

MOVING FROM SUBSISTENCE FARMING TO AGRIBUSINESS: THE ROLE OF MECHANISATION

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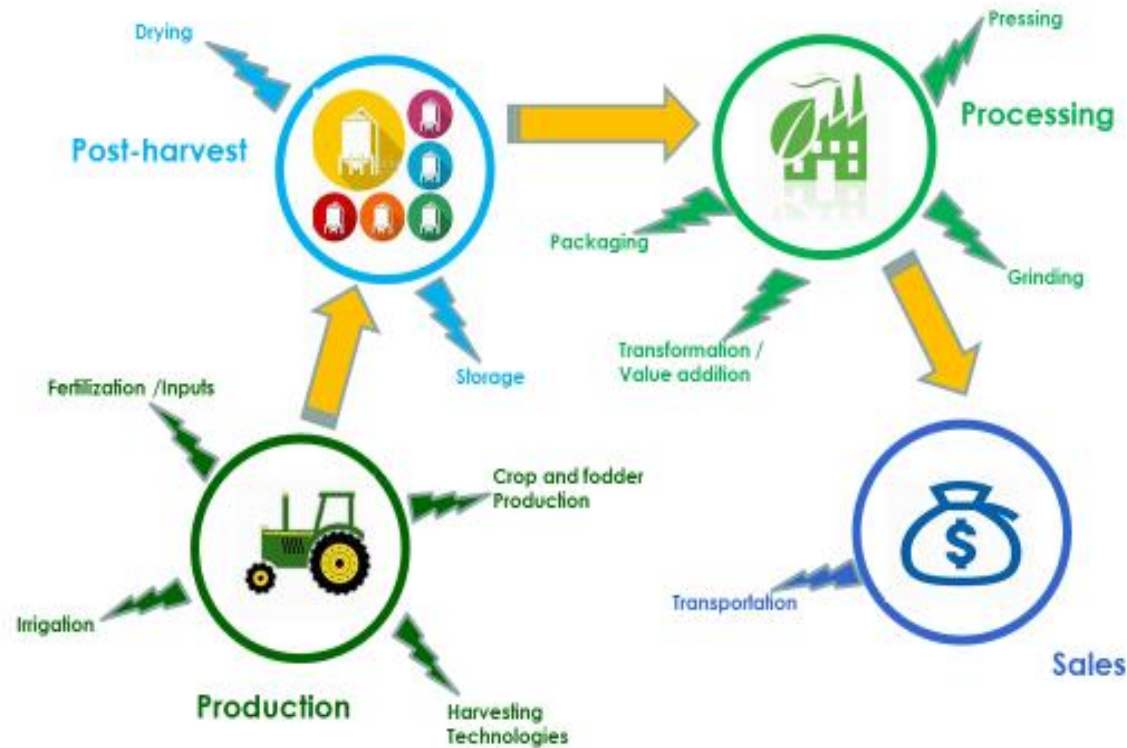


Overview



- Agricultural Mechanisation
- Agricultural Mechanisation in Africa: Facts and Figures
- Applications along Agricultural Value chains:
- Lessons from Case Studies
- Critical Success Factors for Mechanisation

