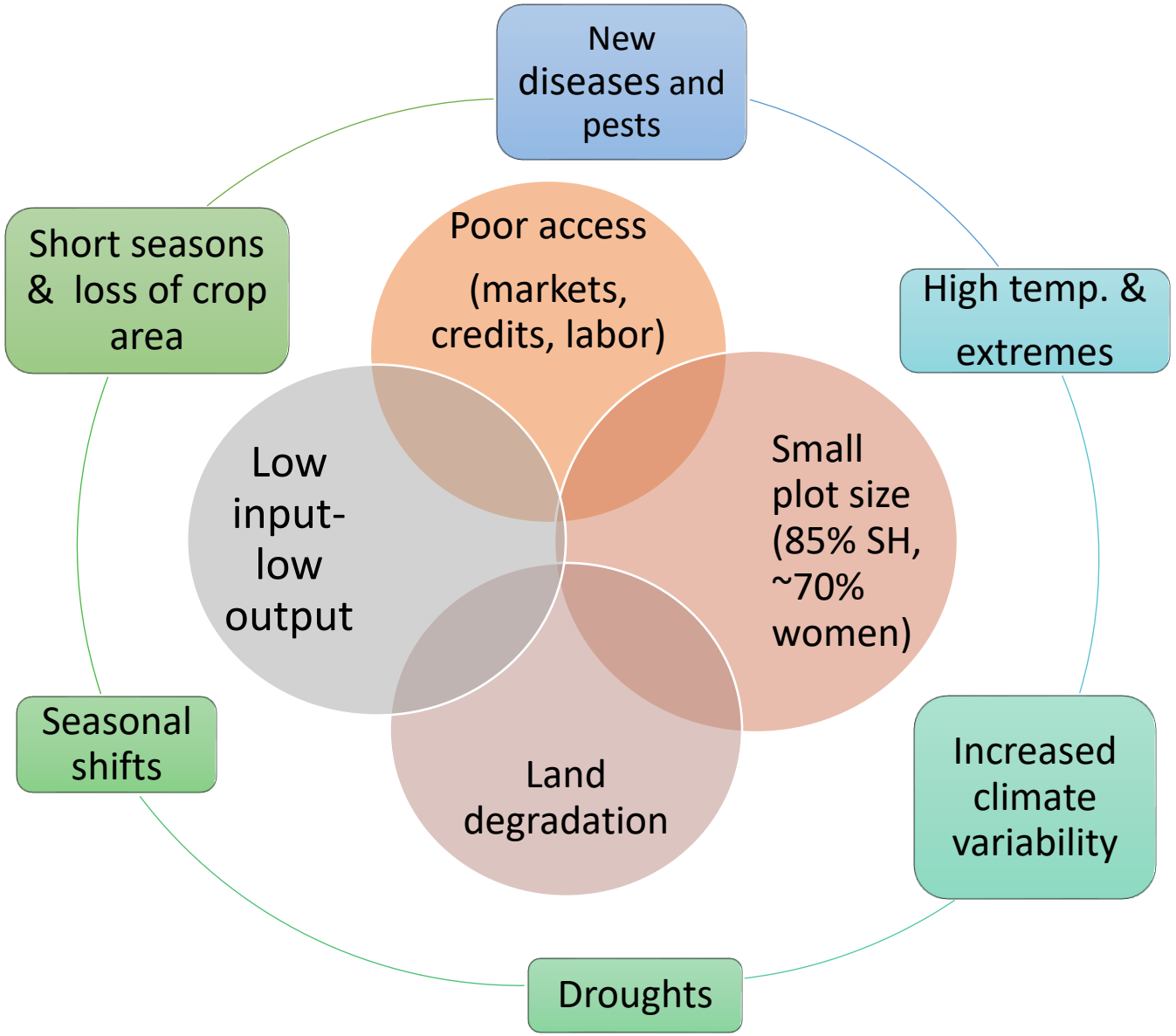


Source: De Jong, The World Bank (2005)

Climate change is exacerbating the challenges of smallholder agriculture in Africa



Smallholder farmers are mostly risk-averse (low adopters of improved technologies)

