Digitization of SME Finance
Global SME Finance Forum 2017

November 1-3, 2017
Berlin, Germany

Digital Technologies to Disrupt Agricultural Finance

Agrikore : the African blockchain wallet for Agriculture

by

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Co-founder Cellulant &
Chief of Party- eWallet

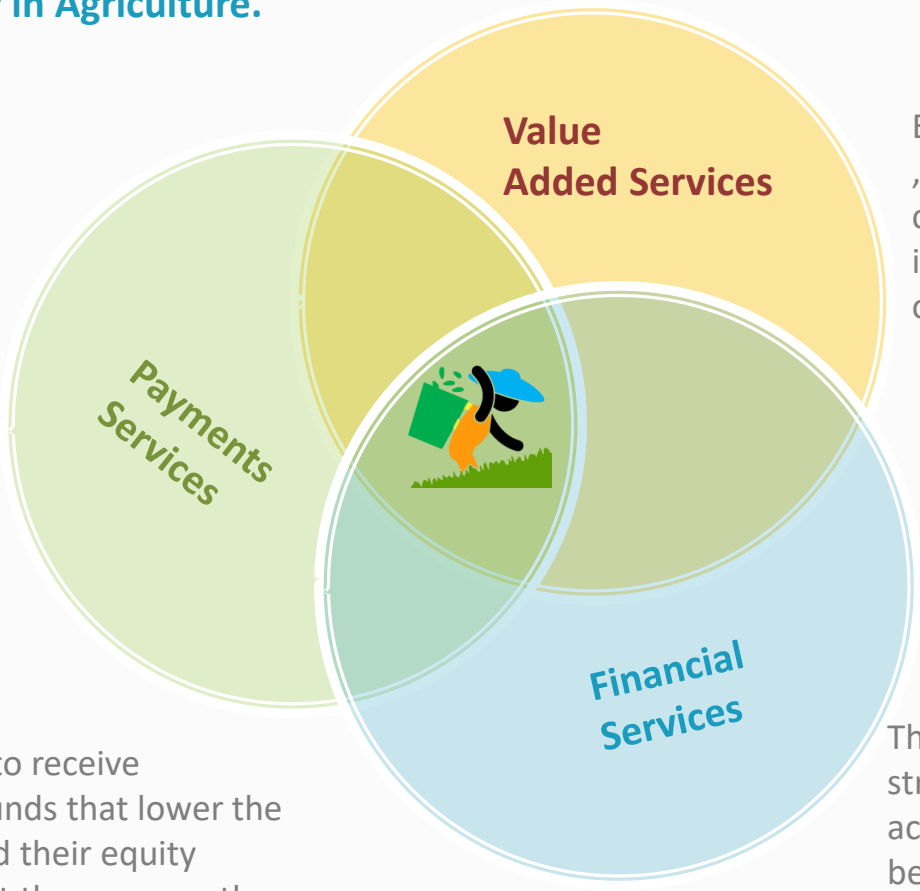
PRESENTATION OUTLINE

1. About the e-wallet
2. The problems that the e-wallet solves at every layer
3. The architecture : How the system works
4. The e-wallet implementation
5. The reporting interfaces
6. The LATA program overview
7. The results to date

1

ABOUT AGRIKORE (eWallet)

eService delivery in Agriculture.



E- registration that enables farmers , services providers (agro-dealers, cluster agents, off-takers), financial institution to be visible to each other and connect.

The farmer is able to receive "price- support" funds that lower the price of inputs, load their equity contribution so that they can pay the agrodealer digitally via their e-wallet. They also receive the sales proceeds when they sell their produces onto this wallet

The banks are able to lend in a structured way to both agribusiness actors (agro-dealers) and to farmers because the platform handles the "KYC" component of the loan approval process and feeds information in agricultural credit risk guarantee operators

Direct benefits of the system to farmers and the spillover effect

Agrikore enables countries to create an "agriconomy" by enabling a SYSTEM rather than a ISSUE approach to national development

Government/Donors/ Banks

Grant farmers or agro-dealers supports that enable them to access more inputs

Agrodealers

Farmers have greater access to inputs from agro-dealers due to subsidies and due to the lending program to agro-dealers

Agricultural Productivity

Higher yield from greater access to quality inputs

Food Security

Greater yields provide more food security .

Life Improvement

Higher Incomes will lead to the improvement of farmers life, access to other services (example of Solar) & will lead to greater yield

Farmers

Extension workers / E-Agri knowledge

Agribusinesses (offtakers)

With the accretion of the farmer yield, agri-businesses will interact more frequently with farmers and open up a new stream of income

Social

The farmer can now be connected to anything and everybody else (banks, MNOs,Insurances companies etc)

Donors & NGOs

Early stage indications are that increased yields are attracting agribusinesses as buyers

Financial

Higher incomes & access to financial services for farmers

2

THE PROBLEMS

That the ewallet solves @ every layer

OVERVIEW OF PROBLEMS WITHIN THE AGRIC VALUE CHAIN

MARKETS>	INPUTS	PRODUCE	INSURANCE/ RISK	FINANCE	SECURITIES/ EXCHANGE	PUBLIC SECTOR
KEY PERSONS	1.Suppliers 2.Agro-Dealers	1.Off-Takers 2. Village Aggregators 3.Farmer	1.Insurance Companies 2.Risk Agency	1.Micro Finance Banks 2.Commercial Banks 3.Non-Bank Lender 4. Agent	1.Commodity Board 2.Commodity Buyer	1.Government 2.Donor
OFFERING	1.Farm Inputs	1.Warehousing & Market Access 2.Produce Aggregation at Farm Gate 3.Produce	1.Process Integrity – Performance guarantee/De-Risking	Liquidity	1.Physical produce clearance from the market 2.Market-Maker Trigger	1.Oversight & regulation 2.Liquidty(Subsidy)
PROBLEM	1.Lack of demand information/No Demand mapping 2.Logistics Risk 3.Liquidity	1.No pre-knowledge of source, location and volume of ready supply – affects cash-flow forecasting 2. Liquidity	1.Lack of understanding/uptake of insurance products	1.Sector unorganized for lending. Limited KYC	1.Inability to make specific supply demand through a standardized system	Lack of sector transparency and organization
CELLULANT BLOCKCHAIN SOLUTION	1.Ability to see guaranteed demand from farmer	1.Ability to see guaranteed supply from farmer or aggregator	1.Ability to play insurance role within a structured ecosystem	1.Transparent monitoring of all actors/borrowers	1.Monitoring ledger	1.Monitoring ledger