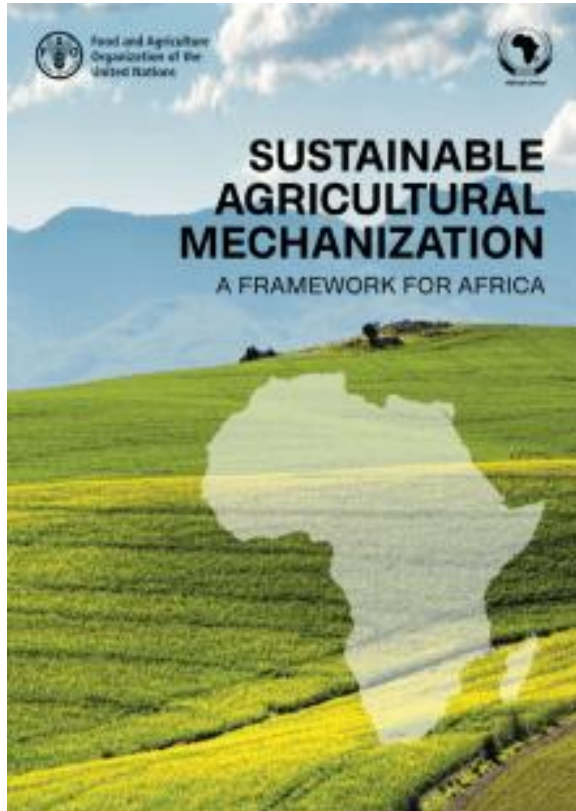
Agricultural Mechanisation



Mechanisation gives an opportunity for smallholder farmers to transition from subsistence to commercial farming as it:

- Catalyzes increased production and reduces high labor costs
- Enhances efficient production at low cost and facilitates competitive pricing
- Promotes efficient use of inputs and improves supply chain
- It not only about machines, but structural linkages for value creation

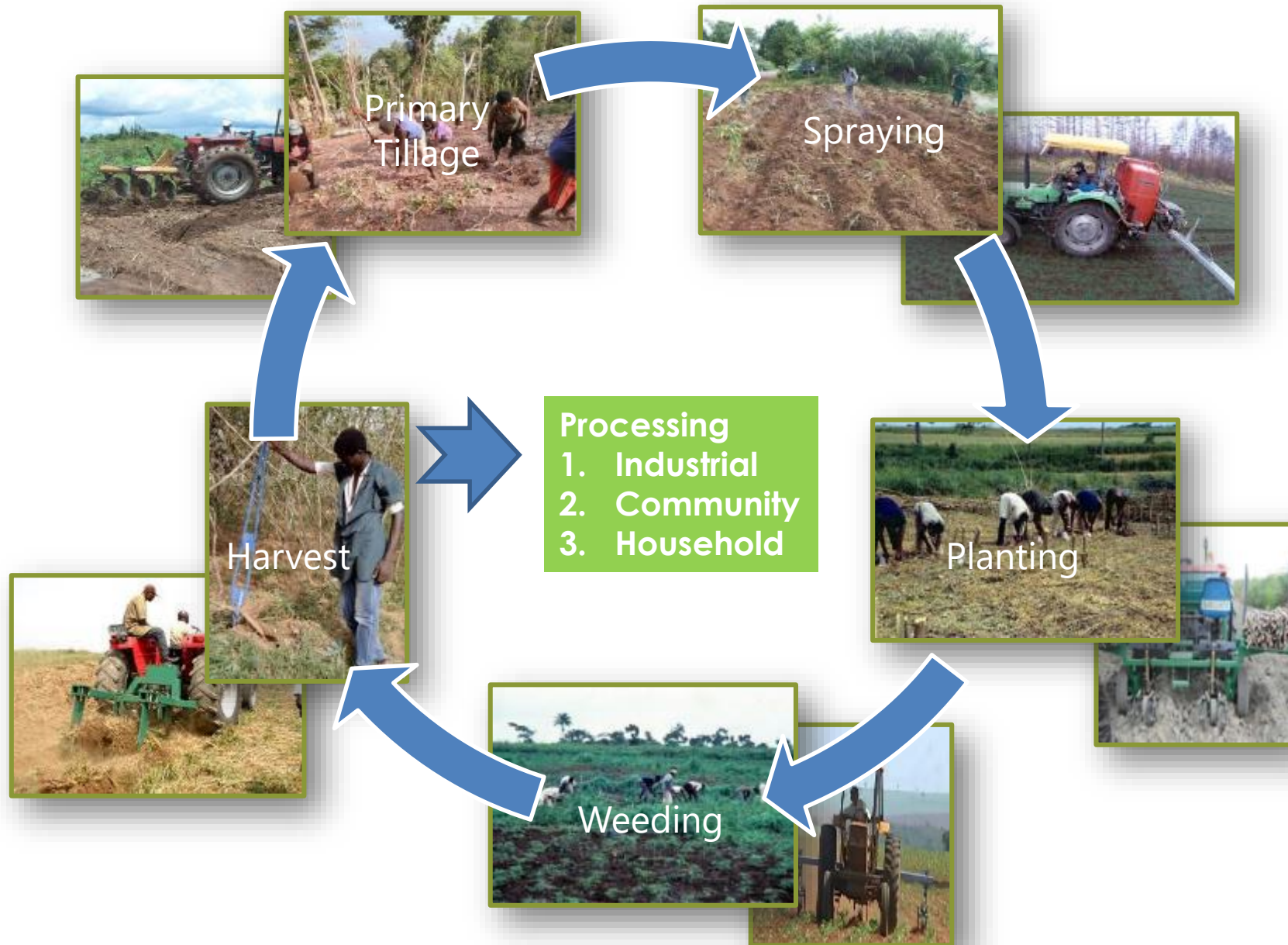
Facts and Figures on Mechanisation in SSA