Fail to exploit opportunities during good years

Vulnerable to climate risks

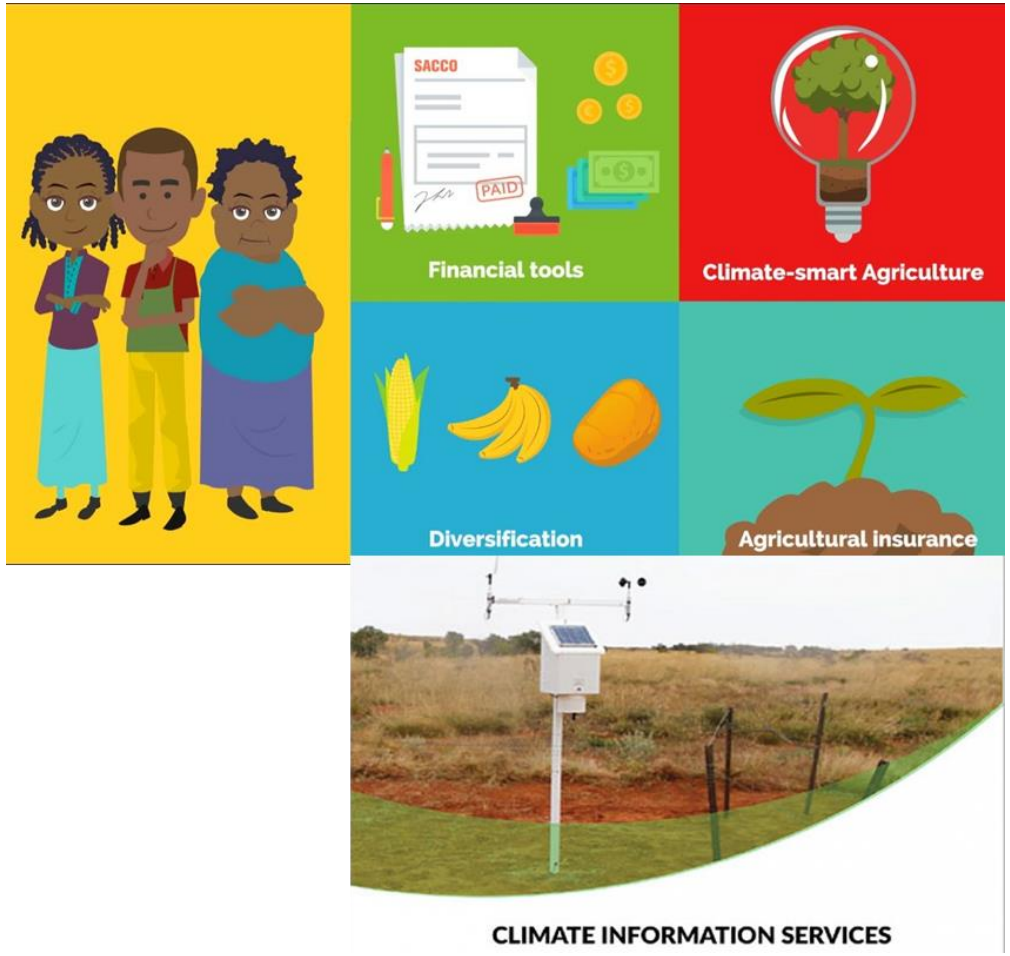
Low adaptive capacity and resilience

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

One of such innovations is delivering decision relevant digital climate agro advisories

Considerations in Climate Agro-advisory Service

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



What is agro-advisory?

- **Agro-advisory** is the delivery of actionable information to users that are relevant to make critical agricultural decisions
  - **Who uses agro-advisories?**
    - Farmers
    - Agro-pastoralists
    - Pastoralists
    - Development agents
    - Agro-dealers
    - Experts
    - Policy makers
    - Input suppliers
    - Processors
    - Transporters

An opportunity for digitalization of the extension system in particular and agriculture in general.

