



7TH  AGRIFIN
LEARNING
EVENT

7th & 8th November
Nairobi, Kenya

**DIGITAL CLIMATE
SMART AGRICULTURE:
INVESTMENT NEEDED!**

#ALE2023 #AgriFinALE2023

What Is Digital Climate Smart Agriculture?

Digitally enabled products and services targeted to drive climate smart agriculture results for farmers including increased adaptation, resilience and production with mitigation co-benefits.

DIGITAL:

rapidly growing space, constantly innovating, can be quickly adjusted based on learnings, fast to scale, actors are proliferating

Design, test and scale solutions

Build evidence base for DCSA

Bring climate into the digital ecosystem and digital into the CSA ecosystem

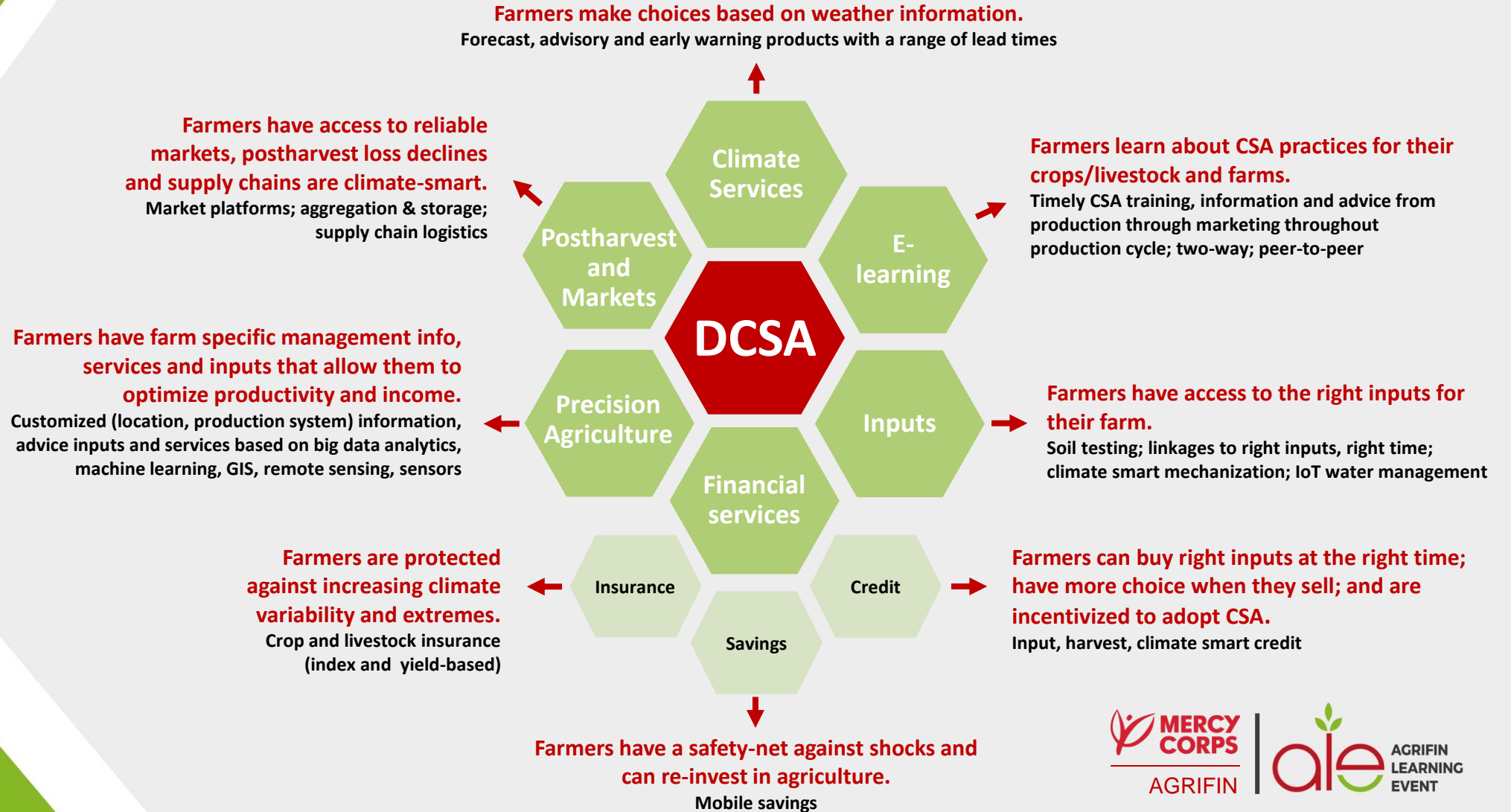
CSA:

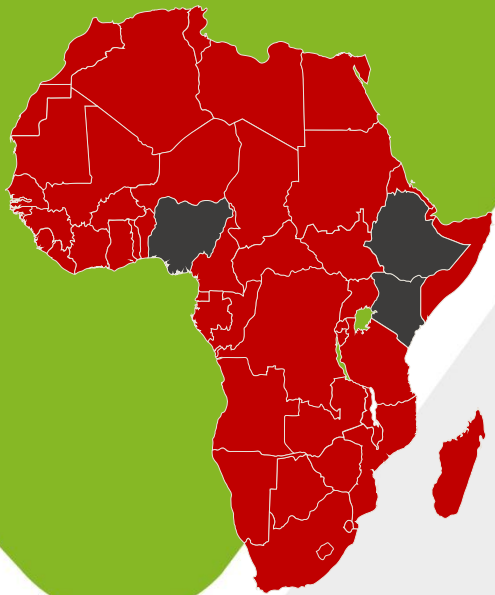
helps to address the massive climate challenges for SHFs happening now, needs to scale quickly, requires tailored approaches

The Three CSA Pillars

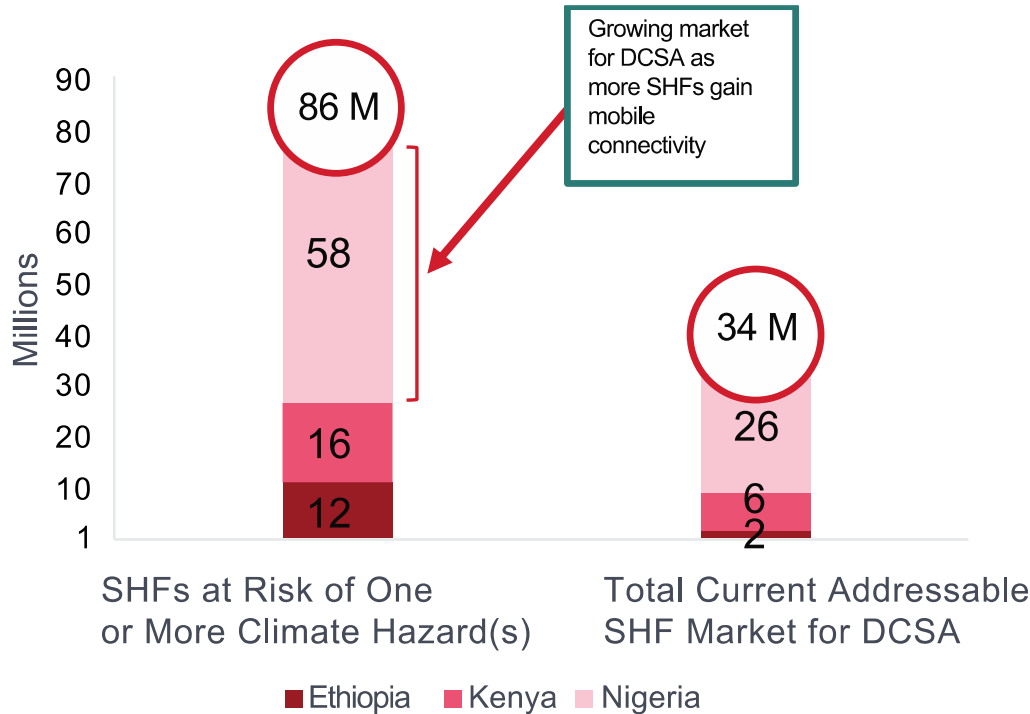


High potential DCSA solutions can be found throughout the value chain





Total addressable market for DCSA: Ethiopia, Kenya and Nigeria



Growing market for DCSA as more SHFs gain mobile connectivity

*Climate hazards: climate variability, drought, flood, dry conditions, thermal stress
 **SHFs who need and can use DCSA calculated as # of SHFs at risk of climate hazards x rural mobile penetration

Total Addressable Market for DCSA services in Ethiopia, Kenya and Nigeria = 34 M SHFs

- **Opportunities for DCSA are larger in Kenya and Nigeria** due to climate hazards + higher mobile usage among farmers.
- **The TAM for DCSA will grow as mobile connectivity for SHFs grows.** The number of SHFs facing climate hazards far exceeds the number who can currently access digital solutions.