Sources of power for land preparation (% of total)			
	Human Muscle Power	Draught Animal Power	Engine Power
SSA	65	25	10
East Asia	40	40	20
South Asia	30	30	40
Latin America	25	25	50

	Number of tractors per 1000 ha
SSA	2
East Asia	18
South Asia	12
America	28
Nigeria	1
Burkina Faso	0.5
Egypt	26

Mechanisation Along the Value Chain



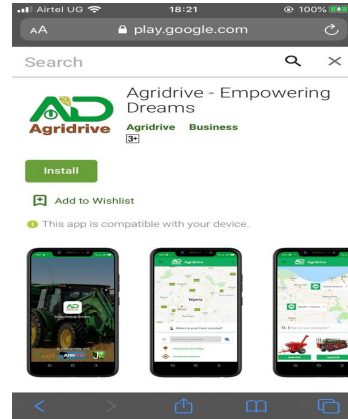
The Mechanisation Strategy

Mechanisation Service Provision – the viable option

- Identification, access and delivery of the right mechanisation equipment for the different operations
- Farmer aggregation, clustering and training on mechanisation and farming as a business
- Identification of local entrepreneurs and training them to be mechanisation service providers
- Training of tractor operators in mechanisation service provision
- Establish Mechanisation Model Farms (MMF) to provide technology demonstration and capacity building
- Leverage of digital technology to reach the last mile
- Financial inclusion to ensure farmers get realizable financing
 - Contract farming, micro financing, government support, project financing
- Facilitating logistics and supply , market Linkages for inputs and products from the farm
- Ensure value addition and local agroprocessing



Systems Approach to Mechanisation



Agronomy



IT & Farmer
Aggregation



Mechanisation



Agroprocessin
g



Mechanisation Approach





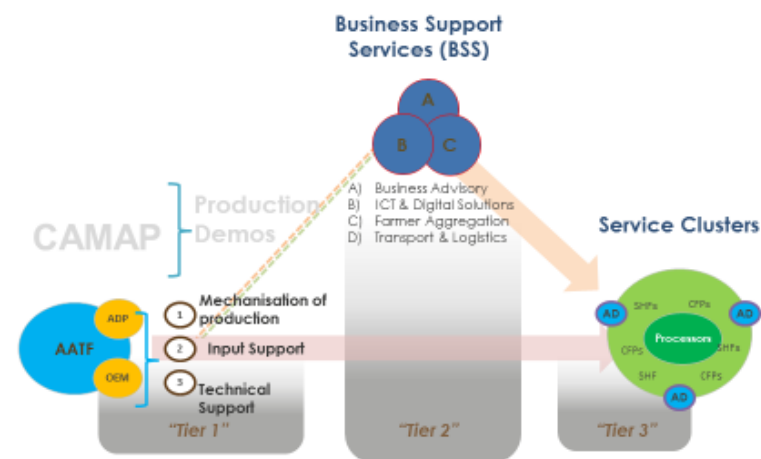
Mechanisation lessons from Case Studies

Cassava Mechanisation and Agroprocessing Project (CAMAP) – Nigeria, Zambia, Uganda and Tanzania (TAAT)

