

Combining Seed & Financial Technologies for Resilient Agricultural Growth: *Seed industry perspectives*

Paswel Marennya

Presentation at the

The Drought Tolerant Maize-Index Insurance Pilot Project
Meeting

October 31, 2019

Polaris Suite, Ronald Reagan Building Washington DC



USAID
FROM THE AMERICAN PEOPLE

 **CIMMYT**
MR
International Maize and Wheat Improvement Center

UCDAVIS
UNIVERSITY OF CALIFORNIA

The Process



What was insured?

- The insurance protected farmers' investment in DT seeds



Participating seed company is *the* insured party

Insurance company (UAP, Hollard) as insurers

Farmers used their premium payment receipts to receive replacement seed

The Process



The contract covered a wider drought protection thus

early season rainfall deficit trigger
mid season yield deficit trigger

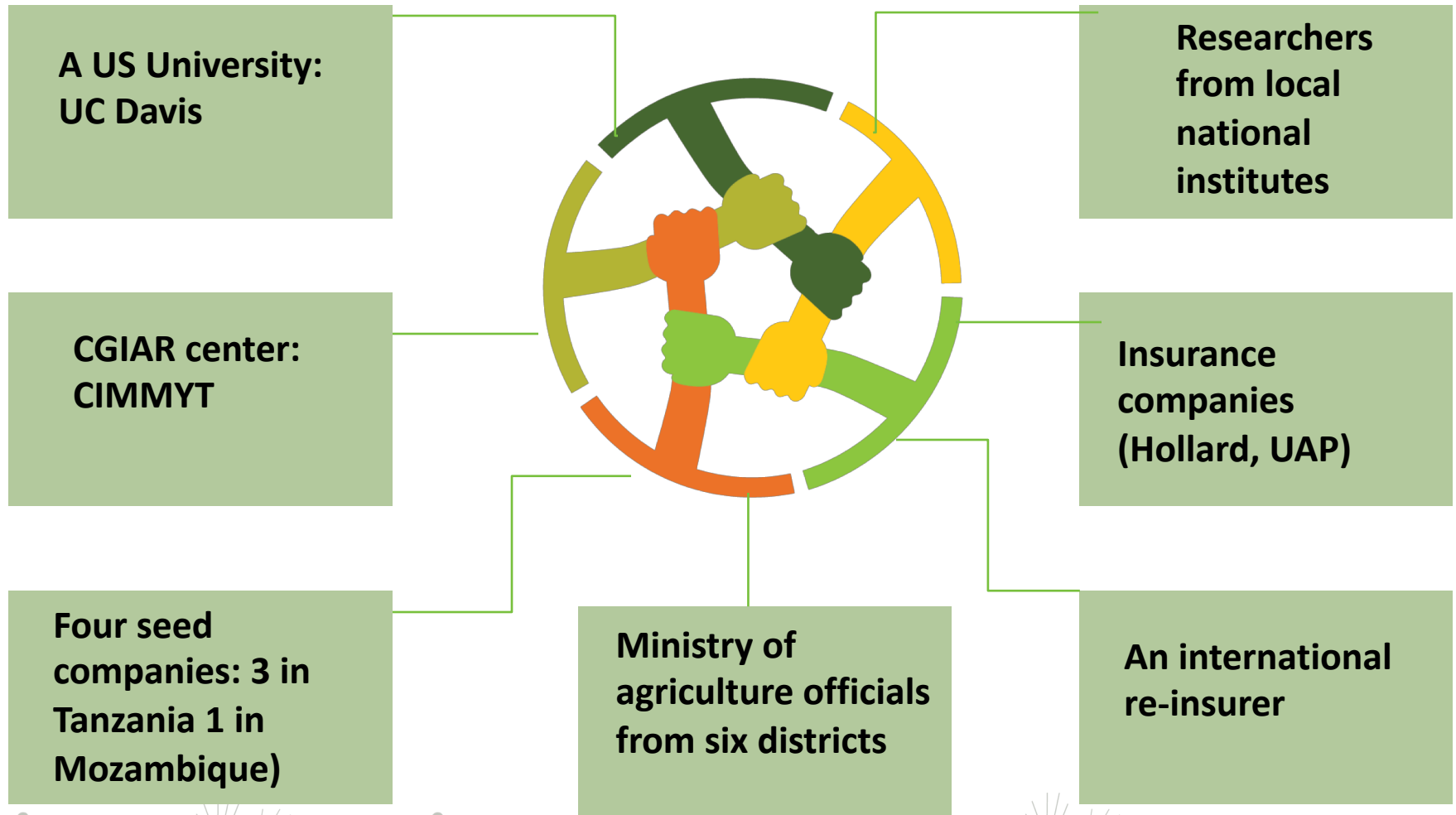


These deficits/loss events were monitored via satellite data

Rainfall estimates NDVI (a bio-mass or “greenness” index)
A weather index insurance (WII)



Partnerships Involved



What were the roles of the public and private entities in the project?

CIMMYT

- Facilitate seed company partnerships based on longstanding relationships
- Prepare farmers educational materials on drought tolerant (DT) seeds and their value proposition
- Supervise execution of project activities

UAP & Hollard

- Developing the contracts with seed companies
- engaging a reinsurer
- passing on payouts to seed companies for onward transmission to farmers

UC Davis

- Design the Index insurance product itself
- Provide intellectual and scientific leadership and rigor based on global experiences

Seed Companies:

- Seed supply and insurance marketing
- Distribution channels and contracts
- Collecting premiums and passing on to UAP
- Passing on payouts to farmers

Ministry of Agriculture & Local Administration

- Coordination of field data collection
- M&E
- Training of village retailers
- Local administration: manage researcher-community relations

Seed Company (SC) Perspectives (1)

- **Efficient data collection and delivery: “block chain-like” (big-data like) approaches**
 - scanner data...real time data delivery to data hubs
 - digital registration
 - comprehensive input data
 - manual registration is not scalable
- **Use of WII to crowd in demand, a marketing tool**
 - After drought many farmers revert to old varieties
 - Seed companies can remain insured party
