



TA 9916-REG: Greater Mekong Subregion Sustainable Agriculture and Food Security

Output 2.2: Lao-PRC Livestock Traceability Demonstration

David Wells Roland-Holst
University of California, Berkeley

In association with



B E A R
BERKELEY ECONOMIC
ADVISING AND RESEARCH

26 May 2023



Livestock traceability has three main benefits, each of which is supported by private incentives to participate:

1. Benefit: Disease risk reduction

Incentive: Invest in animal health status to avoid penalties

2. Benefit: Product Quality and Value Creation

Incentive: Invest in higher quality to increase producer value

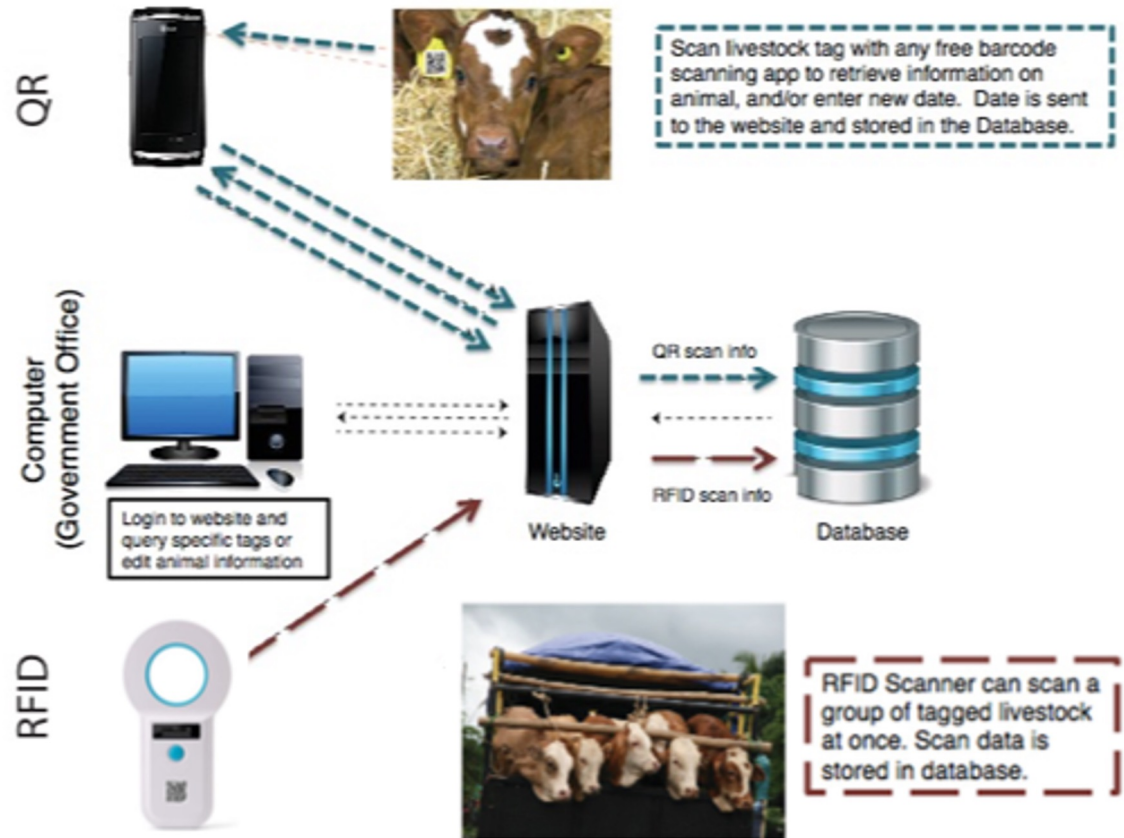
3. Benefit: Market Access and Poverty Reduction

Incentive: Join larger, more advanced supply chains

Livestock Traceability Design: Communication Channels

Technology:

- ❖ Unique digital tag for each animal
- ❖ Low or no cost mobile platform
- ❖ Individual animal and VC agent records stored in an SQL database on the Internet
- ❖ Registration of animals and events by any of three means, QR code, keypad entry, or RFID scan



Data records are compatible with national, regional, and international standards for health details and confidentiality.

