

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

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Presentation at the
The Drought Tolerant Maize-Index Insurance Project Meeting

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International Maize and Wheat Improvement Center

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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



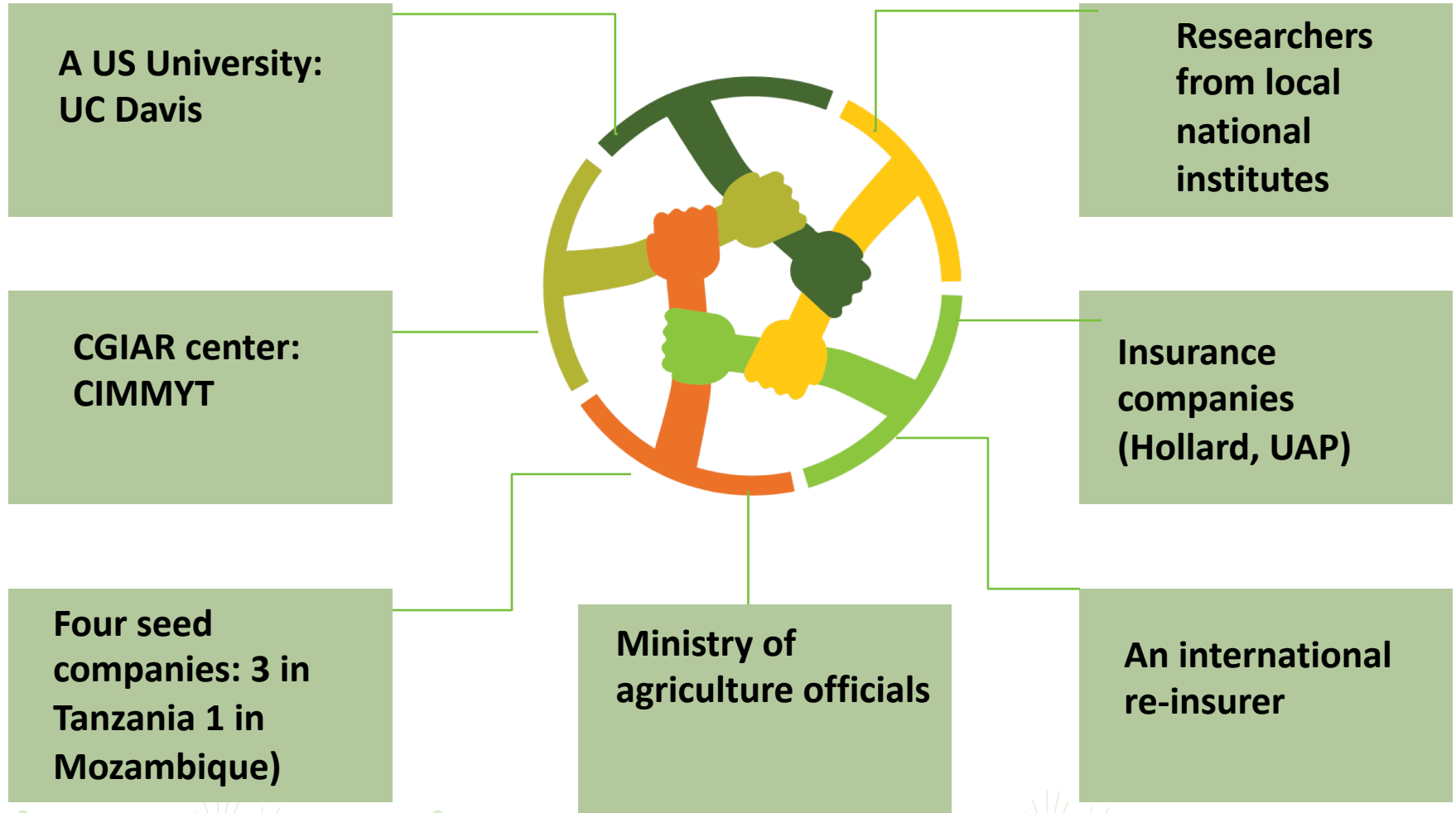
The contract covered a wider drought protection thus

