



**LOTUS APP**

YOUR TRUSTED BLOCKCHAIN & XAMARIN TEAM

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# **A Blockchain-facilitated Financial Inclusion Project**

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# WHAT IS “FINANCIAL INCLUSION”?

*“One of the goals of **financial inclusion** is access at a reasonable cost for all households to a full range of financial services, including savings or deposit services, payment and transfer services, **credit and insurance.**”*

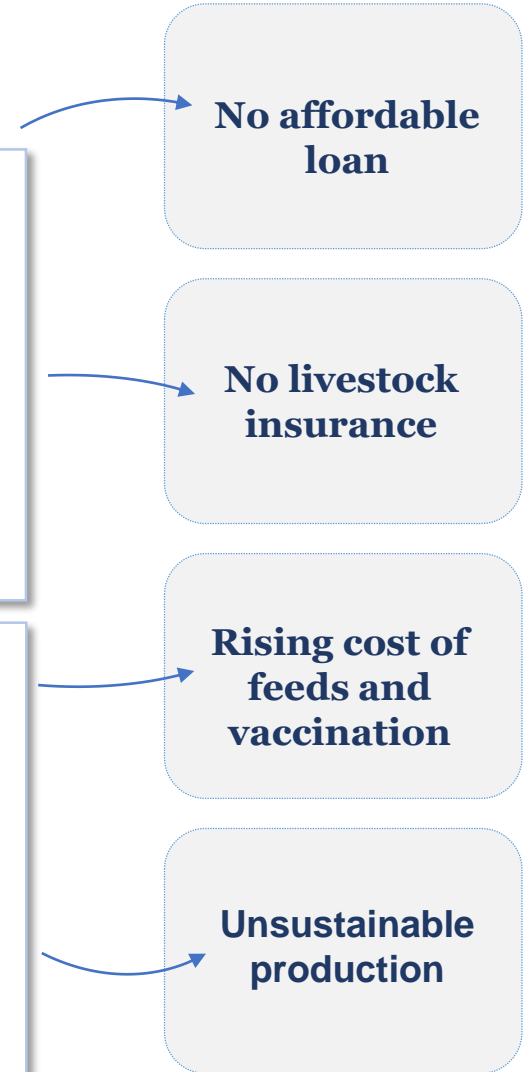
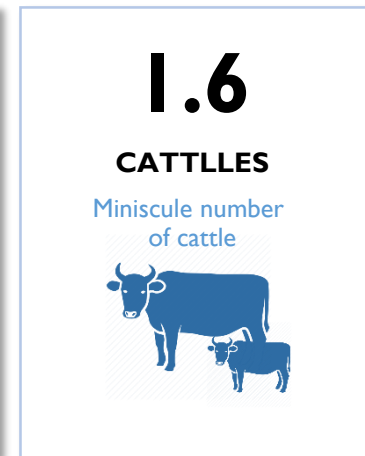
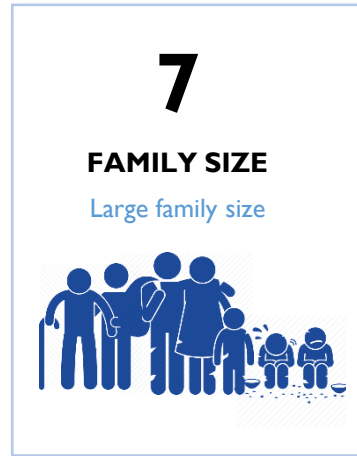
**Former United Nations Secretary -  
General Kofi Annan, 2013**



# POVERTY PROBLEM & CONSEQUENCES



Smallholder farmers contribute to 80% food supply, but more than 50% of smallholder farmers live in poverty