Types of climate 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

Delivery of Digital Climate Advisory Services

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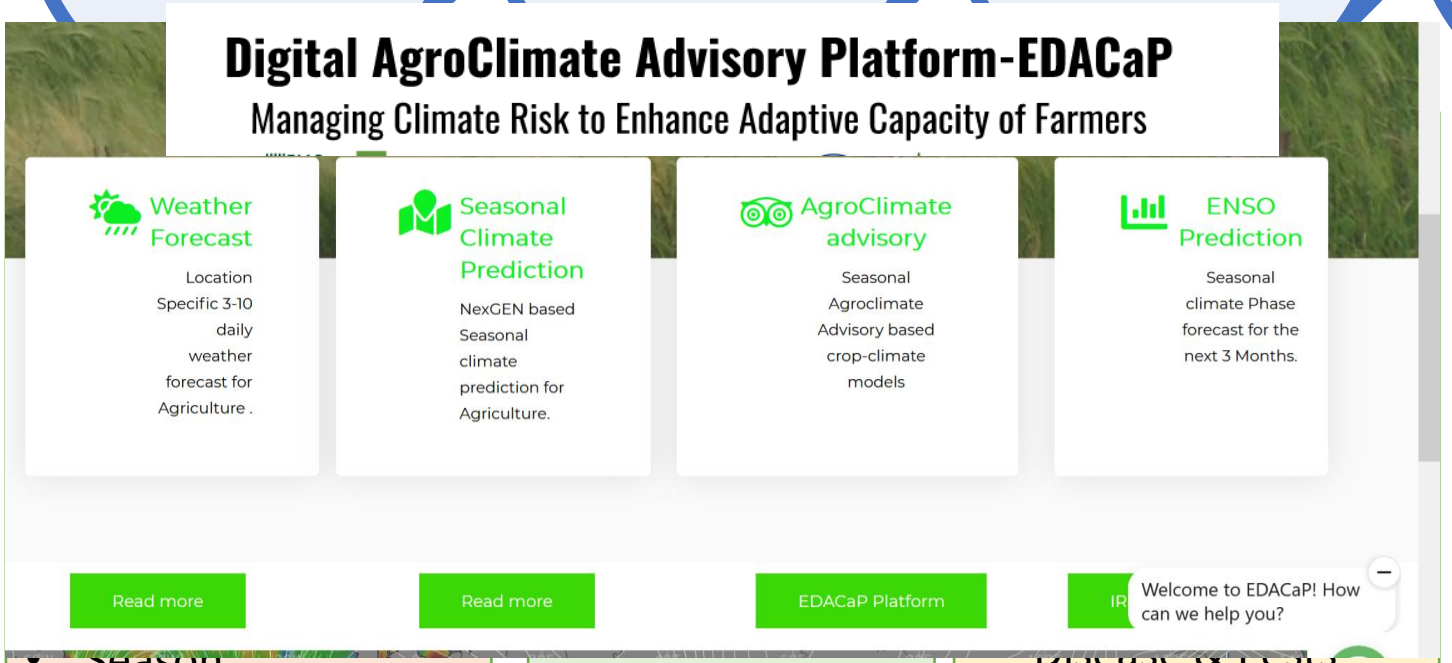
Production → Translocation → Agro-Advisory → Communication → Feedback



- Season
- Disease & Pests
- TV

Example of Seasonal Forecast (2020 Main season)

- Complete land preparation for the main planting season as soon as possible.
- The chance of long-dry spells is minimal across the country, and therefore farmers need to plant as soon as the rains start.
- Except for some pockets, most areas will receive normal or above-normal rainfall. Hence, farmers are recommended to grow high-yielding varieties that can produce more under favorable rainfall conditions.
- The end of the season is also within the expected range, so that farmers need to follow recommended varieties and crop management practices
- Farmers in the northwestern part of the country where below-normal rainfall is projected should not be worried about the rainfall conditions as the areas normally have high rainfall conditions. The lower rainfall conditions may be even favorable as it reduces excess water and runoff conditions.
- Farmers need to be encouraged to follow the short-term advisories that will be given during the growing season.
- In order to exploit the favorable projected seasonal conditions, concerned offices, input suppliers, and dealers need to make sure that agricultural inputs such as seed and fertilizers reach the farmers as early as possible.