KENYA EXAMPLE

Total addressable market for DCSA



16
million
SHFs are
facing
climate
hazards



41%
of the rural
population has
mobile
connectivity



6.6
million



SHFs in Kenya need and have the ability to utilize DCSA
More than 9 M SHFs facing climate hazards cannot access DCSA; as mobile connectivity and digital literacy grow the TAM will increase

Sources: AgThrive analysis; Alliance of Bioversity and CIAT analysis. Hazard layers modeled by Alliance Bioversity-CIAT scientists using this methodology:
<https://cgspace.cgiar.org/handle/10568/115166>

KENYA EXAMPLE

Majority of SHFs face climate hazards with variability affecting the most people

What does this mean for SHFs?

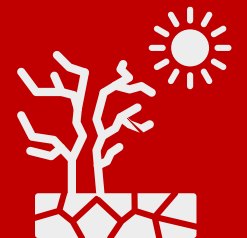
- 1** A majority of farmers in Kenya are **at risk of climate variability**. Farmers may experience variable onset and poor distribution of rains making it difficult to plan and execute a successful growing season, especially in rainfed systems. Climate variability also means more frequent extreme events such as drought and flooding.
- 2** For most farmers, climate variability will lead to **increased risk of drought**, reducing yields, leading to crop loss and shifting the suitability of crops for different cropping systems.
- 3** For some farmers, climate variability will mean **increased flooding episodes**, destroying crops and exacerbating soil erosion.
- 4** Many farmers not experiencing drought will contend with **increasingly dry conditions and thermal stress**, causing water and heat stress for crops and livestock, reducing productivity and at times leading to complete crop failure and high morbidity for livestock.

Sources: AgThrive analysis; Alliance of Bioversity and CIAT analysis. Future scenario created based on an ensemble of 5 CMIP5 GCMs at 2050 (RCP 8.5) compared with the current time period.
<https://cgspace.cgiar.org/handle/10568/113289>

Top 5 Climate Hazards	SHFs at Risk (millions)
Climate variability	10
Drought	8
Dry conditions	6
Thermal stress	5
Flood	2

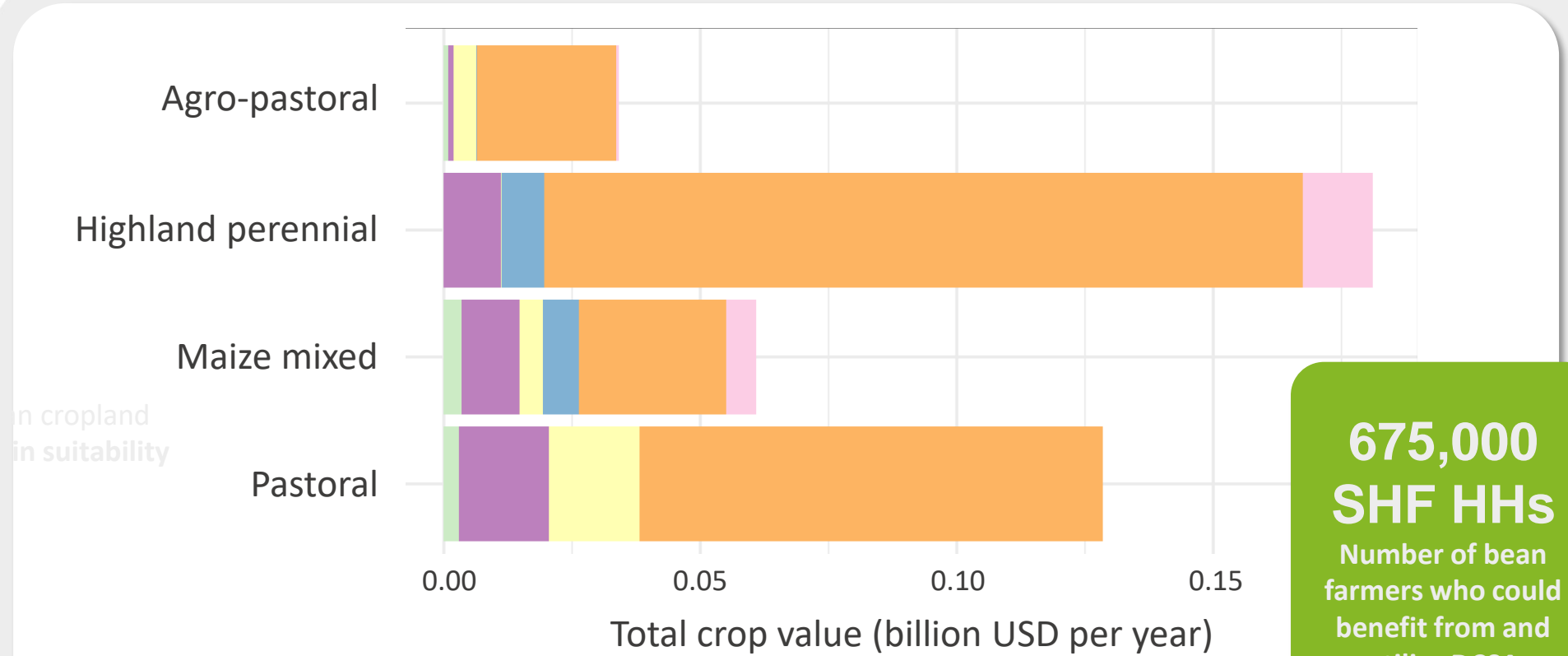
More than half of SHFs face climate variability mostly in the form of increasing but unpredictable drought and dry conditions.