- **Consider products that cover broader range of inputs**
 - Tillage labor (23%)
 - Weeding labor (30%)
 - Fertilizer (30%)

Seed Company Perspectives (2)

- **Focus on premium costs**
 - funded by SC marketing budgets ...need strong commercial proposition
 - Using the DT-II opened up new markets
 - funded by public \$\$\$: must have strong development impact
 - consider conditional subsidies
- **Simplicity is important**
 - You don't want a complicated product
 - Keep the complexity under the hood (for regulators to open)
- **Capitalize on growing govt. interest in WII (ag. Insurance)**
 - Optimal product designs still a challenge;
 - which product?
 - Germination failure
 - Production failure
 - Yield insurance



Seed company perspectives (3)

Research (piloting) in the following areas

- **Regional trials and piloting**
 - Conduct long term tests
 - (near-) market ready testing of promising products
- **Distribution strategy for trials**
 - Build distribution costs into price of seed
 - Given small volumes, higher per unit distribution costs
- **Pilot insurance in mature seed markets**
 - if new seed markets farmers have to deal with 2 layers of complexity
 - if these provide easy educational wins, but require spill-overs
 - use insurance as market development tools



Seed Company Perspectives (4)

- **Farmer education and agronomic upskilling is critical**
 - Complimentary farmer practices must match these aspirations
 - How to promote agronomic up-skilling of farmers
 - Introduce in mature seed markets (?)
- **Multi-sector collaboration and co-creation**
 - Insurance-govt-extension-ARIs-CGIARs
 - Efficient implementation to promote learning and build confidence
 - Market risk management (what role?)
- **PPP and division of labor is crucial**
 - Seed companies: seed promotion
 - Insurance companies: insurance provision
 - Govt: education, regulation, system functioning



Take home message from seed company perspectives

Implement R&D projects & programs along this chain:

- (Proof of) concept
 - Practice (commercial viability)
 - System functioning

Guided by appropriate policy innovations



Going Forward: *The Big 4*

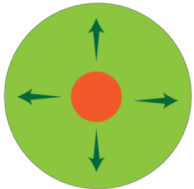


Lessons from Implementation of DT-II Project in East Africa



Get the right mix of partnerships

- align incentives for all
- at a minimum: Involve **Research**, **Government**, **Insurance** and **Agribusiness** partners in the trial and error