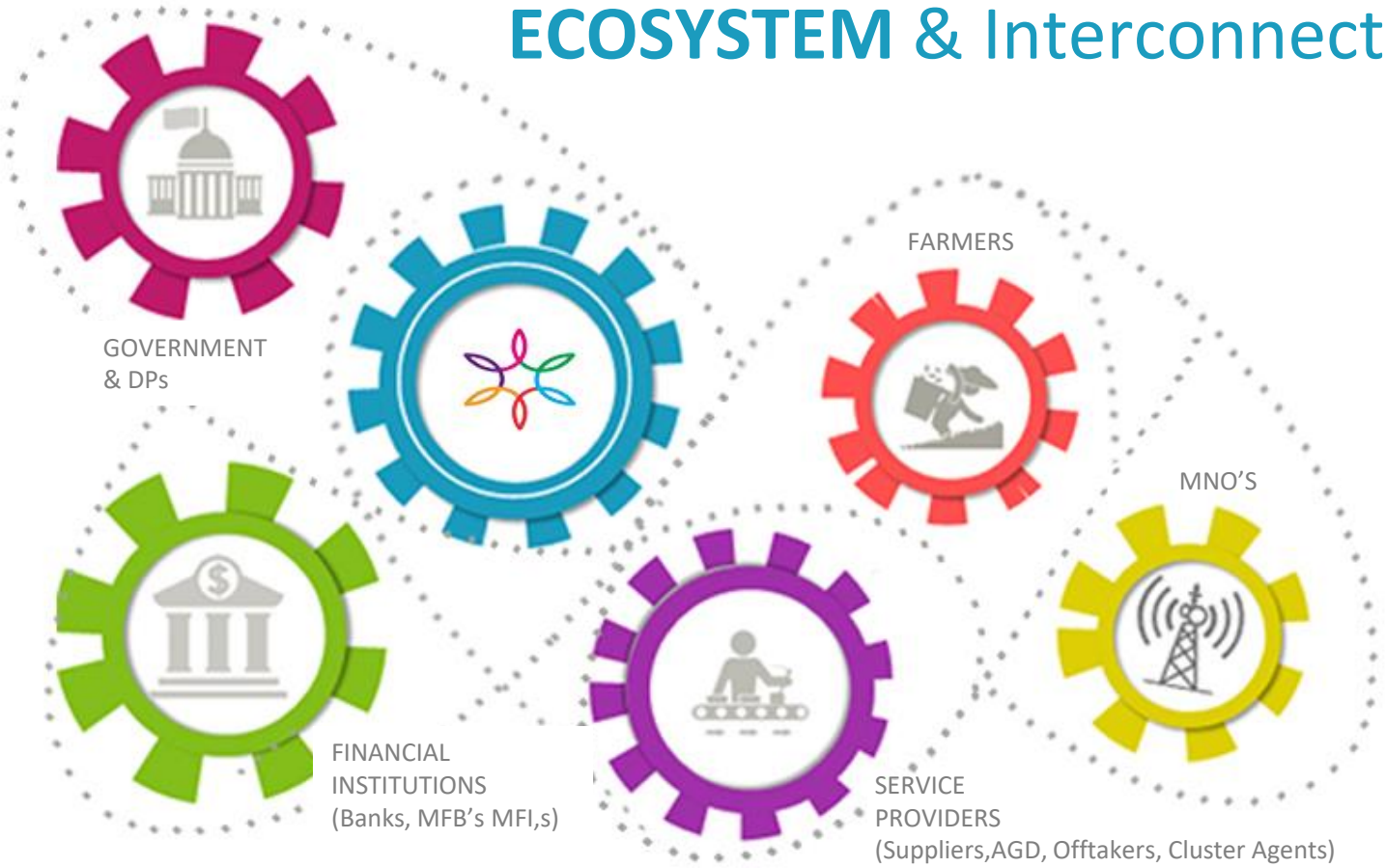
HOW THE SOLUTION WORKS	a.Input price information fed into the system b.Farmer indicates demand by funding account in advance & purchasing insurance c.Suppliers/AGD can see demand & purchases insurance against risk of default.	a.Farmer able to indicate projected produce volume in advance. Can also indicate expected/future price. b. VA able to indicate aggregation capacity and pre-identified produce delivery volume. Can also indicate expected/future price c.Use information gathered to signal to commodity buyer/exchange forcasted quantity of goods available at a set period of time. Knowing the farmer/VA source can help assimilate produce quality & type	a.Issues performance bond on behalf of input supplier and farmer b.Issues insurance instruments between financial borrower and financier	a.If inject liquidity to an actor, can monitor performance/transactions of actors so there is transparency of market behaviors and actions	a.Can place specific commodity quantity and price on ledger b.Monitor accumulation of the produce as it is coming into the system c.Monitor fluctuations in commodity prices	a.Insight into behavior of all ecosystem actors for regulatory purposes
SOURCE OF VALUE	1.Margins	1.Margin 2.Commission	1.Premium	1.Interest	1.Capital Gains	1.Taxes 2.National Food Supply
INSTRUMENT OF VALUE VALIDATION	1.Advisory Note	1.Contract Instrument 2.Goods Receipt Note (GRN)	1.Insurance Note	1.Loan Records	1.Spot/Futures Contract	1.Tax payment
ORIGINATOR OF VALUE	Supplier	Farmer	Off-Taker	Corporate Commodity Buyer	Corporate Commodity Buyer	

3

THE ARCHITECTURE
How the system works

- The Ecosystem
- The different actors and their roles
- Bringing markets to farmers

The e-wallet brings major stakeholders together into an **ECOSYSTEM** & Interconnects them



The ecosystem stakeholders and their roles

BACK-BONE OPERATORS

Government & DPs

-Formulate policies,
-Regulate & grant subsidies when necessary

Financial Institutions
(Banks, MFBs, MFIs)

- Issue loans & credit guarantees

MNO's

-Provide access to the core network for communication channels & to their mobile money networks
-Act as collection agents/ financial inclusion enablers

SERVICE PROVIDERS

Suppliers

- Inject inputs into the value chain & set up the distribution network

Cluster agents

- Organize farmers
- Conduct extension activities

AGD

- Provides the last mile access to inputs, financial services & output aggregation