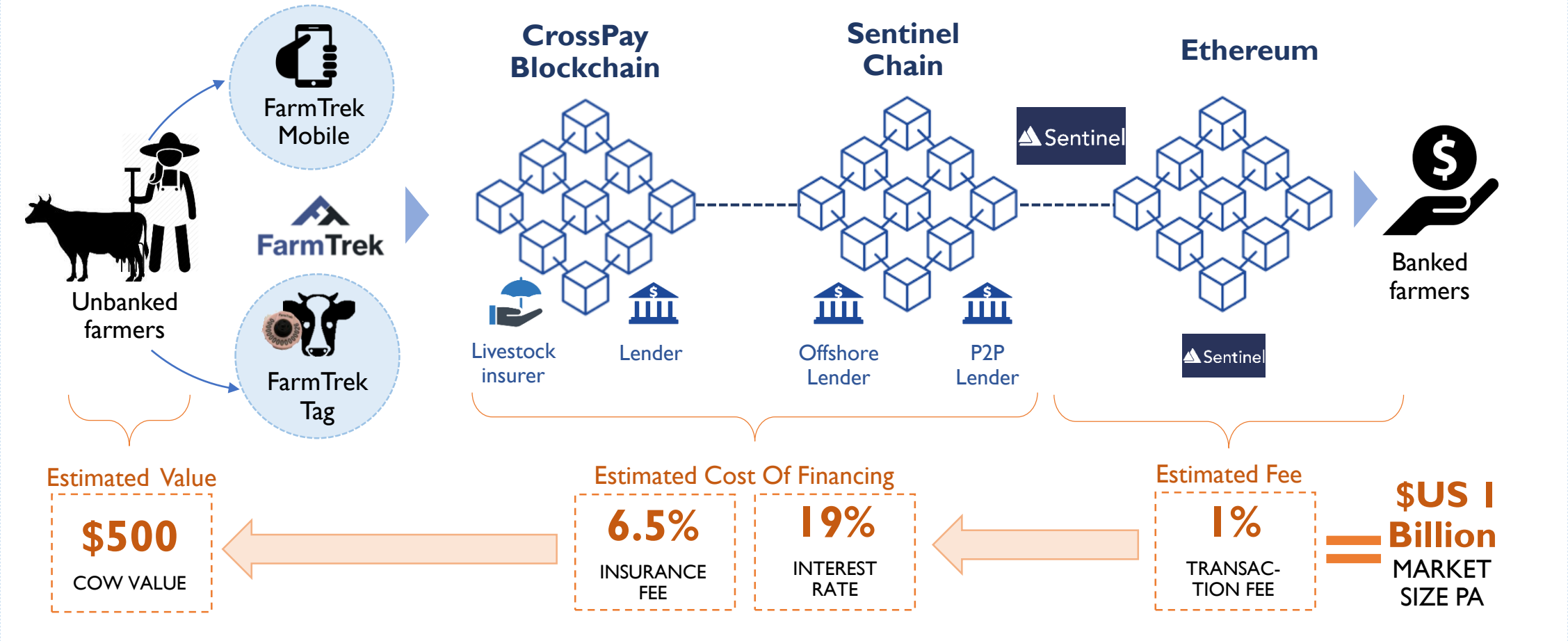


# SENTINEL CHAIN: SOLUTION

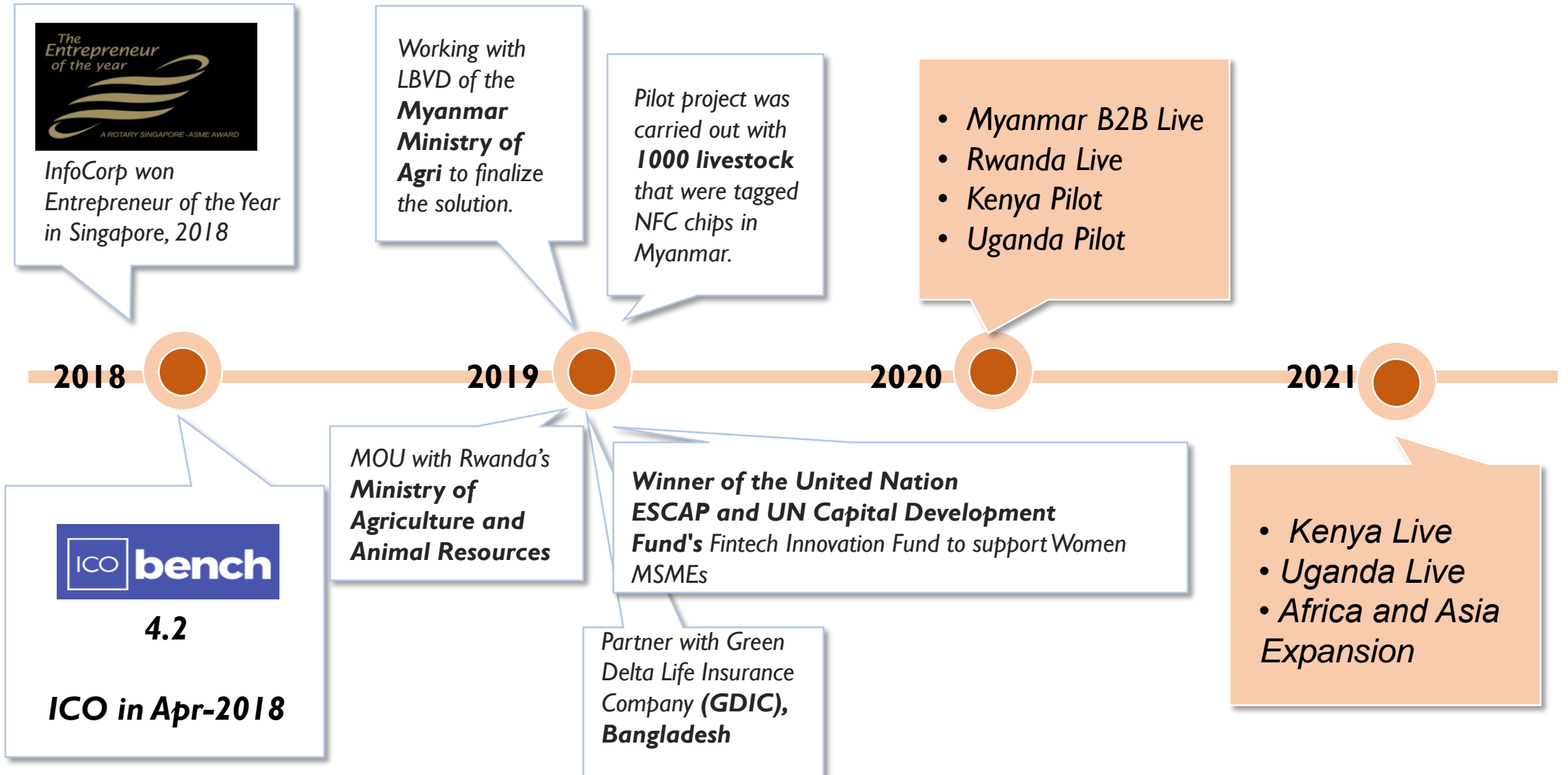


*Sentinel Chain: Integrating livestock and financial services ecosystems on blockchain*

