Empowering Smallholders with Digital Advisory Service and AI in Sub-Saharan Africa

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Why Traditional Advisory Still Matters but Falls Short

- Limited farmer participation in design and delivery
- Resource and capacity constraints among extension agents
- Top-down approaches ignore local context
- Gender and youth often excluded
- Unable to scale or adapt to rapidly changing agri-climatic conditions

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Digital and AI tools/services can bridge gaps

Potentials of Digital Advisory Services (DAS)

- Millions of smallholder farmers and agribusiness and communities who can benefit from DAS
- Technologically adept young population, with average of 19 yrs.

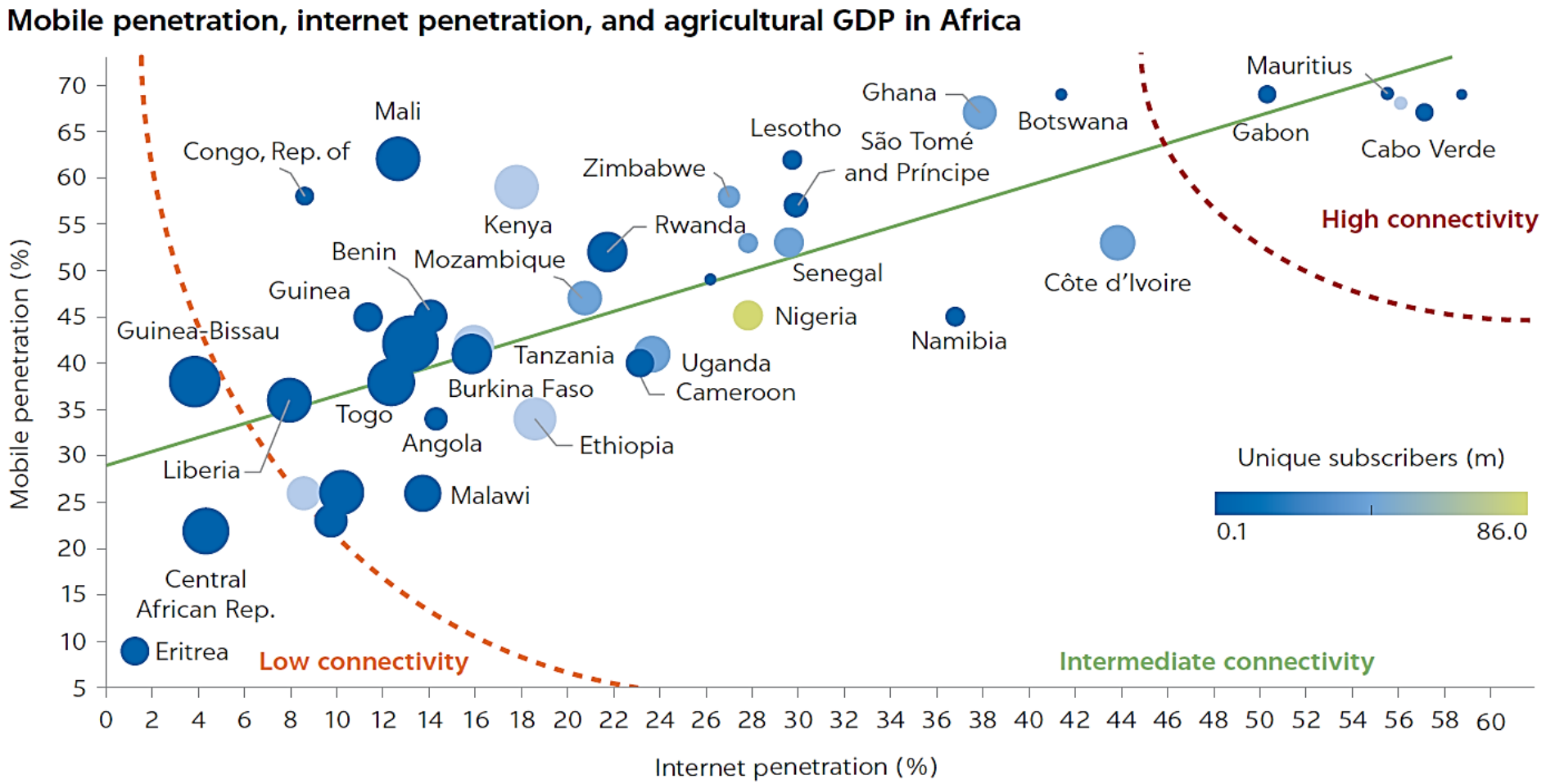
Source: GFUSA