Offtakers

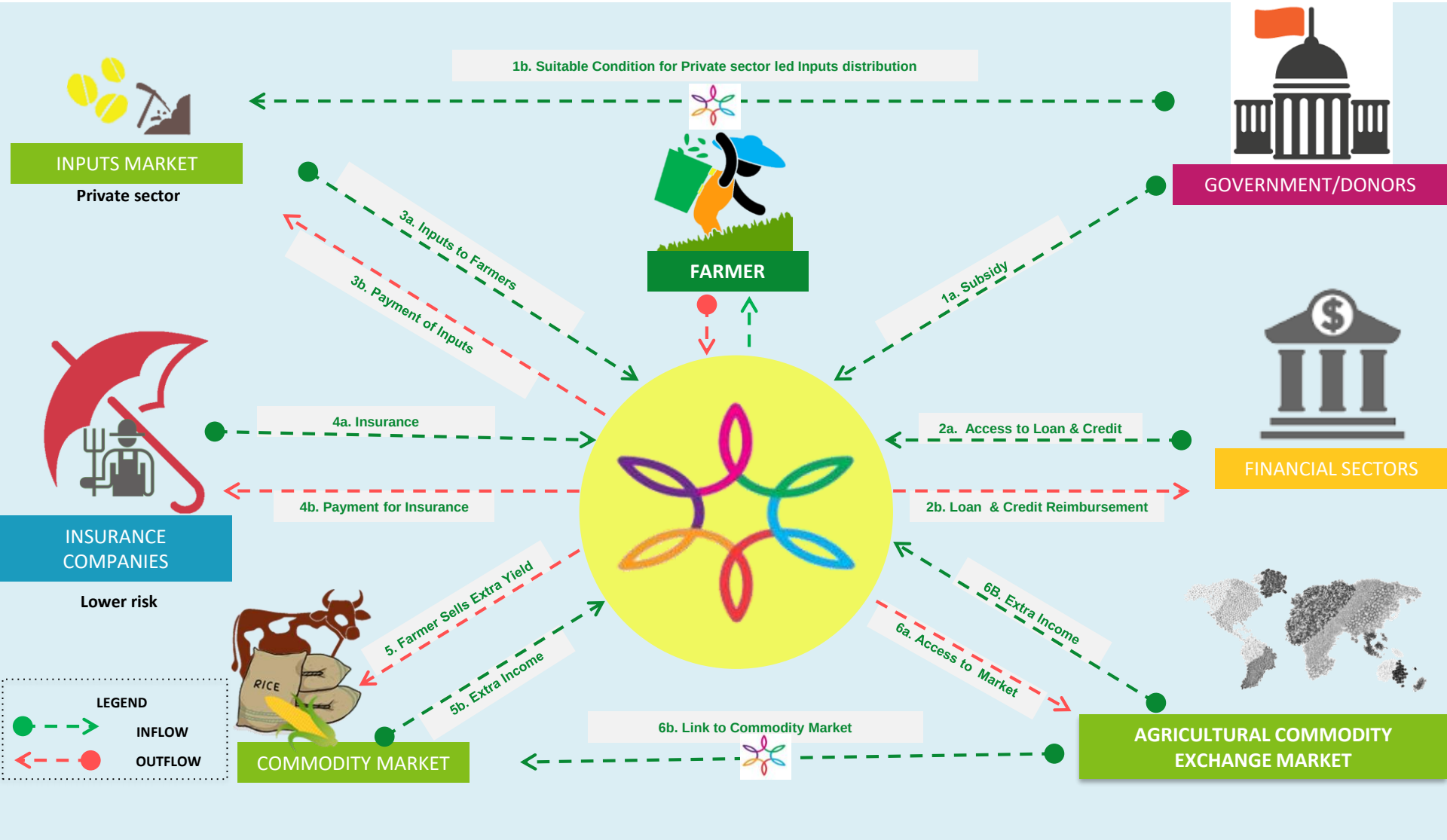
- Buy produce of the farmers

END USERS

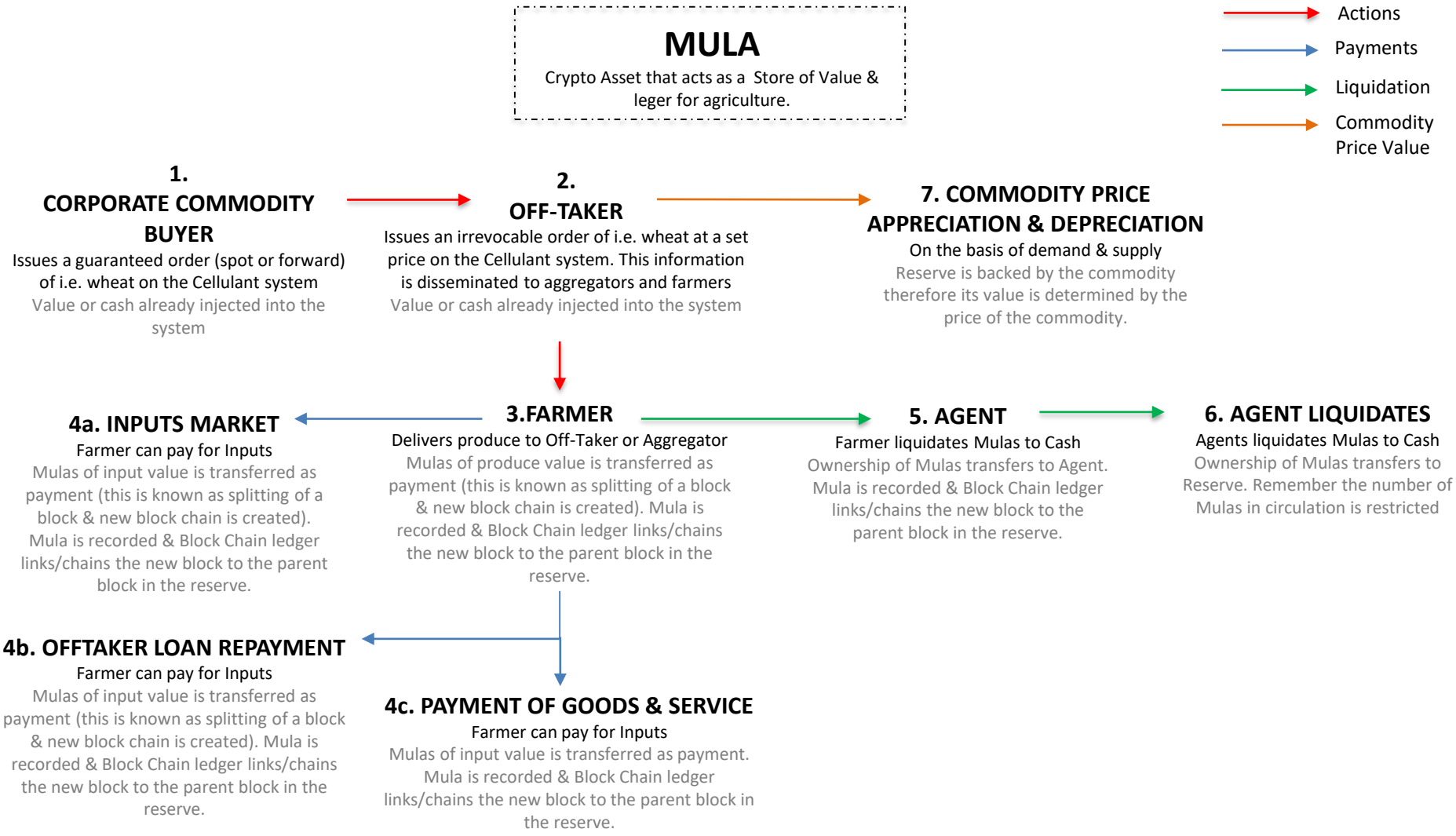
Farmers Cooperatives Value Chains

Users of the ecosystem services

The Agrikore (e-wallet) platform brings all markets together for the farmer



What the actors do within the ecosystem ?



PULLING IT ALL TOGETHER

1

CASH BACKED RESERVE

CELLULANT

Initial Owner & Underwriter

a

WHAT IS THE CELLULANT BLOCKCHAIN

1.Published Reserve
2.Private Ledger
3.Reserve Backed
4.Liquid (Mula to Naira)
5.Focused on an Actual Industry

b

HOW DOES CELLULANT MAKE MONEY

1.Transfers i.e. as Mula holders move from different stages of the Mula, transfer charges are placed
2.Exchange Rate Spreads
3.Reserve Appreciations
4.Ledger Request Placements
5.Contract Spreads

2

BLOCK CHAIN AS A LEDGER/UNIT OF ACCOUNT

AGRICULTURE ACTORS (FMCG, CORPORATE COMMODITY BUYERS, OFFTAKERS)

i.Commodity Orders Can Be Placed
ii.Interactions/Transactions by can be Monitored
iii.Appreciations/Depreciations can be Monitored

3

MULA AS A UNIT OF STORAGE/INVESTMENT

DERIVATIVE MULA

Value of Mula derived from an underlying financial asset i.e. commodity, interest rates, market index. For example, Forward & Futures contracts are also derivatives, therefore, one can invest cash into the system for speculative or hedging purposes to take advantage of changes in the value of the underlying commodity. This Mula only becomes a medium of exchange when the holder decides to make it a liquid/fungible Mula. An e-warehouse receipt is also a type of derivate Mula as it is a contract backed by an underlying asset. We are the ones to set the rules to govern this.