early season rainfall deficit trigger
late season yield deficit trigger

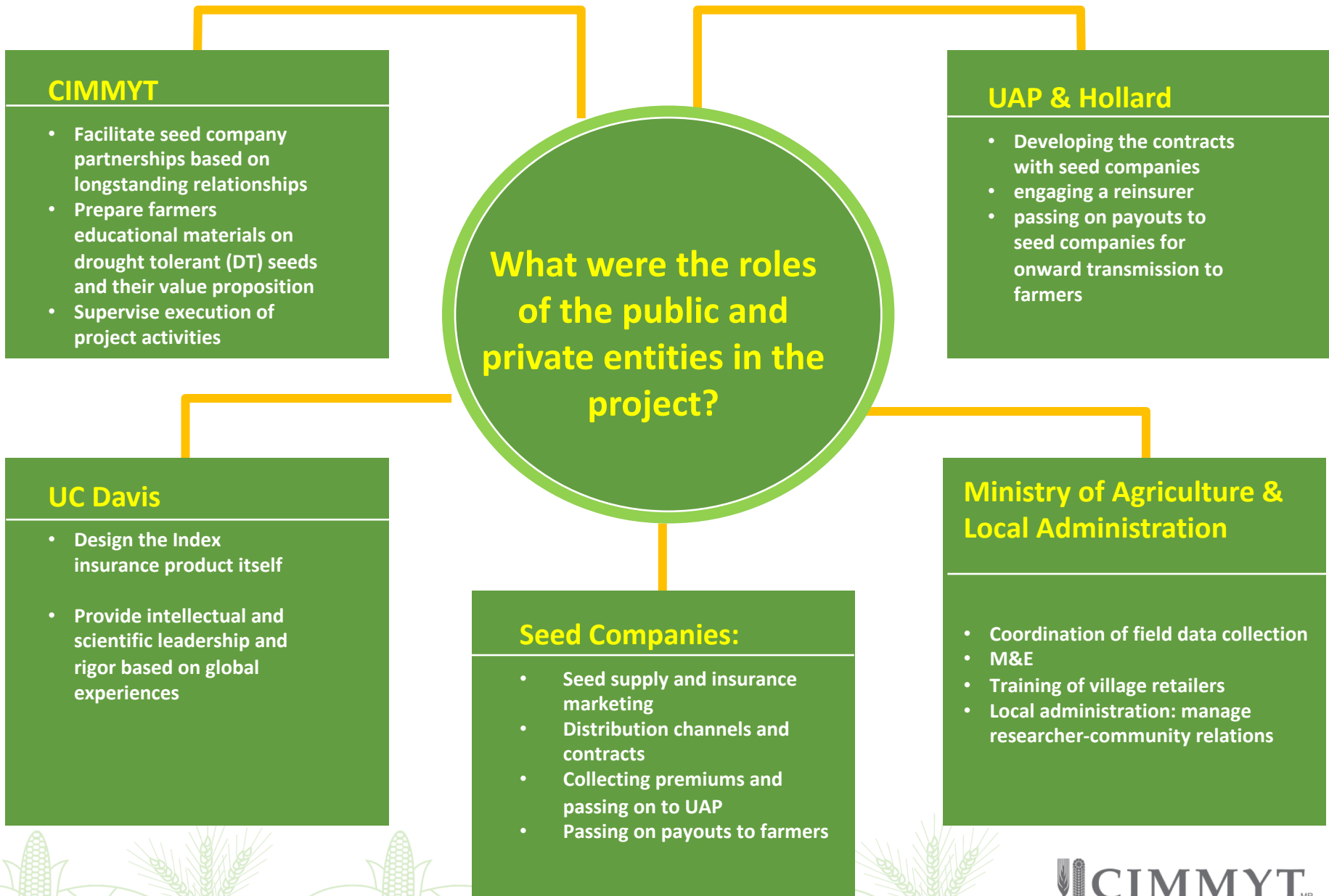
These deficits/loss events were monitored via satellite data

Rainfall estimates based on NDVI

Partnerships Involved



What did each partner bring to the table?