3 Provinces, 6 Districts:

Xayaboury (Kenethao, Pak Lay)

Oudomxay (Muang Houn, Muang Xai)

Luang Namtha (Luang Namtha, Muang Sing)

One-way corridor distance:

730 km (984 km including Vientiane)

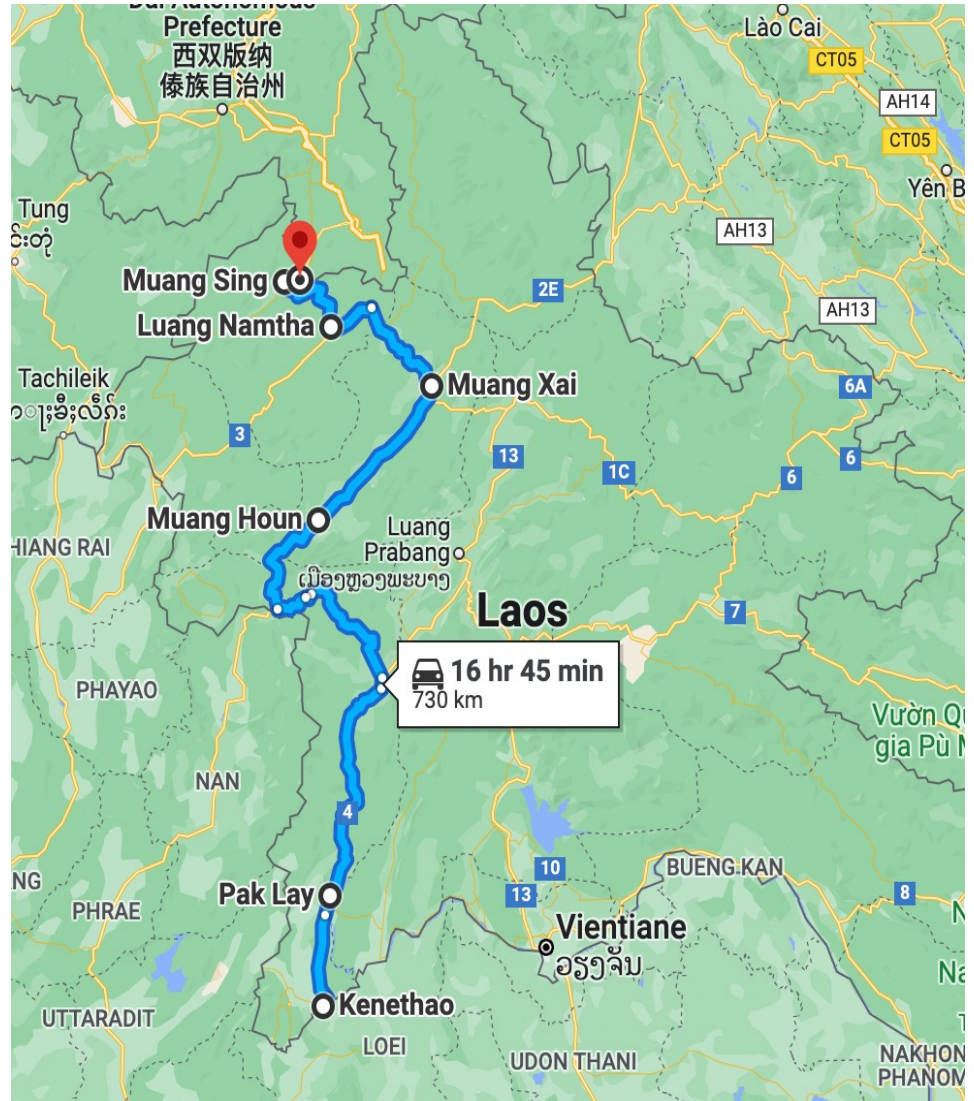
Two borders:

Nam Hueang (Thai-Lao)

Panghai (Lao-PRC)



Livestock Corridor



Cloud based searchable database: Browser and cell phone platform

TA-9916 Traceability
(ການສາທິດການຕິດຕາມ)



GREATER MEKONG
SUBREGION
CORE AGRICULTURE
SUPPORT PROGRAM

Animal Information (ຂໍ້ມູນສັດ)



ID: No
RFID: 964001024160556
Breed (ສາຍພັນສັດ): Cross breed
Species (ຊະນິດ): 0001
Birthplace (ບ້ານເກີດ): B. Tarkdaed
Date of Birth (ວັນເກີດ): 2018-08-07
Owner Name (ເຈົ້າຂອງ): Mr thud

All tagged cattle are registered, and records of origin and and all recorded events follow them throughout their lifecycle, including