Start small: due to supply chain (logistical) challenges



Allow unhindered research and development

- Only the usual human subjects (research ethics) safeguards
- Allow for extensive prototyping, iteration



No need to re-invent the wheel: look to global experiences for lessons, do not start from scratch



Take actions based on research evidence



Scaling and mainstreaming of index Insurance: *what is needed?*



Regulatory acceptance and **facilitation**



Creating a **strong business case** for seed companies



Farmer education and acceptance of WII (insurance broadly)



Strong **development impact proposition** for public investment



Creating unequivocal **value proposition to farmers**



Address actuarial **capacity gaps** in index insurance



Forward Agenda: **conceptual cornerstones**

Genetic technologies (Genetech)

Superior stress
tolerant and nutrition
dense maize genetics

Agronomic and natural resource management technologies (Agrotech)

Scaling best agronomic
management practices



Insurance technologies (Insurtech)

Formal risk markets
beyond social insurance

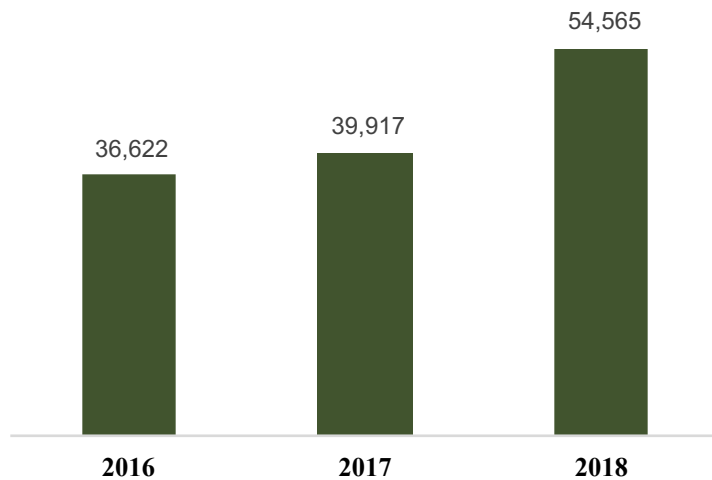
Financial technologies (Fintech)

Increasing farmer
participation in credit
markets and increasing
their financial inclusion