Seed Company (SC) Perspectives: **Data**

- **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

- **Simplicity is important**
 - You don't want a complicated product
 - Keep the complexity under the hood (for regulators to open)



SC Perspectives: Market Piloting

- **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
- **Focus on premium costs**
 - funded by SC marketing budgets ...need strong commercial proposition
 - funded by public \$\$\$: strong development proposition
 - consider conditional subsidies



SC Perspectives: Input Demand Creation

- **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%)

SC Perspectives: Build PPP Coalitions

- **Capitalize on growing govt. interest in WII (ag. Insurance)**
 - Optimal product designs still a challenge;
 - which product?
 - Germination failure
 - Production failure
 - Yield insurance
- **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



SC Perspectives: Don't forget Agronomy

- **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 (?)



Take home message

Implement R&D projects & programs along this chain:

- (Proof of) concept
 - Practice (**commercial viability, dev impact**)
 - System functioning

Guided by appropriate **policy innovations**
(which ones)



Going Forward: *The Big 5*



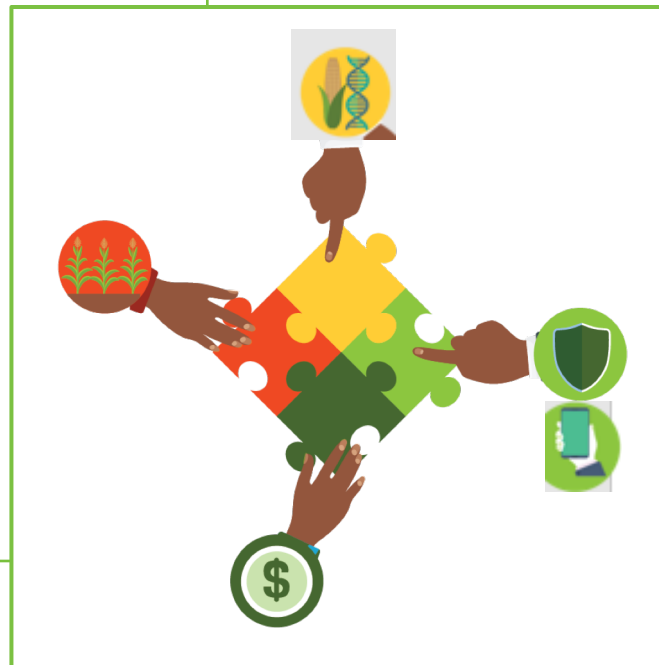
Forward Agenda: combining the big 5

Genetic technologies (Genetech)

Superior stress
tolerant and nutrition
dense maize genetics

Agronomic and natural resource management technologies (Agrotech)

Scaling best agronomic
management practices



Financial technologies (Fintech)

Increasing farmer
participation in credit
markets and increasing
their financial inclusion

Insurance technologies (Insurtech)