Possibility to bundle several services at the same time

Mobile and Internet Penetration: The Entry Points

- Mobile and internet access growing, especially among youth
- Digital divides remain across regions, gender, and wealth

Source: World Bank / Kim et al., 2020



Evidence: DAS Can Be a Game Changer

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FUTURE of FOOD

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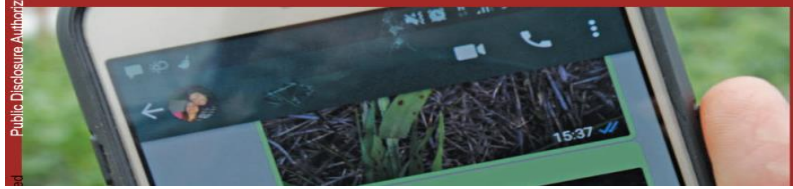

Public Disclosure Authorized

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- €144M in benefits from basic DAS (GSMA, 2020)
- 40–75% yield/income increases (AfDB, 2023; Fabregas et al., 2019)
- Effective DAS enhances resilience and informed decisions

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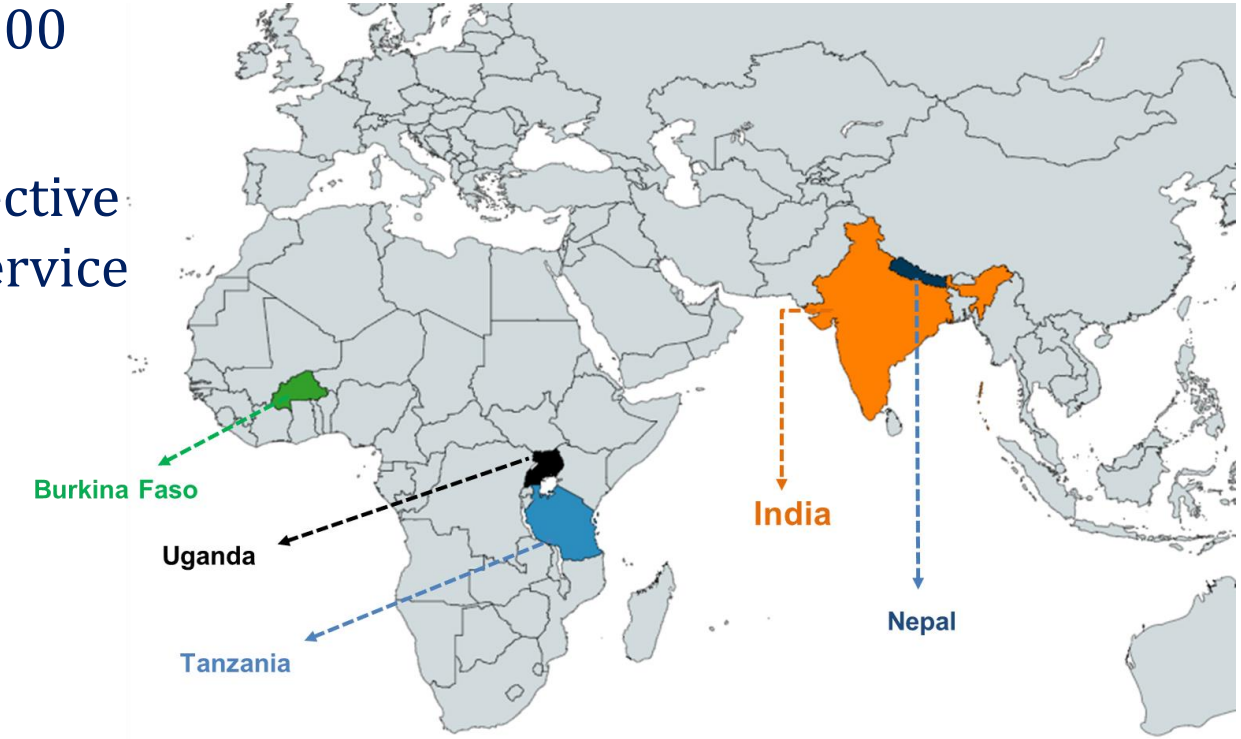
AgriPath – Testing What Works