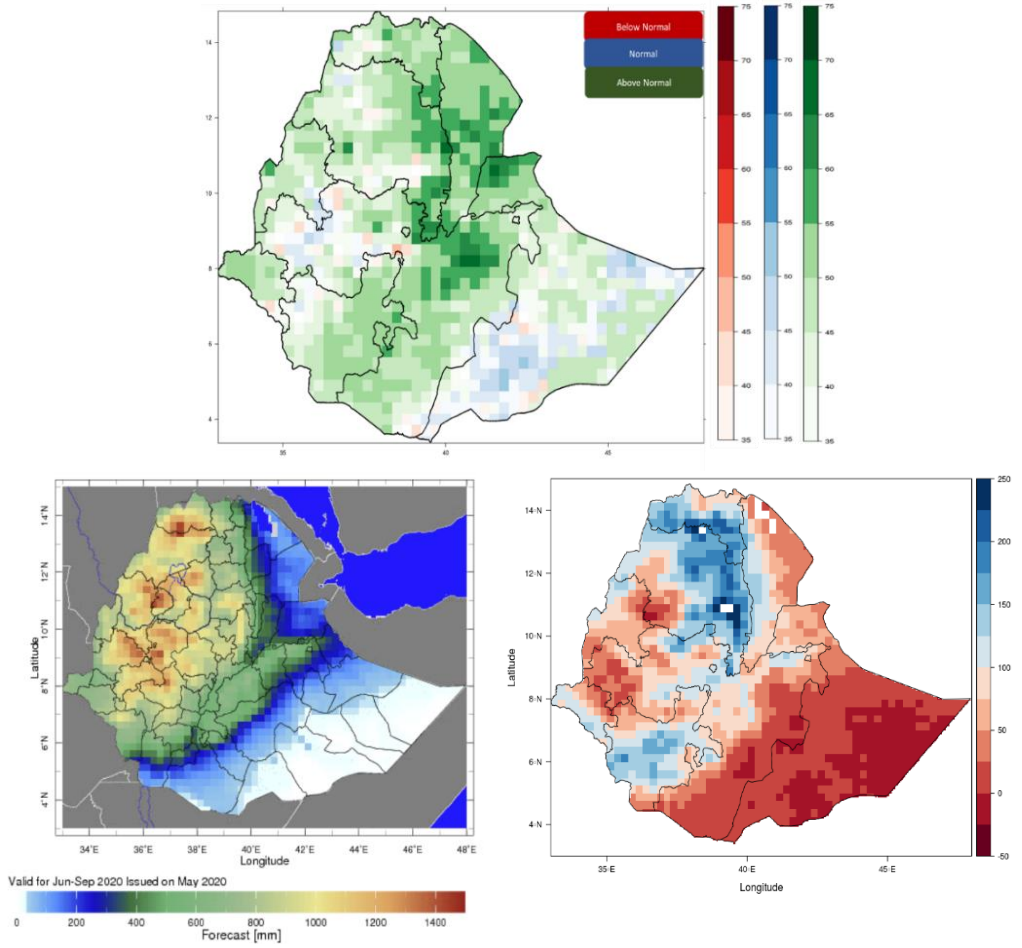


Figure 2 Kiremt 2020 Seasonal Rainfall Prediction based on Eight GCM models updated on May 17, probabilistic forecast (upper), deterministic forecast (lower left), anomaly (lower right)

Example of sub-seasonal advisories (2021Main season)-Wheat Rust Management

- Location: Eteya, Arsi
- Time period: Sept 1-10
- Advisories:
  - **Agricultural advisory: Follow normal agricultural practices, look out for rust incidence**
  - **Rust Advisory: For the next 10 days light rains will be expected; so you are advised to follow normal agricultural practice and most importantly look out for rust incidence.**
-