## Unlock “Dead Capital” in Cattle for smallholder cattle farmers to finance working loans



# SENTINEL CHAIN: KEY MILESTONES

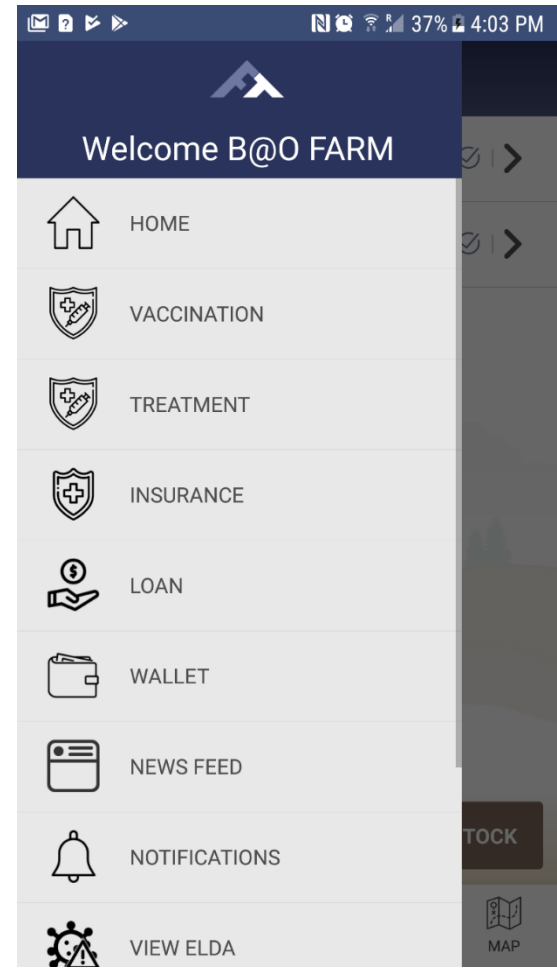
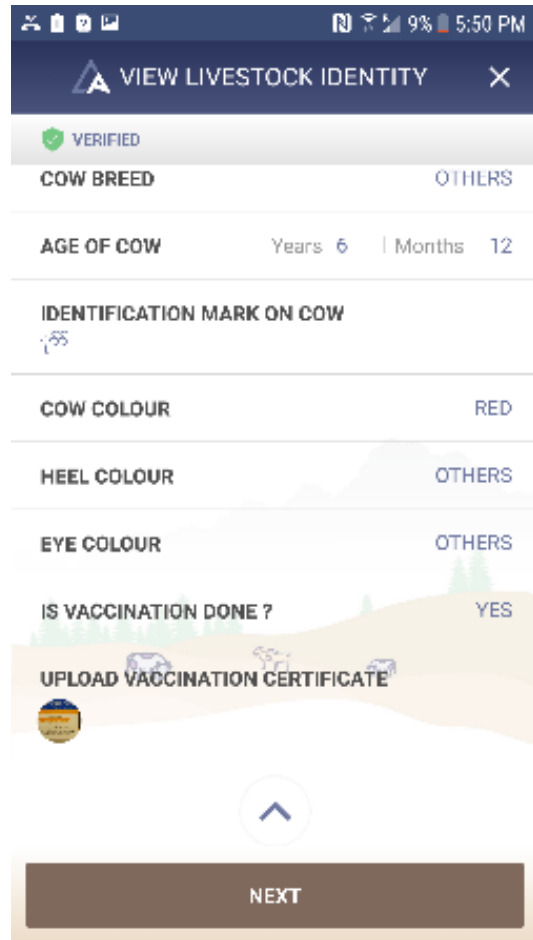
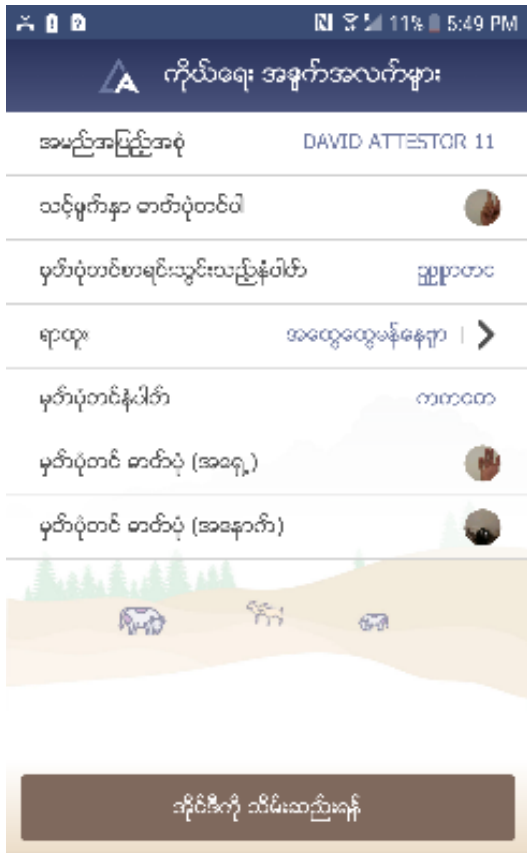




# LOTUS APP'S CONTRIBUTIONS TO THE PROJECT - cont.



## 3. FarmTrek Mobile Application





# LOTUS APP'S CONTRIBUTIONS TO THE PROJECT - cont.



## 4. Admin Portal

The screenshot displays the FarmTrek Admin Portal interface. It is divided into two main sections: a left sidebar with navigation menus and a main content area.