4

MULA AS A UNIT OF CURRENCY

LIQUID/FUNGIBLE MULA

Mula at this stage can be liquidated to cash by the holder. If held in Mulas, this Mula can be used as a medium of exchange. This is possible because of the growing acceptance of the Mula by businesses and individuals

c

CELLULANT – THE MINER GETS THE TRANSACTION FEE

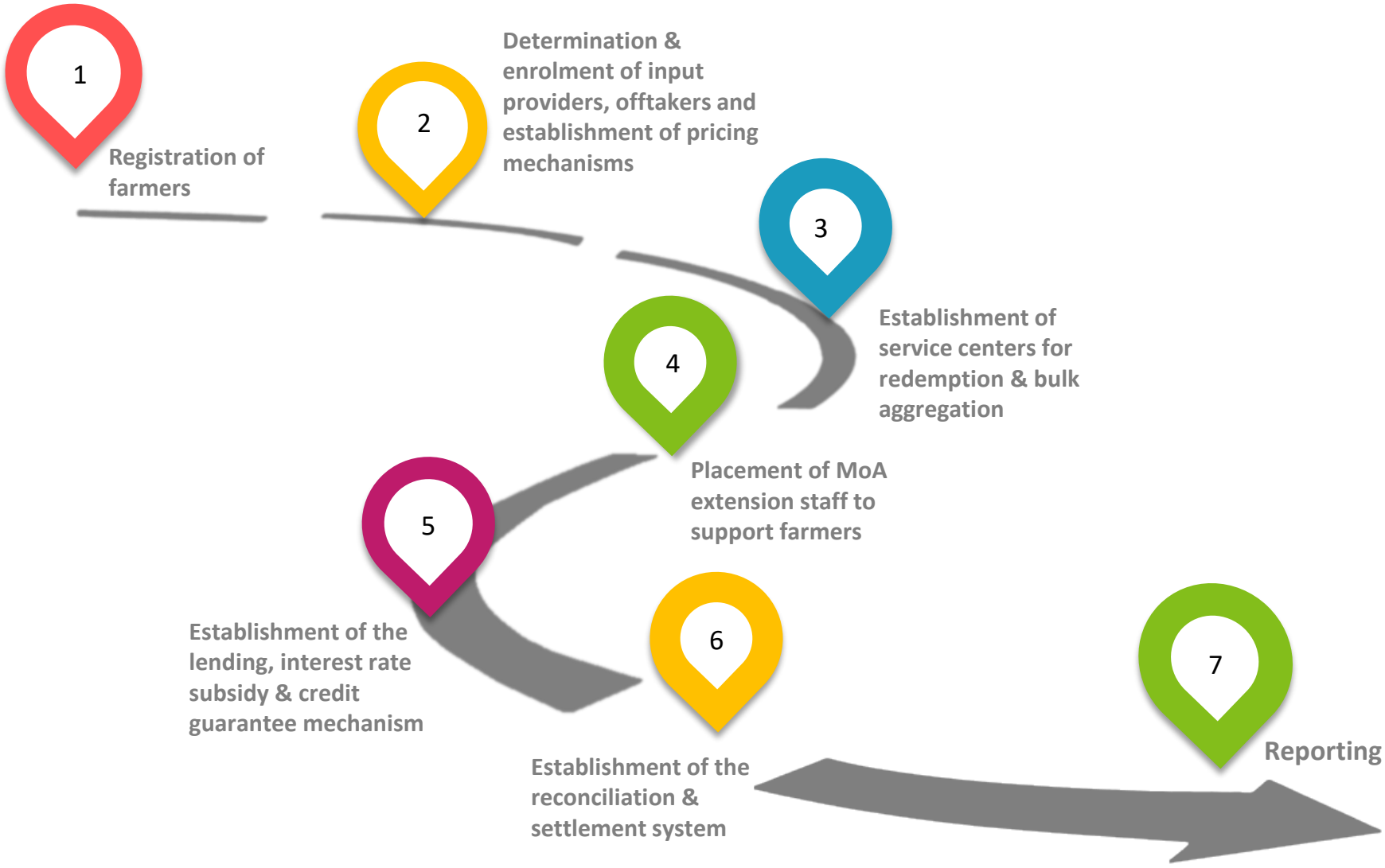
1.Bitcoin – Computerized Miners
2.Visa/Mastercard – Mine transfers - % fee
3.Cellulant – Mines Mula Transfers - % fee

4

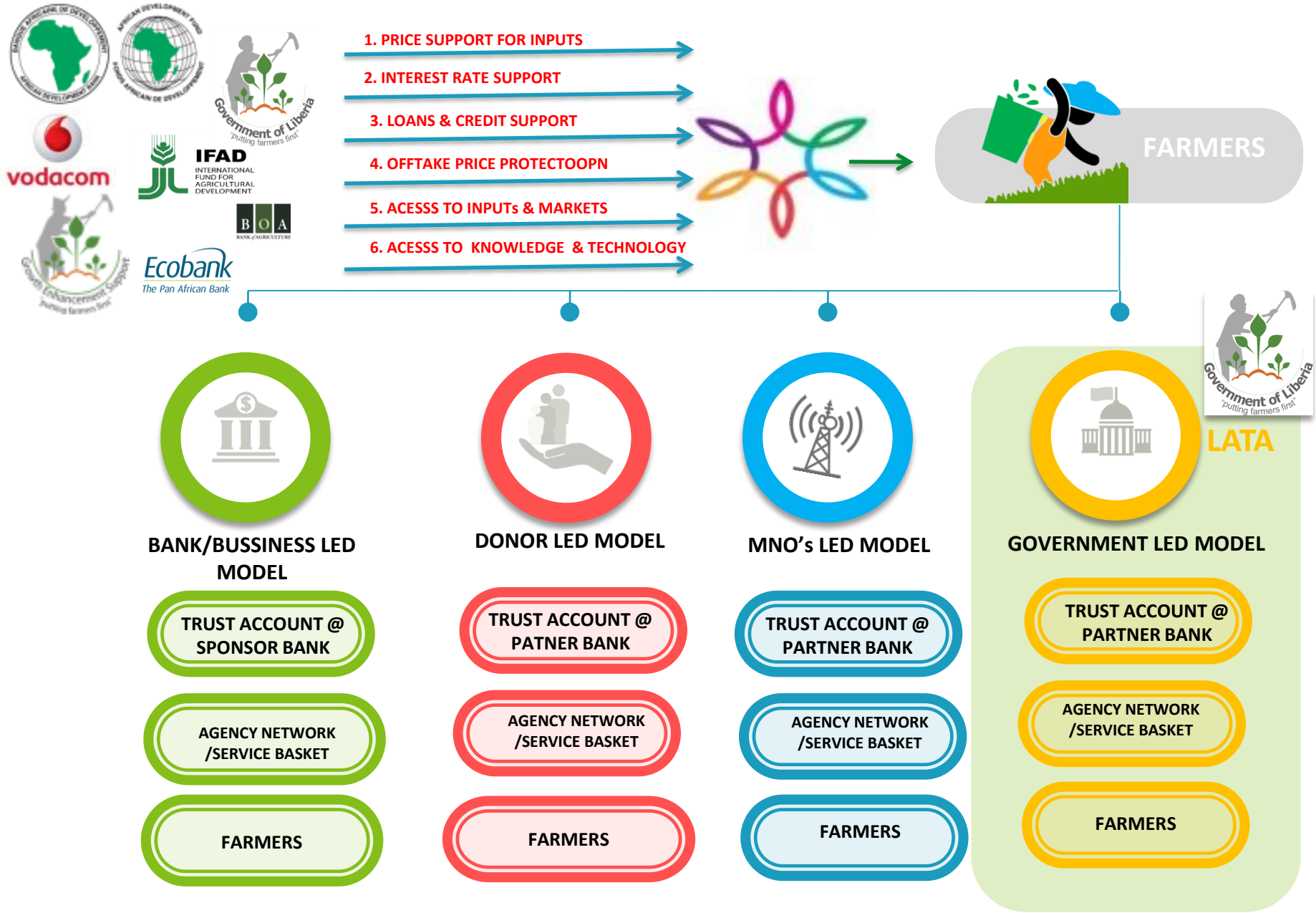
THE E-WALLET IMPLEMENTATION

- The process
- Implementation models

7-step process for an effective implementation of the e-wallet platform in a country.