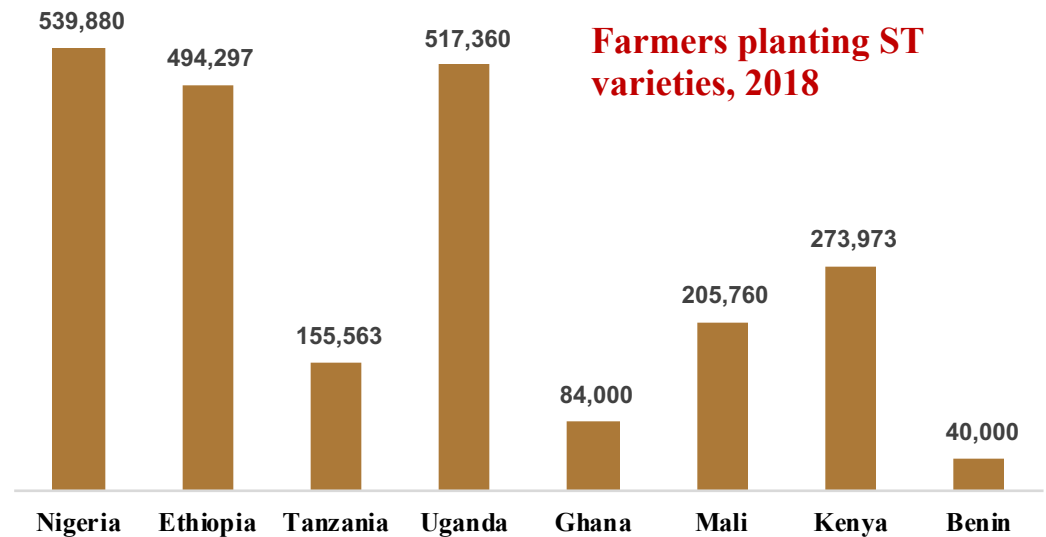


Genetech

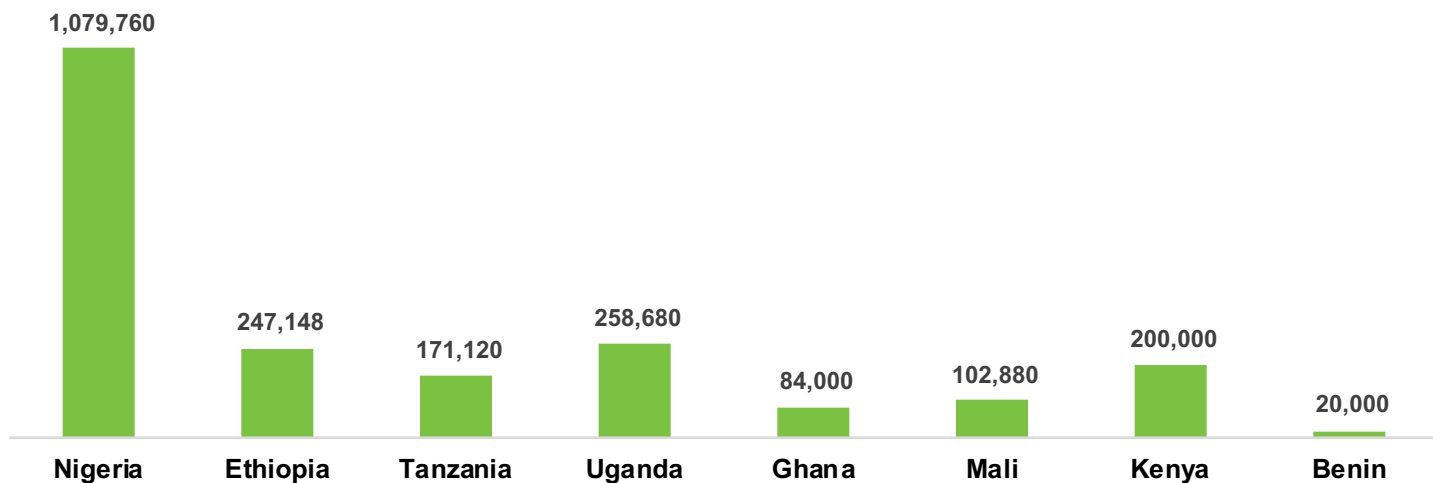
Tons of ST seed produced



Farmers planting ST varieties, 2018



Ha under ST varieties



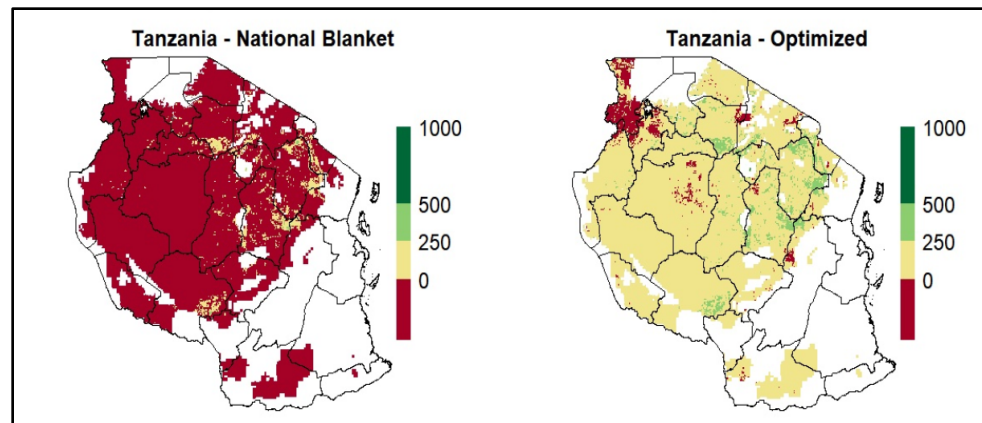
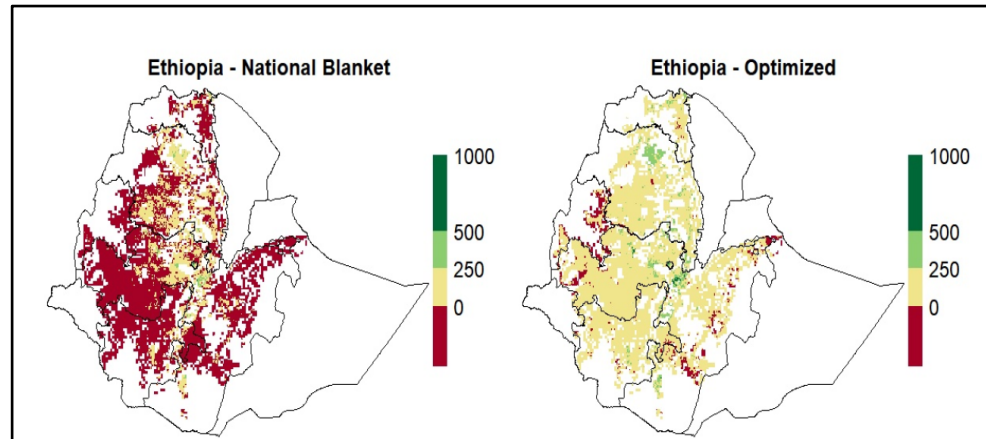
Agrotech