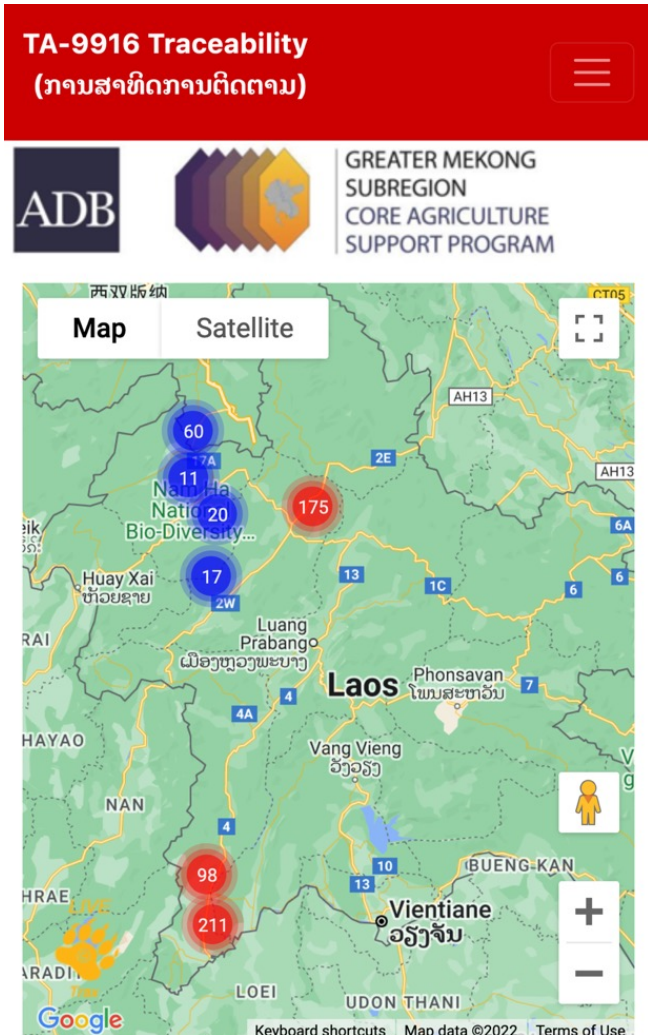
1. Birth and breed history
2. All ownership, custody, and trading details
3. Feeding history
4. Inspection, vaccination, and medication history
5. Transit history with by location and mode
6. All transactions, border clearances, fees, and related registration events

Analogous records are maintained for all public and private VC agents in the system.

Access to the database is highly stratified – each individual has to be approved for each record type in the database.

Like most advanced internet databases, capacity is basically limitless. Millions of animals and thousands of entries in each record can be included.

Explicit spatial information facilitates both administration and commerce




We have embedded the database in Google's API, enabling all features of google maps in our spatial user interface.

The example shows an actual mobile phone screenshot, with four individual farms (blue) and three groups of farms (red).



Farm and animal level detail is unprecedented

TA-9916 Traceability

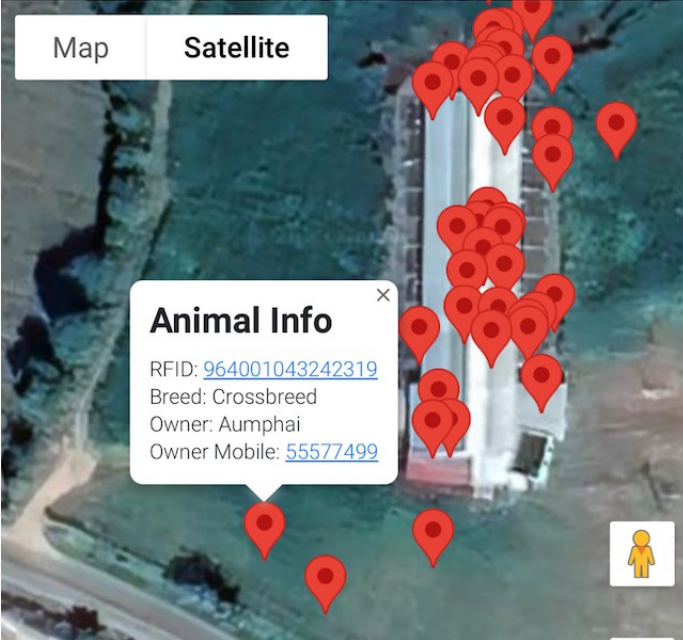
ADB  **GREATER MEKONG SUBREGION CORE AGRICULTURE SUPPORT PROGRAM**

All animals ▼

All breeds ▼


Filter

Map **Satellite**



Animal Info ×

RFID: [964001043242319](#)
Breed: Crossbreed
Owner: Aumphai
Owner Mobile: [55577499](#)



May 26, 2023

Zooming in further with Google Maps reveals individual animals, displayed on a larger farm in Satellite View.

Hovering over an animal reveals a caption of their data record.



ADB TA-9916

Slide 7

TA-9916 Livestock Database Dashboard



Check it out!





May 26, 2023



ADB TA-9916