WHAT & HOW DOES E-WALLET DELIVER TO FARMERS?



4

THE REPORTING INTERFACES

- Dashboard
- KYC database
- Reporting and settlement
- Redemption process

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41.206.23.39/LATA/dash.php
Apps | Bud Light Salutes Rea | Finclusion Lab | Analy | #IamAzeez - YouTube | Other bookmarks

Dashboard
Data Table

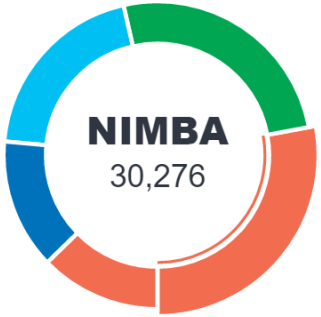
Dashboard Statistics Overview

Dashboard

Generated: 17th Sep 2016 10:03:05

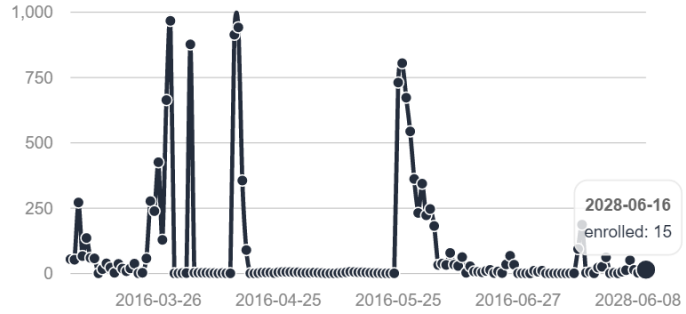
184,722	15	123	319
Enrolled Farmers	Active COUNTY	Active DISTRICT	Nos Of Tablets
View Details	View Details	View Details	View Details

Top 5 COUNTY



View Details

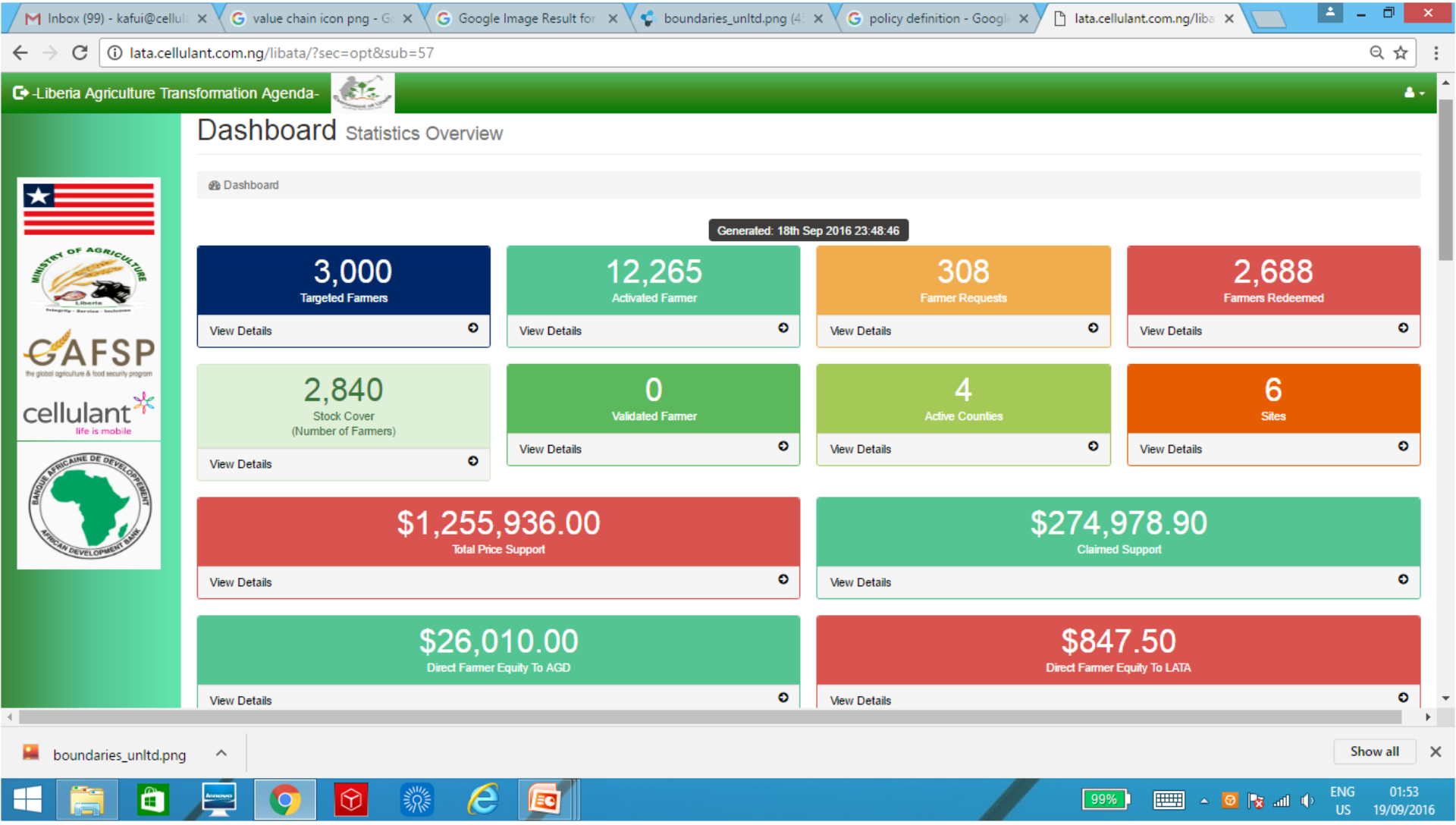
Nos of Enrolled Farmers by Date



View Details

Ask me anything
11:08 AM
9/17/2016

LATA Redemption dashboard



KYC Database of smallholders farmers. The major records of farmers are captured and displayed in the database

Print Version

Page 1 of 3,689 of a total of 184,425 record(s)

pages: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |>> View Next 10 Pages >>|