15 M SHFs have experienced and will continue to face two or more climate hazards.



KENYA

Example: DCSA Opportunities Beans x Climate Hazards



Hazard Category

- High Climate Variability
- Climate Variability with Thermal Stress
- Climate Variability leading to Drought
- Climate Variability leading to Flood
- Dry Conditions with Thermal Stress
- Dry Conditions with Flood
- Dry Conditions with Thermal Stress and Flood



Unlocking Climate Finance

Climate finance:  Not only carbon credits!

Any finance supporting climate mitigation and adaptation!



Mechanisms
Grants
Market based and concessional loans
Guarantees
Private equity
Carbon credits



Finance Providers
Development Finance Institutions (e.g. IFC)
Donors (e.g. BMGF, World Bank)
Impact Investors (e.g. BlueOcean, ClimateShot)
Commercial Banks

The DCSA Finance Gap

Climate tech start-ups targeting SHFs are proliferating in SSA....but they don't have access to the finance they need to bring their solutions to market and achieve scale.

Only **USD 8.1 billion** of the tracked **climate finance** of USD 20 billion for ag/forestry/land use **targets small-scale farmers, agri-entrepreneurs and value chain actors** serving them.

Ag tech captured just **14% of climate tech funding** from 2014-2022.

A critical barrier for DCSA innovations is the need for **early R&D investments**. Many cutting edge DCSA technologies, practices and services are at a nascent stage of development and innovators face major challenges attracting investment for testing and piloting.

Ignitia, a weather forecasting company and AgriFin partner: spent 6 years running 121 experiments before going commercial with their 48 hr. rainfall forecasting service delivered by SMS!

Sources: Climate Policy Initiative and IFAD 2020; Briter Bridges 2022 Climate Tech Innovation in Africa

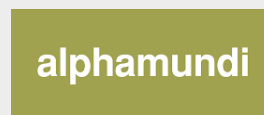


The DSCA Financing Opportunity

Investors making deals in CSA include:



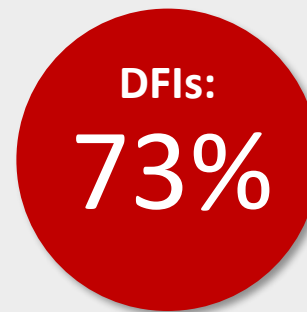
Triodos  Investment Management



There are signs that investments in CSA and circular innovation are on the rise. *Solar irrigation raised 10% of the total start-up funding in Africa from 2015-2022.*

A recent analysis of 107 DFIs, impact investors and donors in East Africa revealed that more than half(52%) prioritize climate mitigation and adaptation in their investments.

Investors prioritizing climate related financing:



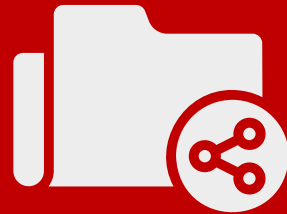
Sources: AgThrive Investor Landscape, 2023; Briter Bridges and The Alliance of Bioversity and CIAT, 2023



Call to Action

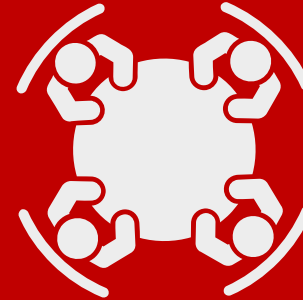


1



Get data sharing working

2



Investors + donors + development actors to work together to de-risk DCSA

3



Invest in acceleration

Thank You!

