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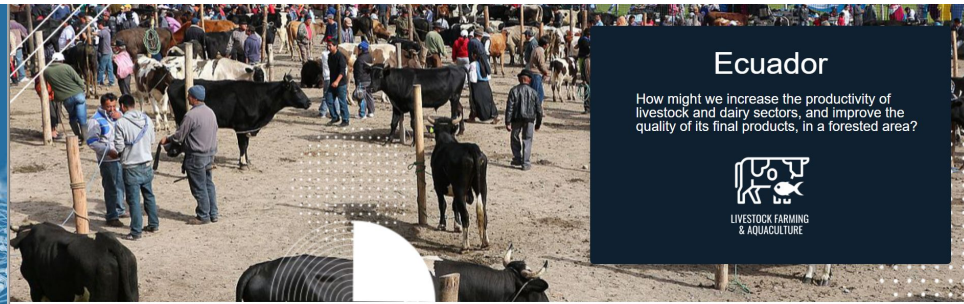
cultivate
Innovation for Sustainable Agriculture

Vision Development Discussion
August 5, 2020

Traceable livestock and dairy production in Ecuador to enhance sector productivity, quality and sustainability in forested areas



Purpose/ Outline

This presentation is meant to:

- review original vision, timeline and primary goals of the project
- approaches to traceability taken elsewhere
- stakeholder input received and gaps remaining
- facilitate an initial discussion for a traceability prototype
- develop next steps in the design process

Original Vision – Digital traceability and certification across entire value chain from "farm to fork" to better connect producers to higher value national and global markets while accessing incentive and credit programs

Phase 1 Project scope

Improved traceability – RFID tags & blockchain registry

Improved traceability – QR codes, DNA or chemical taggants(leather) & blockchain registry

Digital certification - deforestation-free + targeted incentives & credit

Digital certification - "Punto Verde" and "Marca Pais" certification systems

Deforestation-free* Birthing Farms

Deforestation-free* Backgrounder Farms

Deforestation-free* Grass Fed Fattening Farms

Feedlot

Certified "Punto Verde" Slaughterhouse

Secondary Processing

Distributor

Brand "Marca Pais" / Retail (Domestic & Export Markets)