#		Farmer	Fullname	Primary Phone Number	Secondary Phone Number	Gender	Date Of Birth	County	Dsitrict	Area	Crop	Primary Crop	Farmer Crop	FarmerID Status
1		A000116075	Moore Dudu	880750052	0	Male	13-11-1956	BOMI	DOWEIN	BENDA	N/A	Vegetables	None	OK
2		A000007149	Momo Konah	770391226	0	Male	17-04-1979	BOMI	DOWEIN	BOGBEH	N/A	Corn	Rice	OK
3		A000006510	Folley Kamah	777657529	0	Female	23-11-1985	BOMI	DOWEIN	WEAJOR	N/A	Corn	Groundnut	OK
4		A000007726	Gotolo Kromah A	770476151	0	Male	28-11-1962	BOMI	DOWEIN	BENDA	N/A	Corn	None	OK
5		A000007006	Alunah Malikee	886817165	0	Male	12-05-1956	BOMI	DOWEIN	BENDA	N/A	Oilpalm	Corn	OK

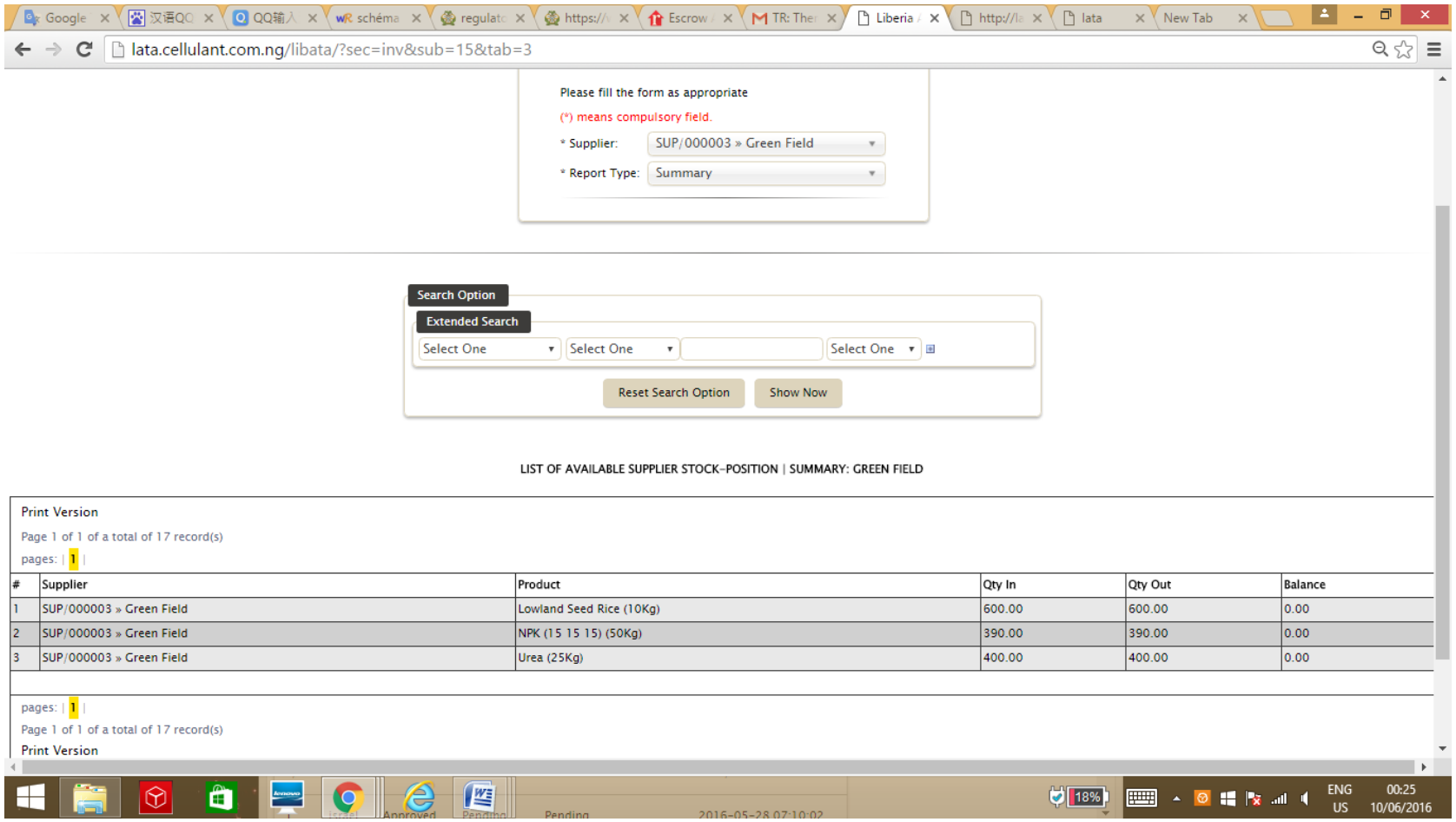
General | Location Order | County | District | Area

Farmers are mapped to an area, to a value chain and are linked to a phone number

Location Tree

- National
  - BOMI
    - DOWEIN
    - KLAY
    - SUEHN MECCA
    - SENJEH
  - BONG
  - GBARPOLU

Stock and transaction tracking tools



Real time transaction log to monitor what is happening in the field during redemption

lata.cellulant.com.ng/libata/?sec=opt&sub=57

Page 1 of 31 of a total of 1532 record(s)

pages: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |>> View Next 10 Pages >>|

#	Phone Number	Mesage Content	Destination Address	Description	Transaction Remark	Transaction Status	Creation Date	Last Modified
1	231880565164	TOK 3089082527 C	360	Items Already Fully Redeemed!!! #tk:3089082527	Failed	Processed	2016-06-09 20:17:21	2016-06-09 20:17:21
2	231880423089	LATA NK50 UA25 LR10 C	360	Successful Transaction! Your 10-Digit Redemption Token is: 3089082527. Please proceed to validate your token & collect your Input.	Pass!!!	Processed	2016-06-09 20:15:56	2016-06-09 20:15:56
3	231880565164	TOK 3089922548 C	360	You have successfully redeemed the input(s): NK50, UA25, LR10 for FarmerID: A000023890 #0880423089	Pass!!!	Processed	2016-06-09 20:13:49	2016-06-09 20:13:49
4	231880423089	LATA NK50 UA25 LR10 C	360	Successful Transaction! Your 10-Digit Redemption Token is: 3089922548. Please proceed to validate your token & collect your Input.	Pass!!!	Processed	2016-06-09 20:12:13	2016-06-09 20:12:13
5	231880565164	TPR NK50 UA25 LR10 A000046162 C	360	Farmer must perform self redemption because Phone Number exists!!! #Phone Number: 775090414 #Farmer ID: A000046162	Failed	Processed	2016-06-09 19:21:52	2016-06-09 19:21:52
6	231880565164	TPR NK50 UA25 LR10 A000025126 C	360	Farmer must perform self redemption because Phone Number exists!!! #Phone Number: 776054066 #Farmer ID: A000025126	Failed	Processed	2016-06-09 19:21:03	2016-06-09 19:21:03
7	231880565164	TPR NK50 UA25 LR10 A000023430 C	360	Farmer must perform self redemption because Phone Number exists!!! #Phone Number: 776341041 #Farmer ID: A000023430	Failed	Processed	2016-06-09 19:20:13	2016-06-09 19:20:13
8	231880565164	TPR NK50 UA25 LR10 A000025976 C	360	Farmer must perform self redemption because Phone Number exists!!! #Phone Number: 777918882 #Farmer ID: A000025976	Failed	Processed	2016-06-09 19:19:21	2016-06-09 19:19:21
9	231880565164	TPR NK50 UA25 LR10 A000023621 C	360	Farmer must perform self redemption because Phone Number exists!!! #Phone Number: 775543082 #Farmer ID: A000023621	Failed	Processed	2016-06-09 19:18:29	2016-06-09 19:18:29
10	231880565164	TPR NK50 UA25 LR10 A000046472 C	360	You have successfully redeemed the input(s): NK50, UA25, LR10 for FarmerID: #0900000072	Pass!!!	Processed	2016-06-09 19:16:51	2016-06-09 19:16:51
11	231880565164	TPR NK50 UA25 LR10 A000046373 C	360	Farmer must perform self redemption because Phone Number exists!!! #Phone Number: 776703075 #Farmer ID: A000046373	Failed	Processed	2016-06-09 19:14:54	2016-06-09 19:14:54

60% ENG US 21:52 09/06/2016

Settlement module for reconciliation

lata.cellulant.com.ng/libata/?sec=smt&ilD=1&sub=0

LIST OF AVAILABLE AGRO-DEALER FRANCHISE FOR SETTLEMENT

Sorry no record(s) was found!