Maize-Seed- Area (MSA): a phone App that provides agronomic advice

- **spacing, appropriate variety, seed amount, fertilizer requirements**

Fertilizer profitability under blanket and optimized recommendations in Ethiopia and Tanzania (U.S. dollars/ha)



Courtesy: Taking Maize Agronomy to Scale (TAMASA) Project

Insurtech and Fintech

Insurtech

The Global Index Insurance Facility has:

- facilitated more than 5.5 million contracts
- covering over 27 million beneficiaries
- \$855 million in sums insured
- reached one million with information and access to index insurance.
- focused on sub-Saharan Africa, Asia, and Latin America (LatAm) and the Caribbean

Source: Global Index Insurance Facility website

Fintech

Mobile money is strong

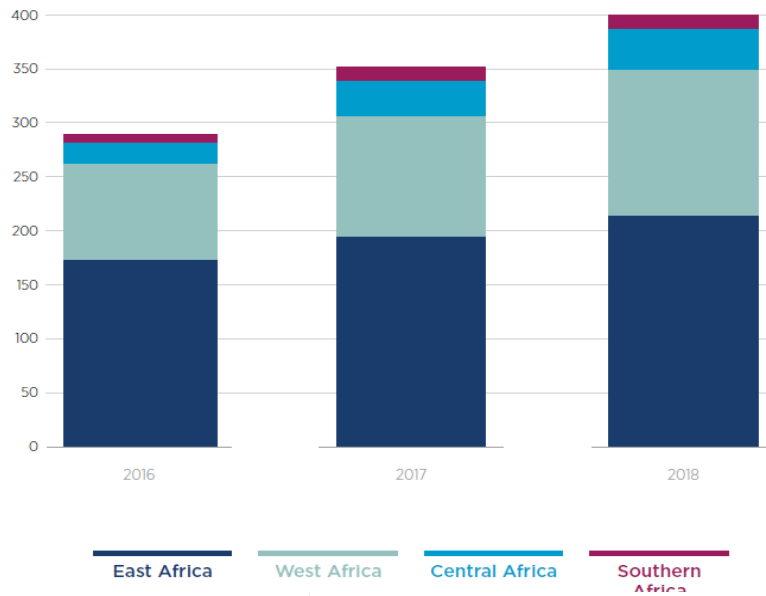
- 7 million MPESA accounts in Tanzania (2016)
- 16.6 million MPESA in Kenya (2016)
- These also have access to App loans