Formal risk markets
beyond social insurance

Infotech

The penetration of
smartphones is rising so
is internet access

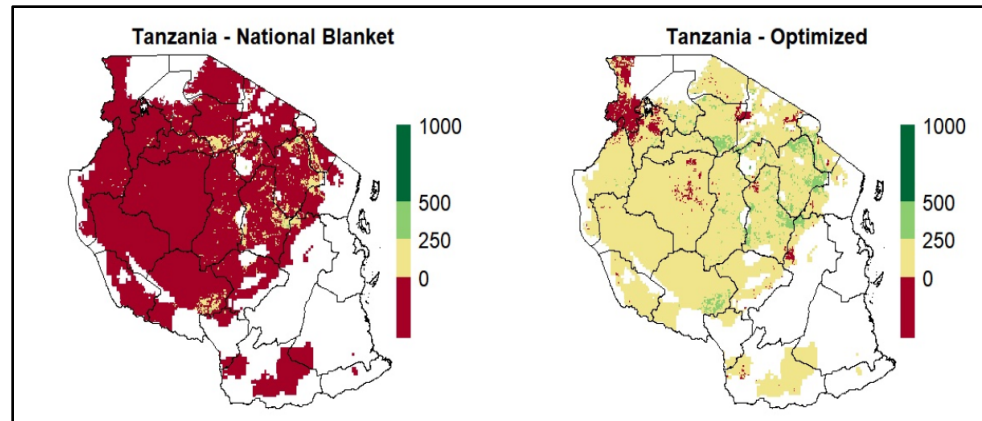
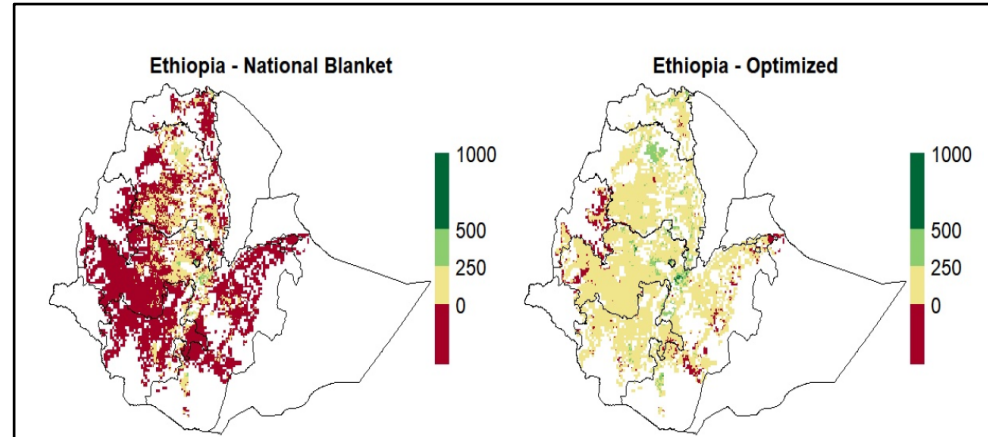
Agrotech



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

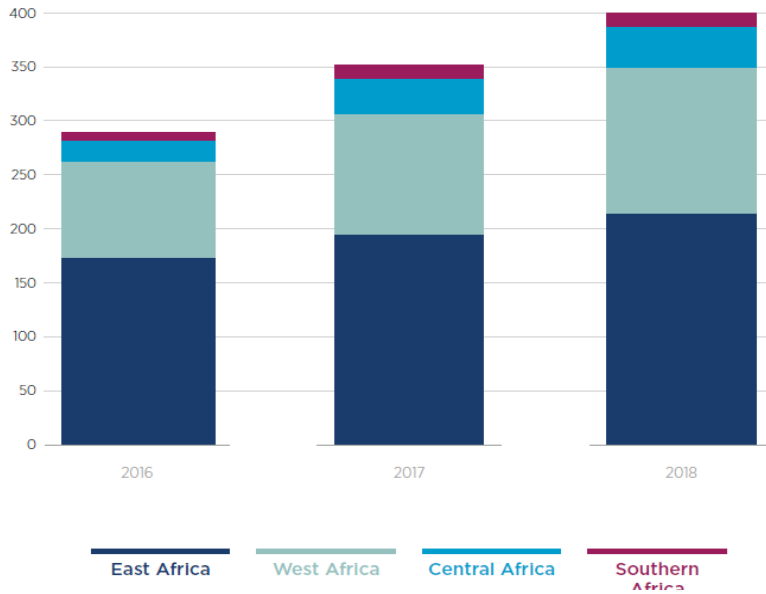
- 7 million MPESA accounts in Tanzania (2016)
- 16.6 million MPESA in Kenya (2016)
- These also have access to App loans