LIST OF SELECTED AGRO-DEALER FRANCHISE FOR SETTLEMENT

*Click on Franchise to view details
*Click on **Farmer Equity To AGD** to view details

Print Version

Page 1 of 1 of a total of 2 record(s)

pages: | 1 |

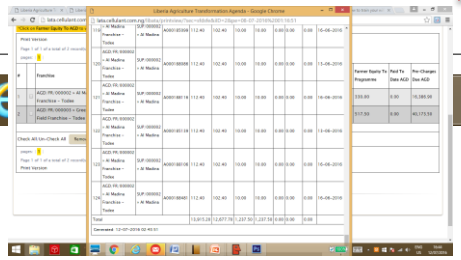
#		Franchise	Supplier	Unique Farmers	Total Price Support	Total Farmer Equity	Cost To Farmer	Cost To AGD	Supplier Credit Line	AGD Equity	Amount To AGD	Amount To Supplier	Farmer Equity To AGD	Farmer Equity To Programme	Paid To Date AGD	Pre-Charges Due AGD
1	☐	AGD/FR/000002 » Al Madina Franchise - Todee	SUP/000002 » Al Madina	157	16,056.90	1,567.50	17,624.40	0.00	0.00	0.00	17,624.40	0.00	1,237.50	330.00	.00	16,386.90
2	☐	AGD/FR/000003 » Green Field Franchise - Todee	SUP/000003 » Green Field	390	39,666.00	3,880.00	43,546.00	0.00	0.00	0.00	43,546.00	0.00	3,372.50	517.50	.00	40,173.50

Check All/Un-Check All | Remove

pages: | 1 |

Page 1 of 1 of a total of 2 record(s)

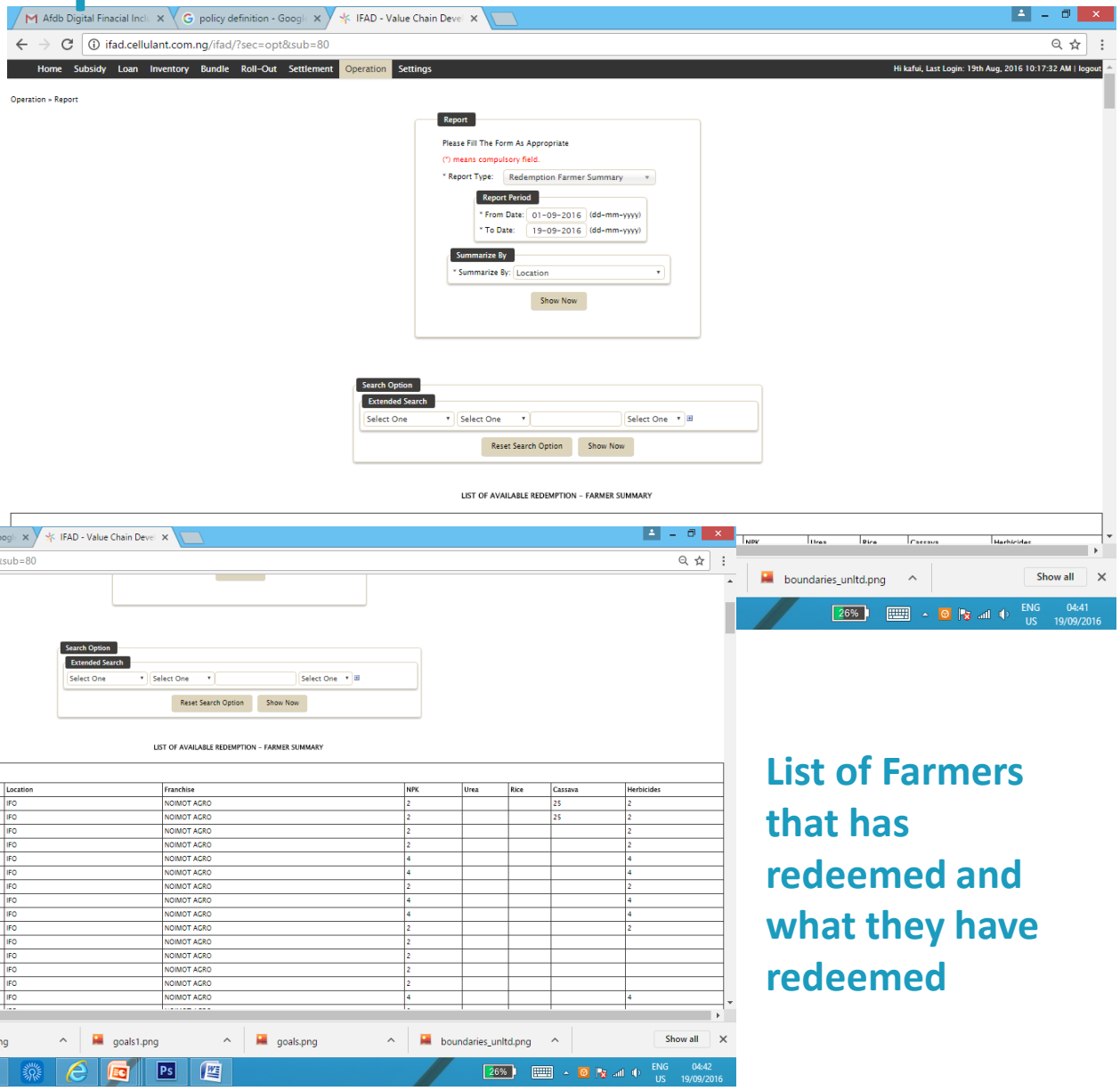
Print Version



List of farmers that paid their Equity directly to the AGD (Cash)

List of farmers that paid their Equity directly to LATA (Mobile Money)