- DAS delivery mechanisms have not yet been explored
- A consortium project aiming to empower 150,000 farmers across Africa and Asia.
- Research to identify, examine, and promote effective gender models of delivering Digital Advisory Service (DAS) to promote sustainable agriculture.
  - ➢ Self-service
  - ➢ Agent-based
  - ➢ Hybrid



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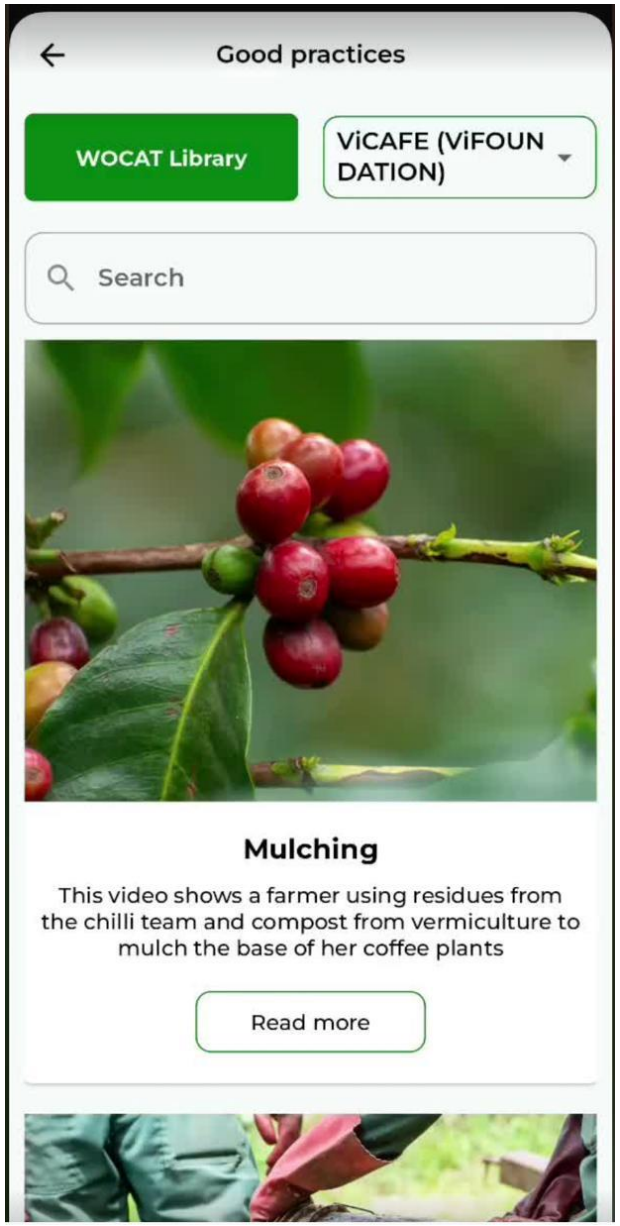
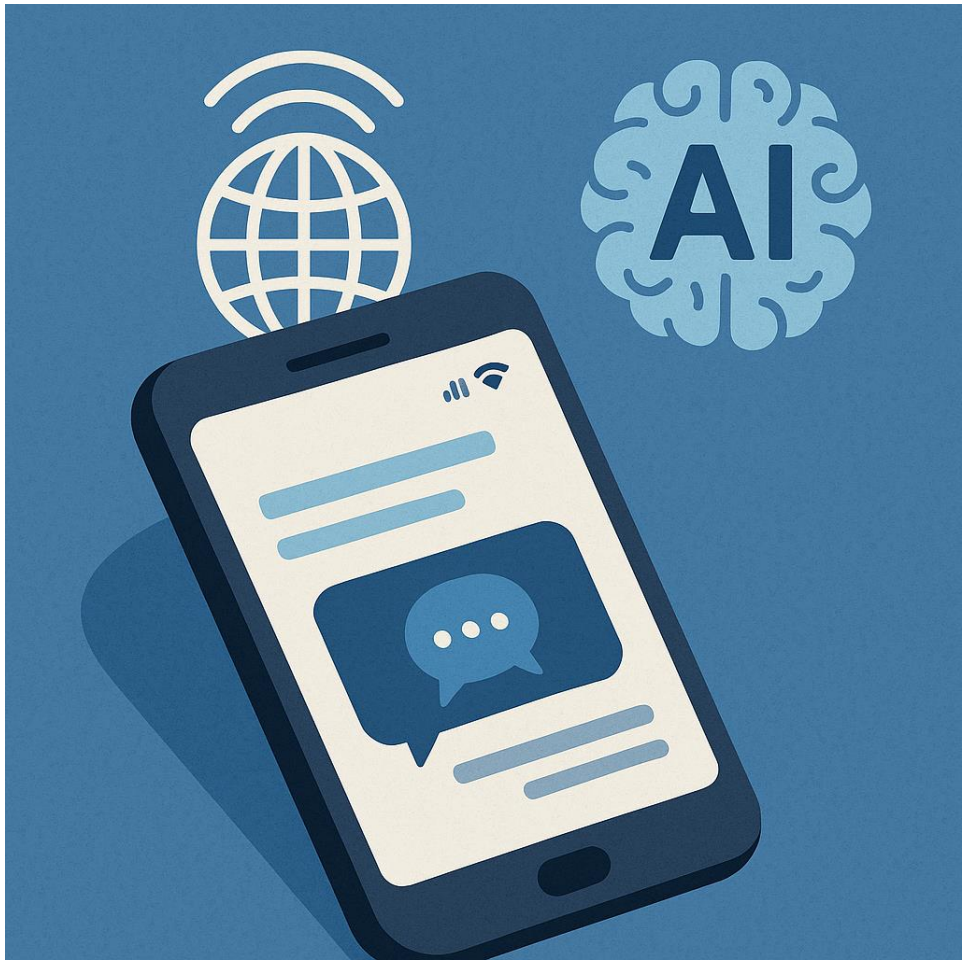
www.agripath.net