Source: www.gsma.com

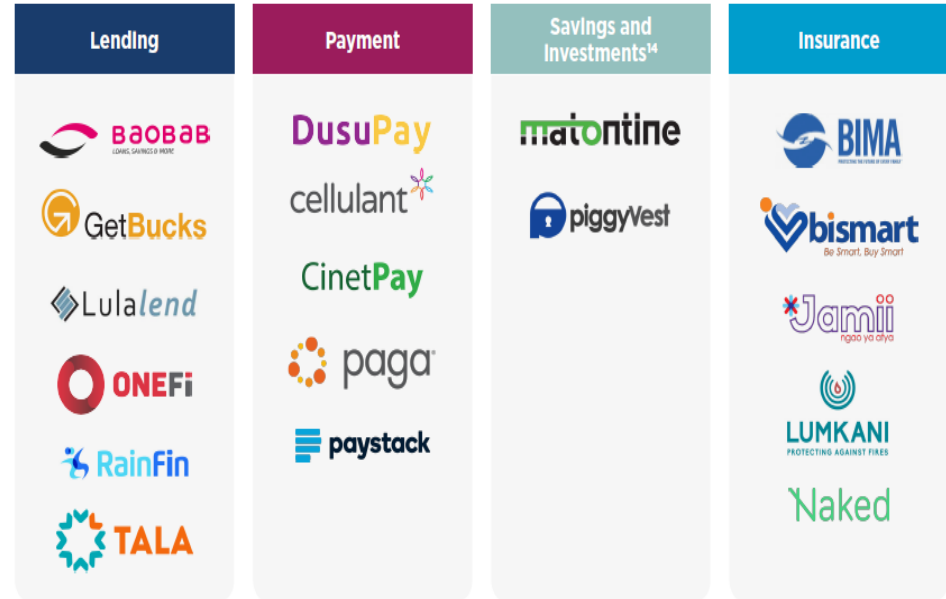
Fintech

Source: www.gsma.com

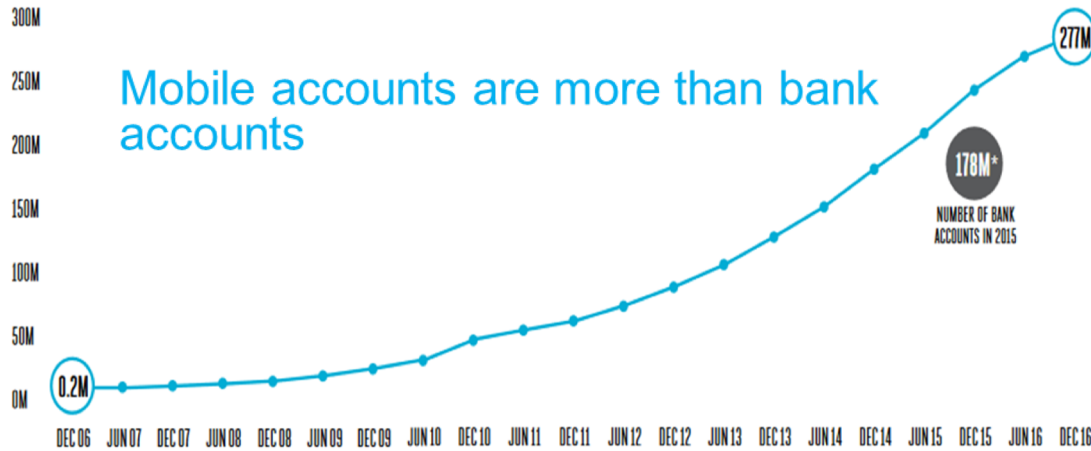
Mobile accounts in Africa (millions)



Some Fintech product offerings



Mobile accounts are more than bank accounts



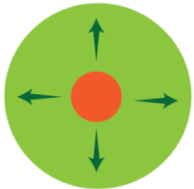
*SOURCE: AFDB, The Banking System in Africa: Main Facts and Challenges. SSA Bank accounts per 1000 adults 334.5

DT-II Project in East Africa: *Lessons on implementation*



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:

Summary of 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



Three areas of continued work



Bundling

- The DTII project has contributed to this
 - What remains to be refined? defining insurance zones, data
- Optimal bundling of sets of the big 5
 - How to test optimal bundles for specific market segments



Product delivery

- Process digitization
- Test modalities for farmer insurance education
- Improve regulatory frameworks



Farmer behavior & system bottlenecks

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





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