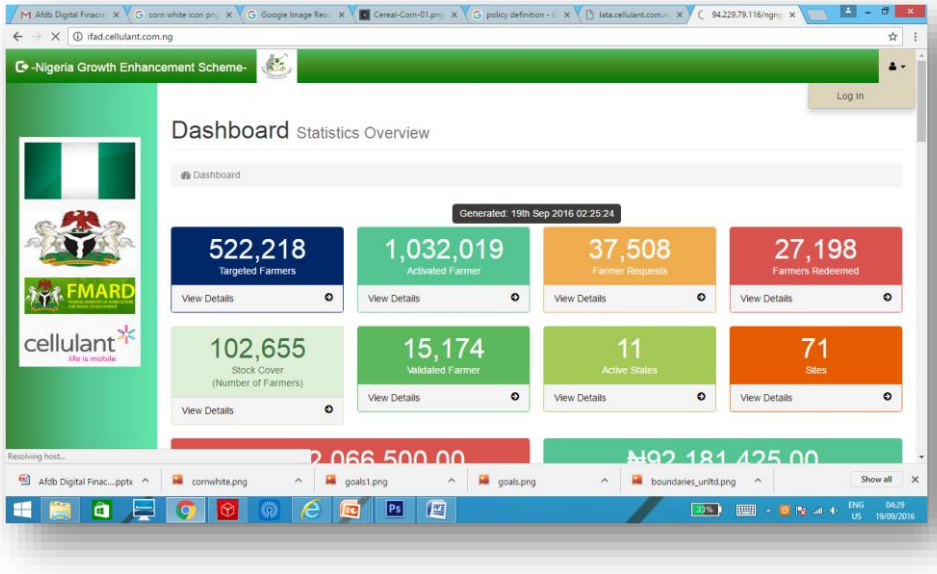
Reporting module for redemption per day, per location, per inputs



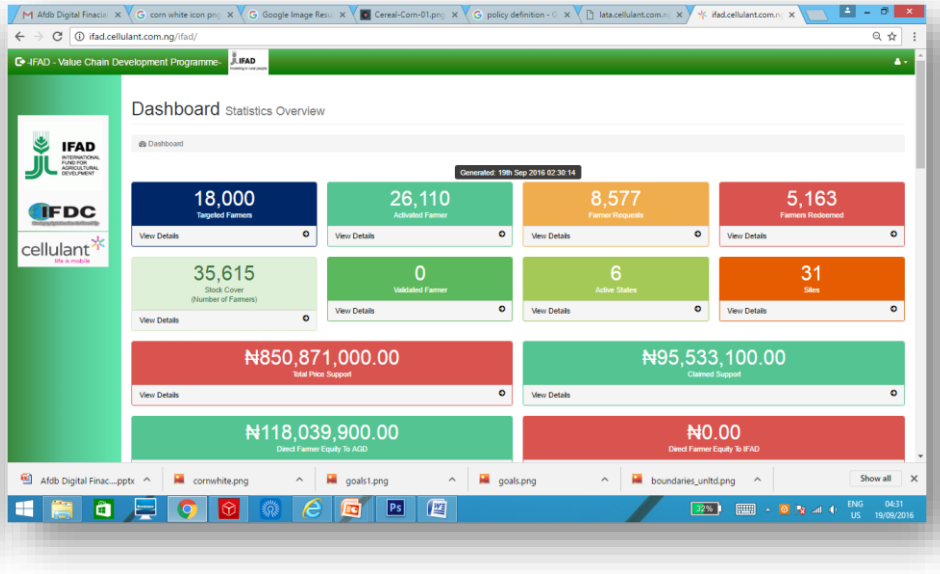
#	Date	FarmerID	Location	Franchise	NPK	Urea	Rice	Cassava	Herbicides
1	02-09-2016	OG00057978	IFO	NOIMOT AGRO	2			25	2
2	02-09-2016	OG00071565	IFO	NOIMOT AGRO	2			25	2
3	02-09-2016	OG00096460	IFO	NOIMOT AGRO	2				2
4	02-09-2016	OG00054801	IFO	NOIMOT AGRO	2				2
5	02-09-2016	OG00041151	IFO	NOIMOT AGRO	4				4
6	02-09-2016	OG00054641	IFO	NOIMOT AGRO	4				4
7	02-09-2016	OG00036301	IFO	NOIMOT AGRO	2				2
8	02-09-2016	OG00047866	IFO	NOIMOT AGRO	4				4
9	03-09-2016	OG00056299	IFO	NOIMOT AGRO	4				4
10	03-09-2016	OG00004587	IFO	NOIMOT AGRO	2				2
11	03-09-2016	OG00055602	IFO	NOIMOT AGRO	2				
12	03-09-2016	OG00063685	IFO	NOIMOT AGRO	2				
13	06-09-2016	OG00069078	IFO	NOIMOT AGRO	2				
14	06-09-2016	OG00058430	IFO	NOIMOT AGRO	2				
15	06-09-2016	OG00058563	IFO	NOIMOT AGRO	4				4

List of Farmers that has redeemed and what they have redeemed

Other current schemes of the e-platform - Dashboard Screenshots



Nigeria GES e-platform



IFAD e-platform

Message body
LATA NK50
UA25 LR10 C
Options
Back
Lonestar Cell

Message body
Your request is being processed. Kindly wait for a response -
Options
Back
Lonestar Cell

Message body
Successful
Transaction!
Your 10-Digit
Redemption
Token is:
0618881408
Options
Back
Lonestar Cell

Cellcom
Transaction
Your 10-Digit
Redemption
Token is:
Options
Back
NOKIA
Options
Clear
ellulant
life is mobile

front view

GOVERNMENT OF THE REPUBLIC OF LIBERIA
REGISTRATION SLIP
SMALLHOLDER AGRICULTURAL PRODUCTIVITY ENHANCEMENT & COMMERCIALIZATION (SAPEC) PROJECT

Farmer ID: A000050001

NAME:

+231 770115977
info@cellulant.com.ng

back view

NOTE: *This is evidence that you have been captured.*
It is therefore mandatory that you do not lose this card.

GAFSP
the global agriculture & food security program

cellulant
life is mobile

The Love of Liberty brought us here

ELLEN JOHNSON SIRLEAF
President of the Republic of Liberia

THE RESULTS TO DATE

Liberia Case Study

6

- Farmer registration
- Service delivery

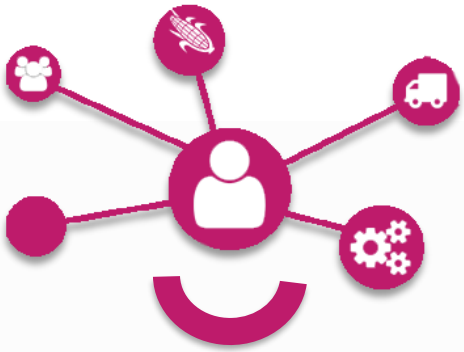
FARMER REGISTRATION

COVERAGE:
15 counties/123 Districts/319 Sites

STATUS: 21st March till Date
184,722 – Synced Data in 60days
15,288– Un-synced Data

Click on Hyperlinks below to view:
DASHBOARD
OFFICIAL WEBSITE

SERVICE DELIVERY



VALUE CHAIN
- Upland /Low land rice
- Cassava

WAREHOUSE & LOGISTICS HUBS
- 16 primary distribution points,
- 60 secondary distribution points,
- 162 truck trips required

FRAMEWORK TEST RESULTS
- 6 sites 2. 15days of activity / site
- 2688 farmers collected full package out of 3000 redeemed.

GOALS

FARMERS: 50,000 – 65,000 all sites included, (10,000 Cassava Farmers)

FERTILIZER INPUT PER FARMER
- NPK (15:15:15 – 1 Bag – 50kg)
- UREA – 25KG – 1 Bag

SEEDS PER FARMER
- Upland Rice– 25kg
- Lowland Rice – 10kg

STEMS PER FARMER
- Cassava – 20 Bundles (1000 Stems)

INVESTMENT

$ 9 MILLION

AGRIC IMPACT: Additional Extra 1Metric Tonne of Output Per Farmer = 65,000 Metric Tonne of Output
ECONOMIC IMPACT = $13million

SME FINANCE FORUM

cellulant
life is mobile

For a better world
A world for the people.

Thank You