Decision relevant climate agro-advisories are crop-stage specific

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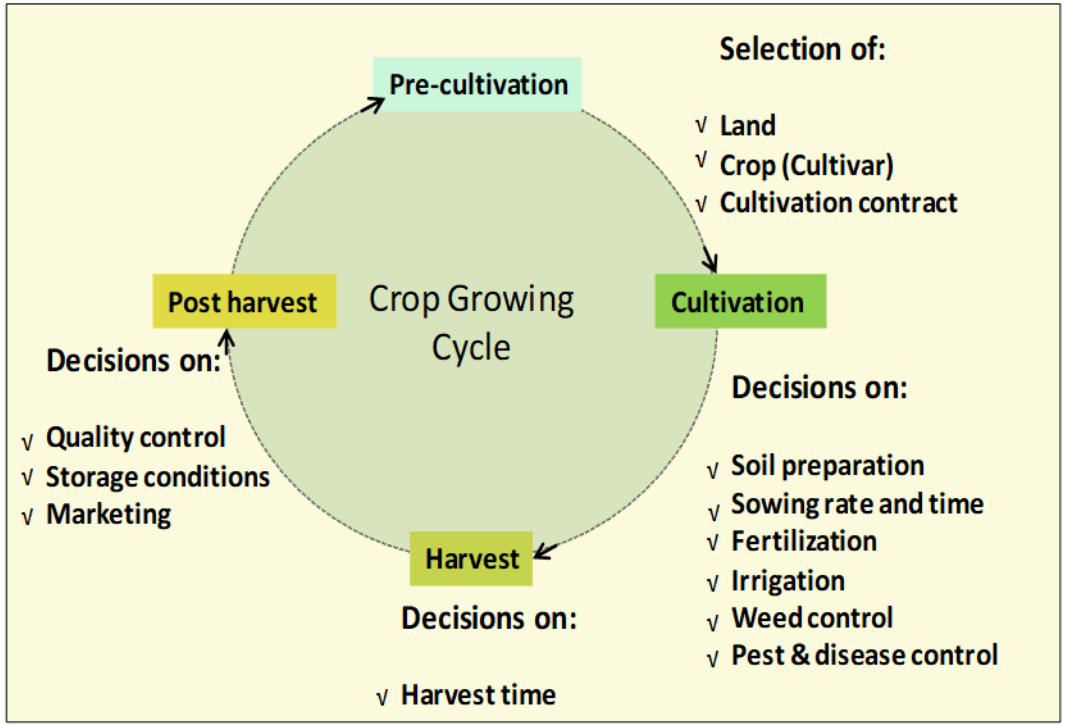
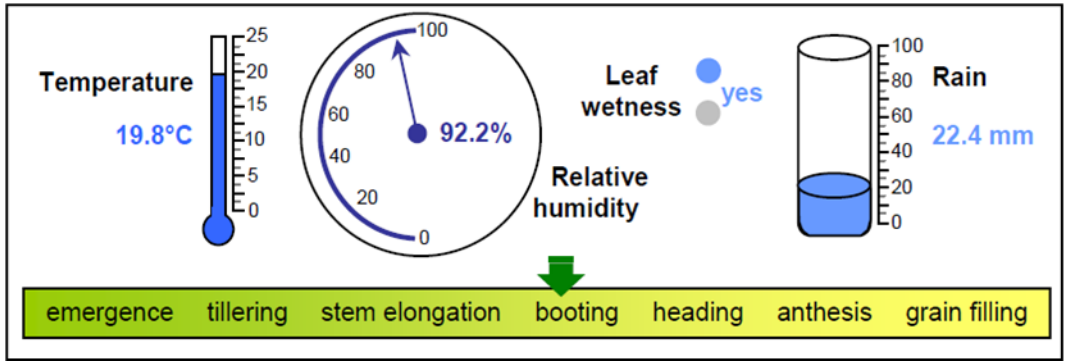
Seasonal (3-6 months)