**Left Sidebar (User: RWANDA ADMIN):**

- DASHBOARD**
- GENERAL**
  - Livestock Owners
  - Livestock
- LIVESTOCK HEALTH**
  - Treatment Records
  - Vaccination Records
  - ELDA
- MANAGE**
  - Country
  - Company
  - Company Users
  - Livestock
  - Livestock Categories
  - Livestock Types
  - Livestock Breeds
  - Livestock Colors

**Main Content Area (User: INFOCORPADMIN):**

**CREDIT DETAILS (Borrower: NURU BUSIGO):**

BORROWER DETAILS	
Full Name	NURU BUSIGO
Phone Number	+250788350514
Status	Loan Provider Made Payment

**LOAN REQUEST DETAILS:**

Loan ID	416aa6f324f341e49c3af6e69d861db1
Loan Amount	250000
Loan Start Date	16/07/2019
Loan Due Date	16/01/2020
Offer Collaterals	1 Collaterals

**LOAN PROVIDER APPROVAL:**

Loan Interest Amount	10000 RWF
Loan Documents	

**Dashboard and Statistics:**

- REGISTERED LIVESTOCK OWNERS BY COUNTRY:**

Country	No. of livestock owners verified	No. of livestock owners registered
Singapore	9	2
Rwanda	12	35
Argentina	0	0
Bangladesh	0	0
India	0	0
Myanmar	0	0
Vietnam	0	0
- REGISTERED LIVESTOCK BY COUNTRY:** (Bar chart showing counts for various countries)
- FARMS:**
  - World map showing farm counts by country: India (90), Argentina (20), Rwanda (30), Singapore (45), Myanmar (90), Bangladesh (20).
  - Bar chart showing the number of farms by range:
 

Range	No. of Farms
0 to 25	21
26 to 50	70
51 to 75	93
76 to 100	99
101 to 125	47
126 to 150	12

# LOTUS APP'S CONTRIBUTIONS TO THE PROJECT - cont.



*Mr. Roy Lai (CEO of InfoCorp) at LOTUS APP office in Vietnam*



*General Director of LVBD Myanmar, InfoCorp Singapore team, with David Nguyen, CEO of LOTUS APP*

# KEY CHALLENGES



1

## ICO Security & Regulation by Singapore Government

- 13,000 users in 03 days
- KYC Whitebox & Blackbox Penetration Test on all Software, Infrastructure & Mobile App modules
- Some profiles were hacked during the ICO → Collaborated with Government to find out the hacker

2

## Communication between different Blockchain Networks

- Built the Sentinel Chain Bridge
- Smart Contract, PoA consensus

3

## Anti-counterfeiting NFC Tag

- Prevent delete/modify data in NFC chip
- NDA

4

## Low Internet Condition & limited configuration of old Android phones

- FarmTrek is built by Xamarin. Compatible with Android 5.5 – 9.0. RAM only 512MB
- Low Internet Condition. Real-time update new app versions & backward versions compatible
- Compression & Encryption, Multi languages
- Thousands of Test cases to ensure this “Banking app” is always stable

5

## Blockchain performance

- In its current state, the Ethereum network can process a maximum of 15 transactions per second (TPS)
- Caching data
- The Pilot Beta system can serve minimum of 15,000 of daily users, 100 transactions per second

6

## Systems operated across multiple Countries & Data Storage Rules

- Projects in: Myanmar, Bangladesh & RWANDA
- We had to decide which modules of system are belong to the Country-X and which modules are belong to Sentinel Chain. And separated the system



**THANK YOU!**