Objectives:

- Improving cassava productivity and incomes for farmers
- Improve timeliness of efficiency of operations
- Reduce drudgery
- Improve quality of work
- Provide employment
- Stimulate rural growth
- Improve access to inputs and equipment
- Strengthen market linkages

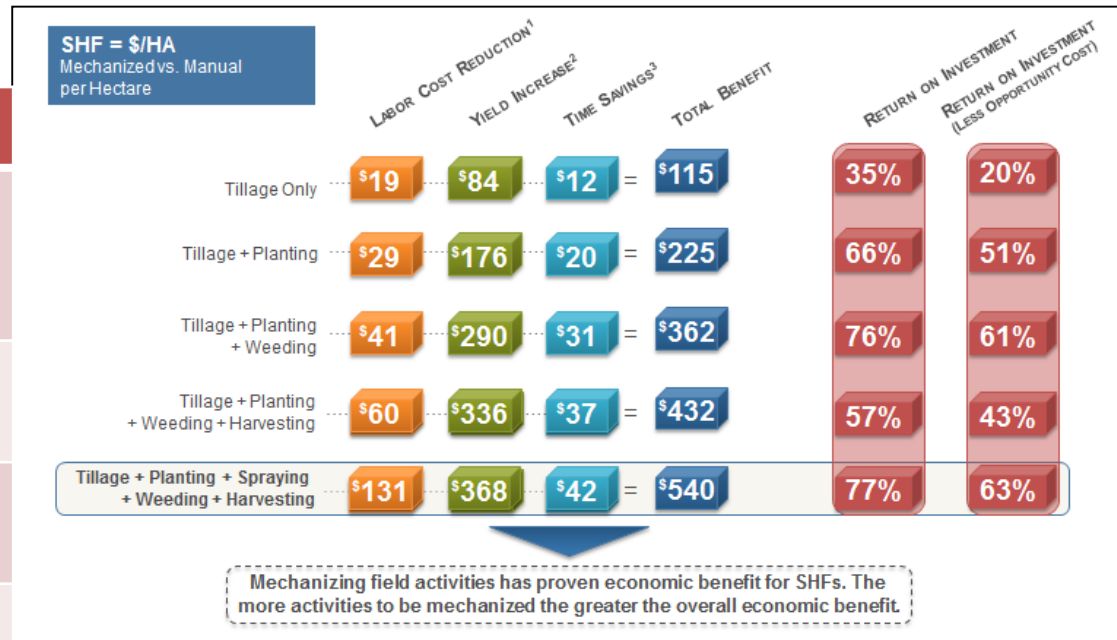
PPP Agribusiness Models for Last Mile



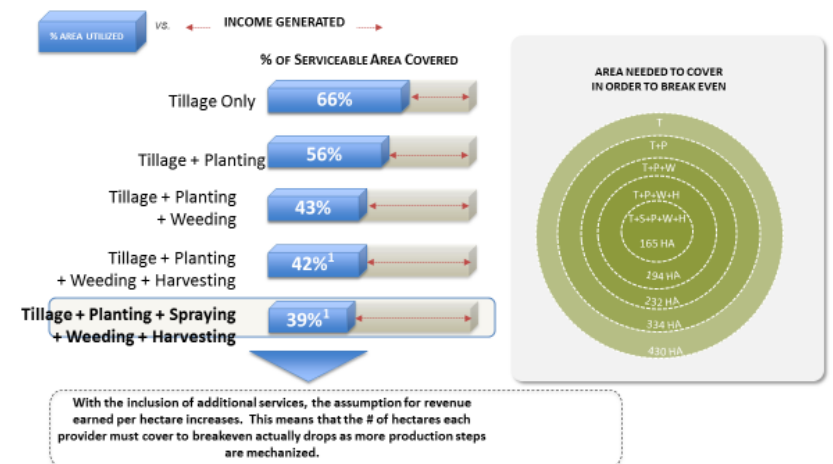
Actors – seed companies, agro-dealers, NARS, CBOs, Inputs suppliers, produce buyers, agro-processors, financial institutions