- Strategic decisions
- e.g.; Crop/variety choice; Import of inputs

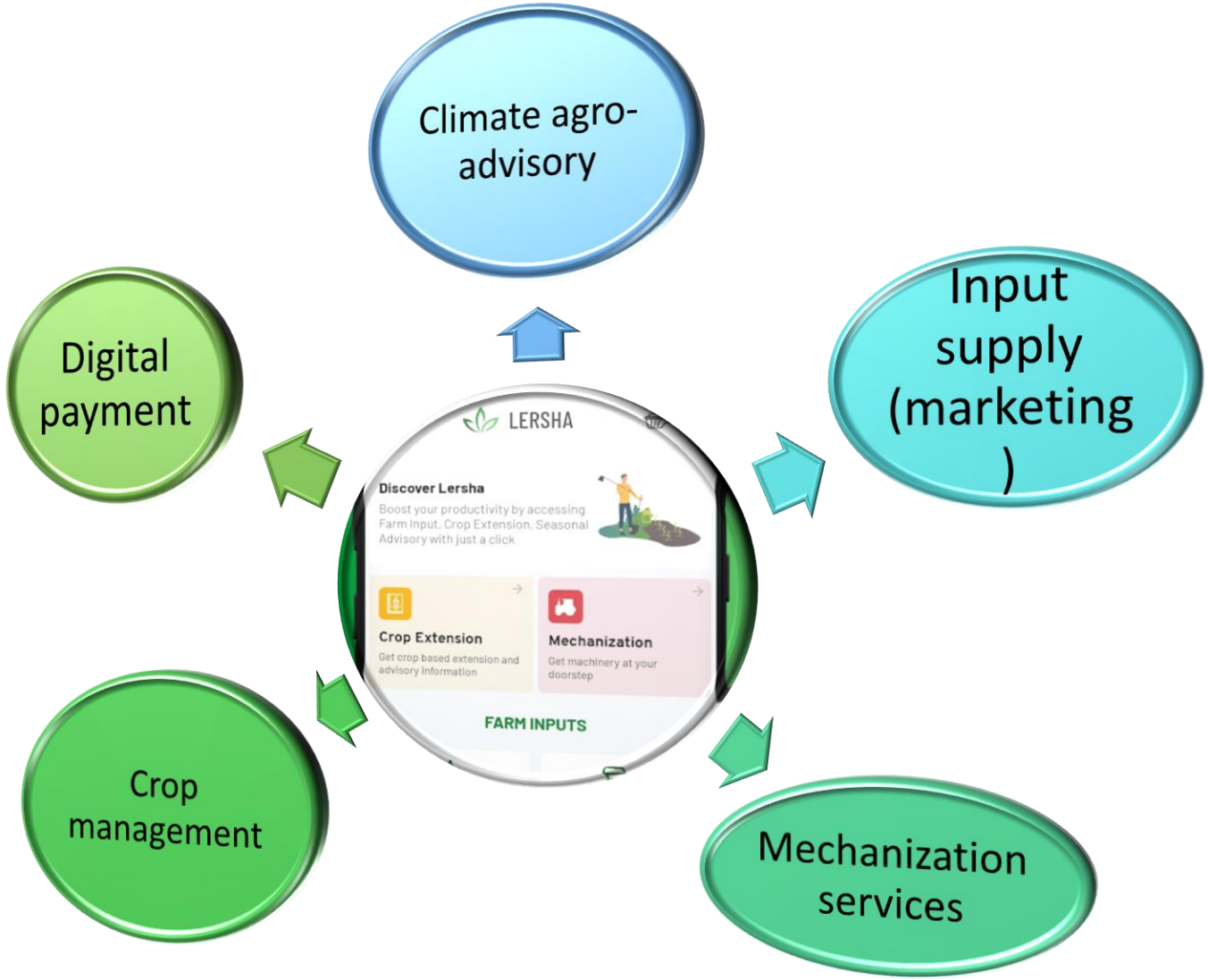
Operational (1-15 days)

- Tactical decisions
- e.g. Time /amount of fertilizer application; Spray of pesticide





Users of agro advisory services (bundling)



Target Users

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

Challenges of the current extension system on advisory delivery

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Package-based – very static

- Ignores the seasonal variation and dynamics of agricultural activities

Mostly depends on once-acquired knowledge and skill of DAs

- DAs rarely update their knowledge and skills (most of them in remote areas)
- They have limited tools for decision making

The opportunity of using digital tools is limited (e.g., mobile apps)

- Less-versed in using professional tools compared to social media apps.

DAs are not well-versed in the use of climate information for agricultural decision making

- Need for strong capacity building

Considerations in the Training of DAs

1. **Orient the DAs to climate related challenges in their area (Kebele)**
2. **Give them time to identify the climate related challenges**
   - Give them hints (e.g., unpredictable plating season, short dry spells, long dry spells, flood, water logging, frost, extreme heat, diseases, pests, etc.)
   - Ask them how they manage these risks currently
   - Ask them what kind of information they get currently and would like to get
3. **Proceed to your training**
4. **Give the trainees to give feedback/reflect**

Considerations in the Training of Framers

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1. **Ask the farmers to list down the challenges they are facing**
2. **Narrow down the challenges to climate related challenges in their Kebele**
3. **Give them time to identify the climate related challenges**
   - Give them hints (e.g., unpredictable plating season, short dry spells, long dry spells, flood, water logging, frost, extreme heat, diseases, pests, etc.)
   - Ask them how they manage these risks currently
   - Ask them what kind of information they get currently and would like to get
4. **Proceed to your training**
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General Tips for Trainers

- Understating the whole spectrum of the sector is important (**sector scan**)
- Scan the specific situation of the Zone/District/Kebele/culture/ socio-economic conditions/ current situations, etc. (**environmental scan**)
- Pre-information about trainees is critical (knowing the target audience) – **audience scan**
- Be prepared (every training is different even if the content is the same) – **self scan**
- Be flexible and adjust to the condition (**condition scan**)

Concluding Remarks

Questions

Suggestions

Reflections

Comments

Important messages

*Take home message

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