The Farmbetter App

- Provides customized, sustainable land management advice.
- Links farmers with WOCAT and geospatial datasets.
- Tailored guidance to local agroecology



AI – The New Elephant in the Room



Scalable

Reach more farmers at lower cost.

Deliver context-specific, timely advice.

Personalization

Inclusivity

Designed to reduce digital and gender divides.

Learning

Continuous feedback improves service quality and relevance.

What We Still Don’t Know About AI

Source: Farmbetter

- Who adopts AI tools—and how do gender, literacy, digital skills, and household roles shape uptake?
- What delivery mechanisms work best? e.g., SMS, voice, video, avatar-based?
- Which delivery mechanism do farmers trust most?
- Can AI address issues of present bias?

Key Challenges of DAS and AI

Source: GFUSA

- Poor connectivity & infrastructure
- Low digital & functional literacy
- Generic, one-size-fits-all advice
- Language & cultural mismatch
- Gender and age disparities
- Unclear business models; many platforms depend on donor funding, which limits scalability.
- Trust & data concerns – how farmers' data are collected and used.

Conclusion & Way Forward

- DAS and AI must be inclusive, contextual, and farmer-centered
- Bundling required collaboration across sectors is essential for responsible scaling
- Can complement, not replace, traditional systems

Source: Farmbetter

Thank you

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