CAMAP Results

Process	Manual		Mechanized	
Land preparation (ploughing & harrowing)	30 days (240 hours)	\$180	1,5 hour	\$140
Stem preparation and planting	8 days (64 hours)	\$120	45 minutes	\$60
Weeding	12 days (96 hours)	\$280	30 minutes	\$50
Harvesting	45 days (320 hours)	\$170	4 hours	\$100
Crop vigor	low		high	
Uniformity of crop	35%		95%	
Yields per ha	7 ton		30 tons	
Income per ha	USD500		USD2,000	
Market linkages	Traditional		Linked to processors	



Full Suite Mechanisation – The Economics



¹ None of the individual operations requires greater than 50% utilization of hectares in order to breakeven.

CAMAP Demand Impact pathways



Cluster approach - Uganda



Individual small holder approach



Private sector engagement - Nigeria



Gender sensitive approach



Project partnership approach - Nigeria

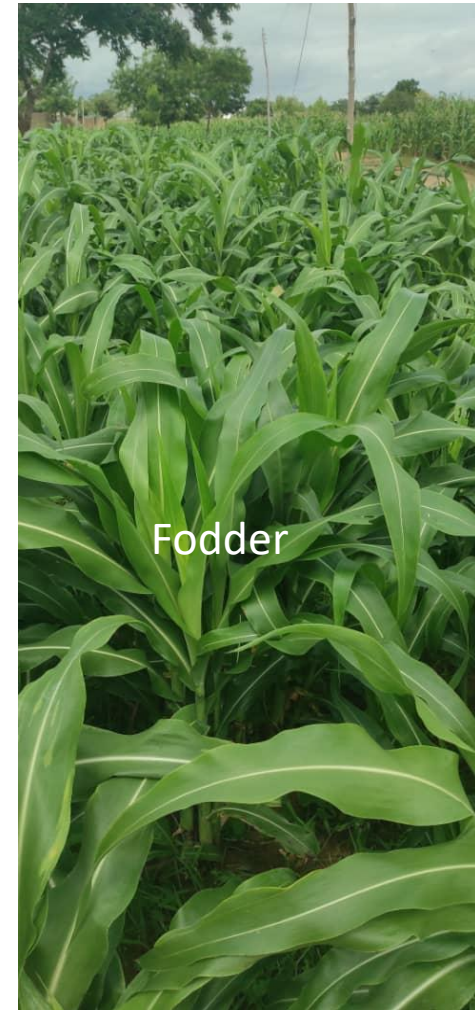
Agridrive Ltd – Spearheading Mechanisation