Source: www.gsma.com

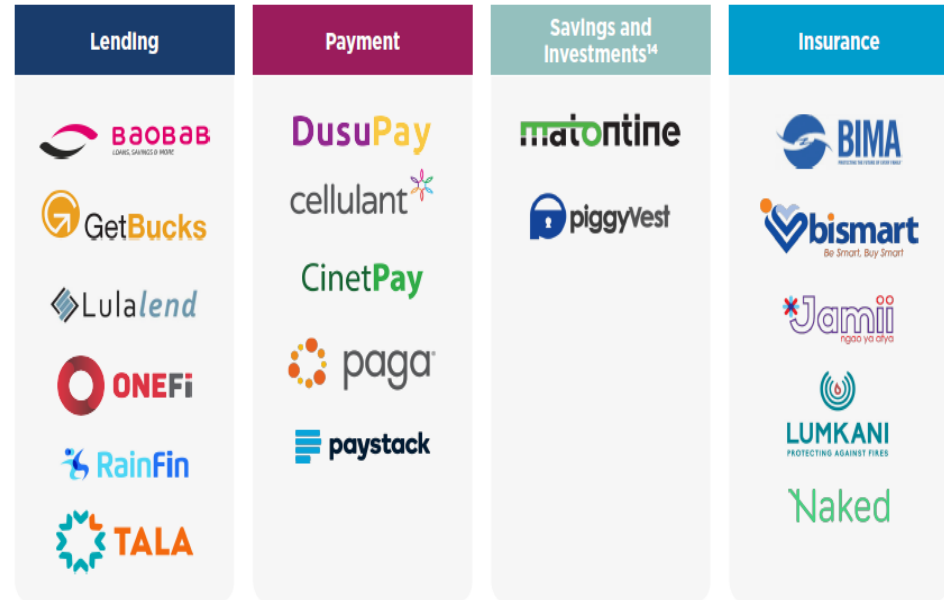
Fintech

Source: www.gsma.com

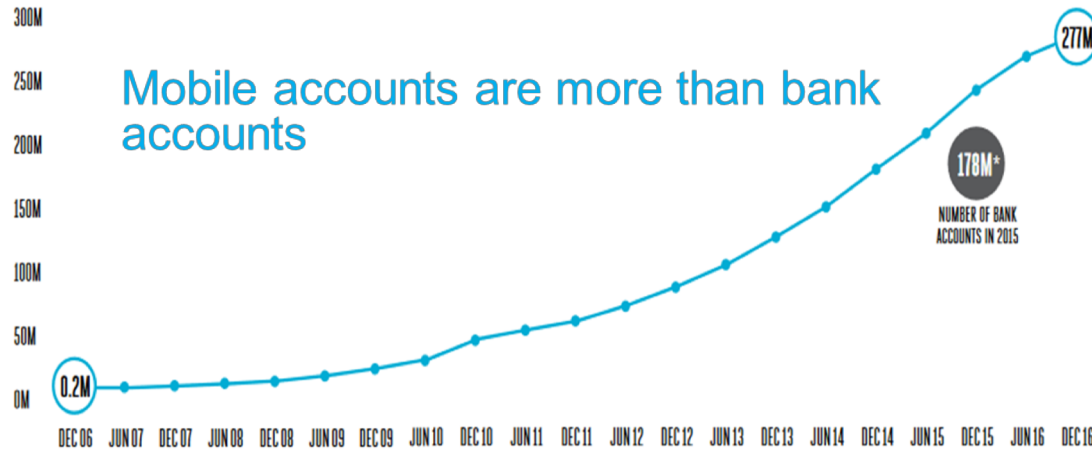
Mobile accounts in Africa (millions)



Some Fintech product offerings



Mobile accounts are more than bank accounts



*SOURCE: AFD, The Banking System in Africa: Main Facts and Challenges. SSA Bank accounts per 1000 adults 334.5

Three areas of continued work



Bundling

- The DTII project has contributed to this
- What remains to be refined? including defining insurance zones, data etc. that Jonathan was mentioning



Product delivery

- Use digital collection of premiums and distribution of payments
- Test modalities for effective insurance education for farmers
- Improve regulatory frameworks of WII (e.g. the WII-QC)



Farmer behavior & market functioning

- Translation of available information for programming, policy and market development
- Portable lessons (portable with modifications) from LatAm or S. Asia?





Thank you
for your
interest!



USAID
FROM THE AMERICAN PEOPLE

CIMMYT
International Maize and Wheat Improvement Center

UCDAVIS
UNIVERSITY OF CALIFORNIA



Photo Credits (top left to bottom right): Julia Cumes/CIMMYT, Awaïs Yaqub/CIMMYT, CIMMYT archives, Marcelo Ortiz/CIMMYT, David Hansen/University of Minnesota, CIMMYT archives, CIMMYT archives (maize), Ranak Martin/CIMMYT, CIMMYT archives.