**AGRICULTURAL
EQUIPMENT SUPPORT**

**MECHANIZATION
SERVICE PROVISION**

**AGRIBUSINESS
SUPPORT SERVICES**



Fodder



Cassava



Soybeans



Rice



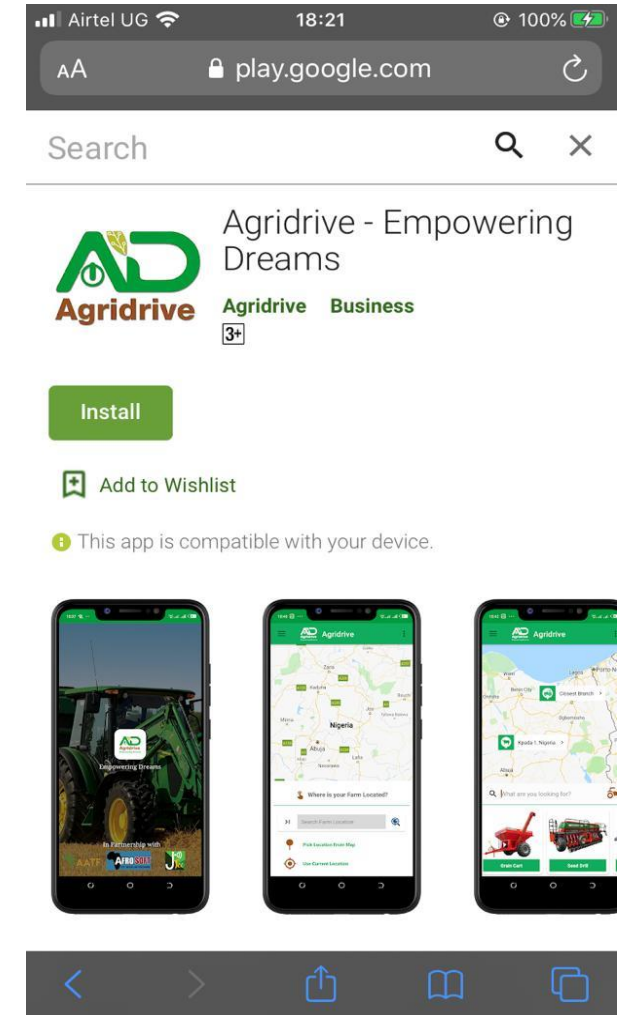
Groundnuts



Maize

Use of Digital Agriculture – The Agridrive App

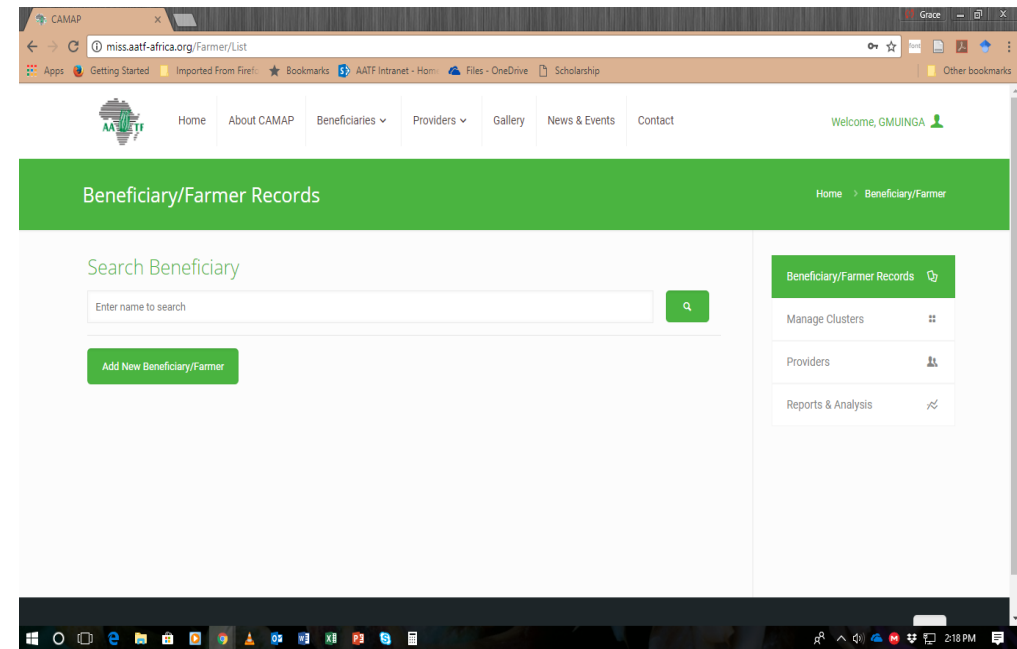
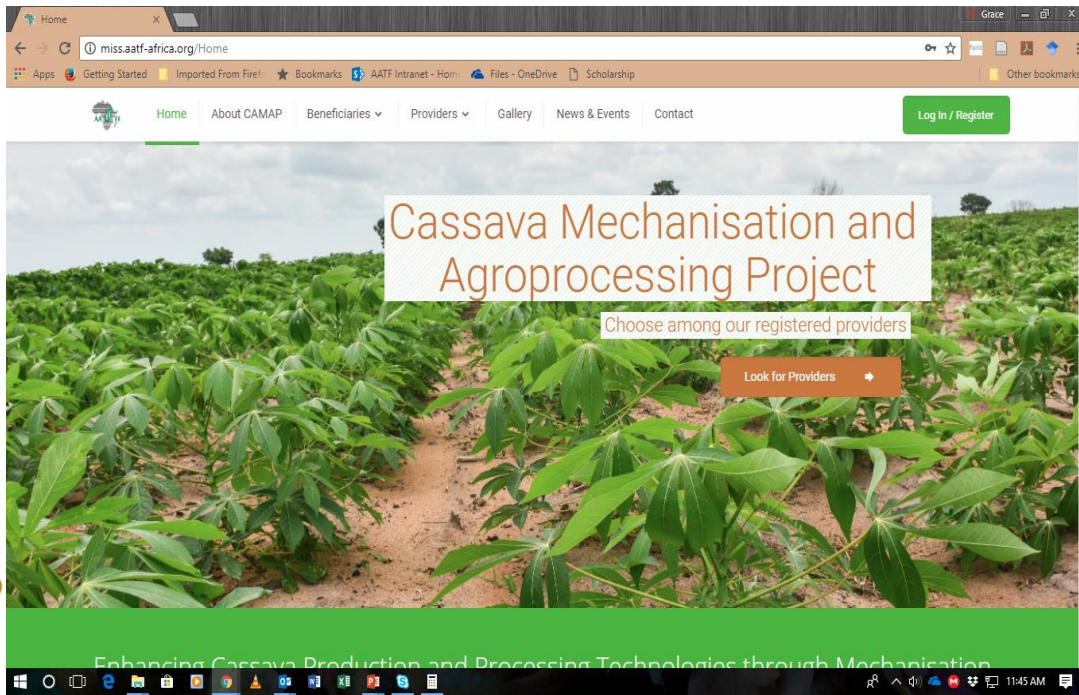
- AgridriveApp can be downloaded from Play Store
- Enables farmers to book and pay for mechanisation services
 - Ploughing
 - Harrowing
 - Planting
 - Herbicide Application
 - Harvesting
 - Haulage
- Enable Mechanization Service Provider to manage the provision of mechanization services
 - Identify who and where the farmers are
 - Identify what and when services are needed
 - Can track fuel usage and avoid abuse of equipment
- Support farmers with weather information and other e-extension support
- Partnering with Kurai to integrate with the use of drones for crop monitoring and herbicide application



Market Information Support System (MISS-CAMAP)

Digital information platform to facilitate provision of economically sustainable agriculture production

- Farmer and farm information
- Agro inputs information
- Market information (crop value chains available, buyers and sellers, quantities, prices)
- E- extension support system



Delivery Pathways for Mechanization

1) Private Entrepreneur: Personal capital used to purchase equipment and provide service.



2) Association based market connection: Association membership to support access to financing and operational logistics



3) Gov't sponsored Program: Equipment sourced through Gov't program using down payment and 3 year payback



4) AATF / Assisted Program: Access to Fleet procured by AATF



The Critical Success Factors



1. Sufficient demand of mechanization is required for sustainable business

Realization of benefits to farmers (cost, time, yield) need to pull products and services through the system.

2. Ability to access equipment has to be reliable and timely

Financial returns need to be in line with risks for entrepreneurs all throughout the supply chain to invest in developing business to provide mechanization tools and services



3. Aftermarket business support is essential and required

Spare parts supply and knowledgeable technicians are obligatory to instill confidence in the system

4. Experienced operators are needed to provide timely and quality services

Machinery management, usage, and maintenance are factors in equipment lifecycle performance

5. Commercial business acumen promotes efficiency and sustainability

Building a company with service excellence (scheduling, coordinating and executing) needed to generate adequate returns





Thank you