Beamhouse

Tanning

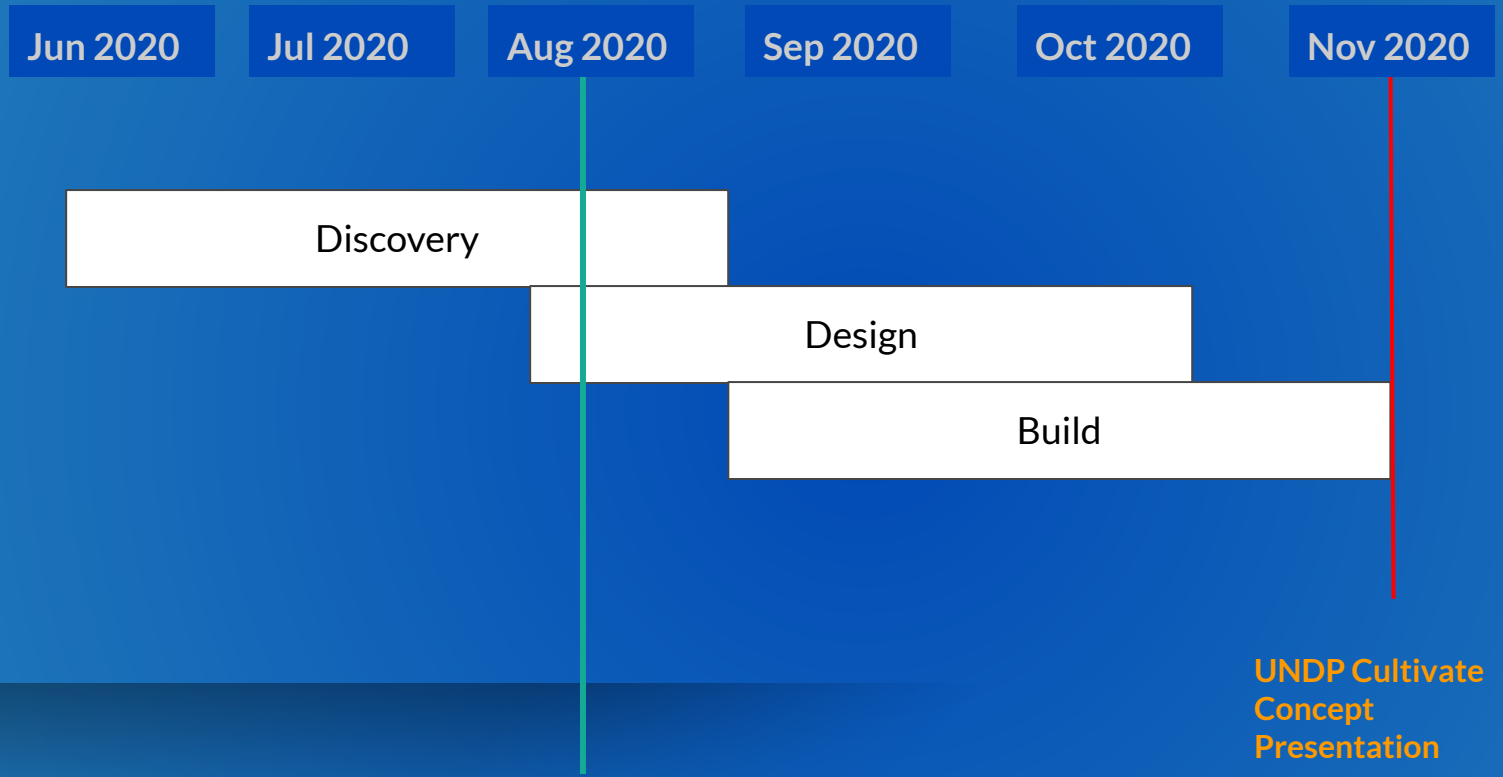
Finishing

Sewing

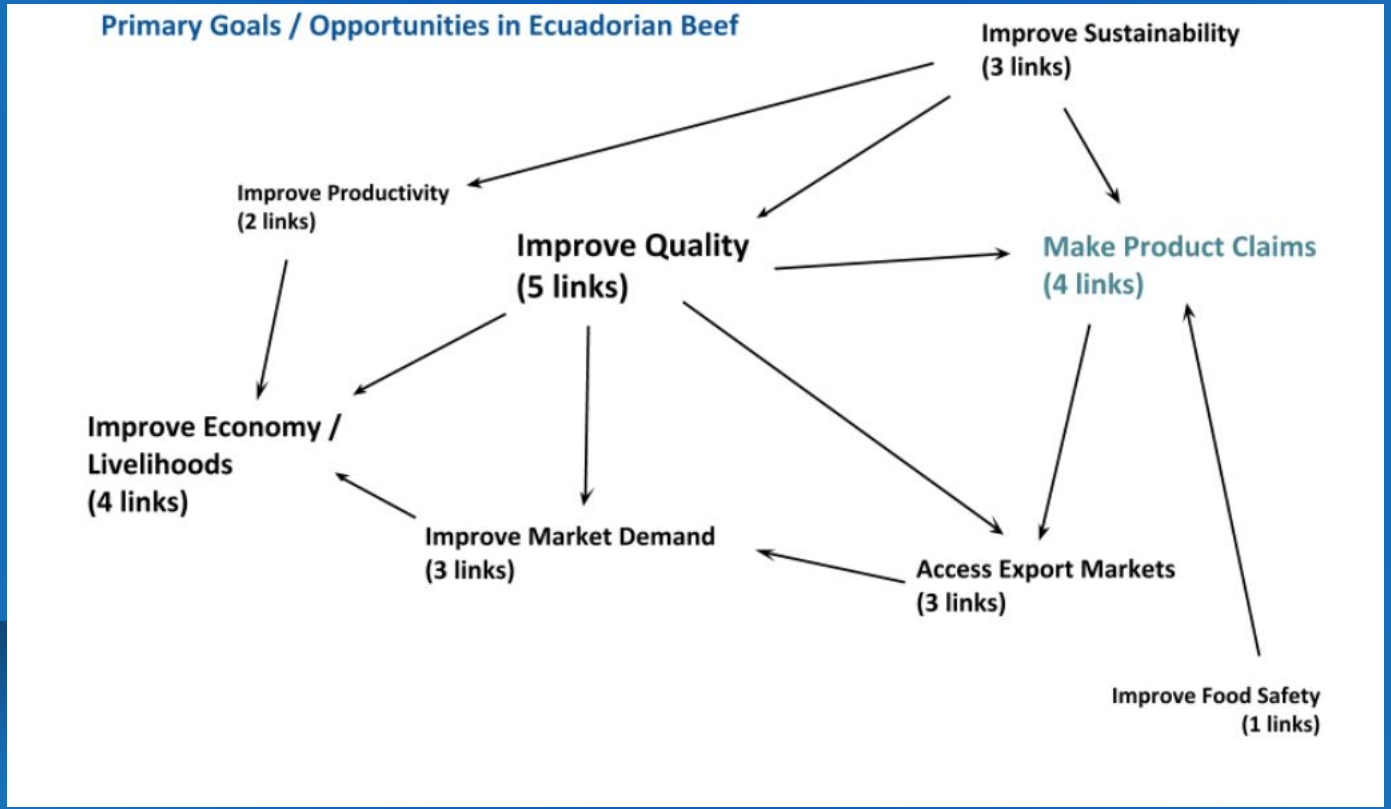
Brand "Marca Pais" / Retail (Domestic & Export Markets)

*agroforestry and silvo-pastoral systems

Where we are...


Jun 2020
Jul 2020
Aug 2020
Sep 2020
Oct 2020
Nov 2020
Discovery
Design
Build
UNDP Cultivate Concept Presentation

Goal Mapping for Ecuadorian Meat



Broad Goals (Motivation) Associated with Traceability Systems	How	Benefits
Improve Sustainability Practices of Producers	• Deforestation-free certification • Targeted incentive and loan programs • Grant programs that promote sustainable livestock practices (agro-forestry, silvo-pastoralism)	• Contribute to REDD+ Action Plan, NDC • Access to financial incentives linked to sustainability - RBP's, impact credits • Environmental and social safeguards (i.e. protection of biodiversity, indigenous land rights)
Improve Livelihoods for Producers	• Branding • Claims framework • Access export markets • Tracking productivity/performance data (age, breed, live weight, dressed weight) • Grant programs that promote productivity improvements (breeding & genetics, agro-forestry, pasture improvement)	• Improved prices/sales • Improved productivity of existing farms • Reduced pressure to expand into Amazon (reduced deforestation) • New income sources (tree crops, nuts)
Increase Food and Animal Safety	• Vaccinations • Animal disease monitoring and inspection (BSE, FMD, TB) • Monitoring animal transport • Slaughter inspections • First freeze date • Best before/expiry date	• Reduced animal losses due to disease/herd destruction • Improves animal weight gain • Consumer confidence

Traceability Systems Across Countries with Different Goals

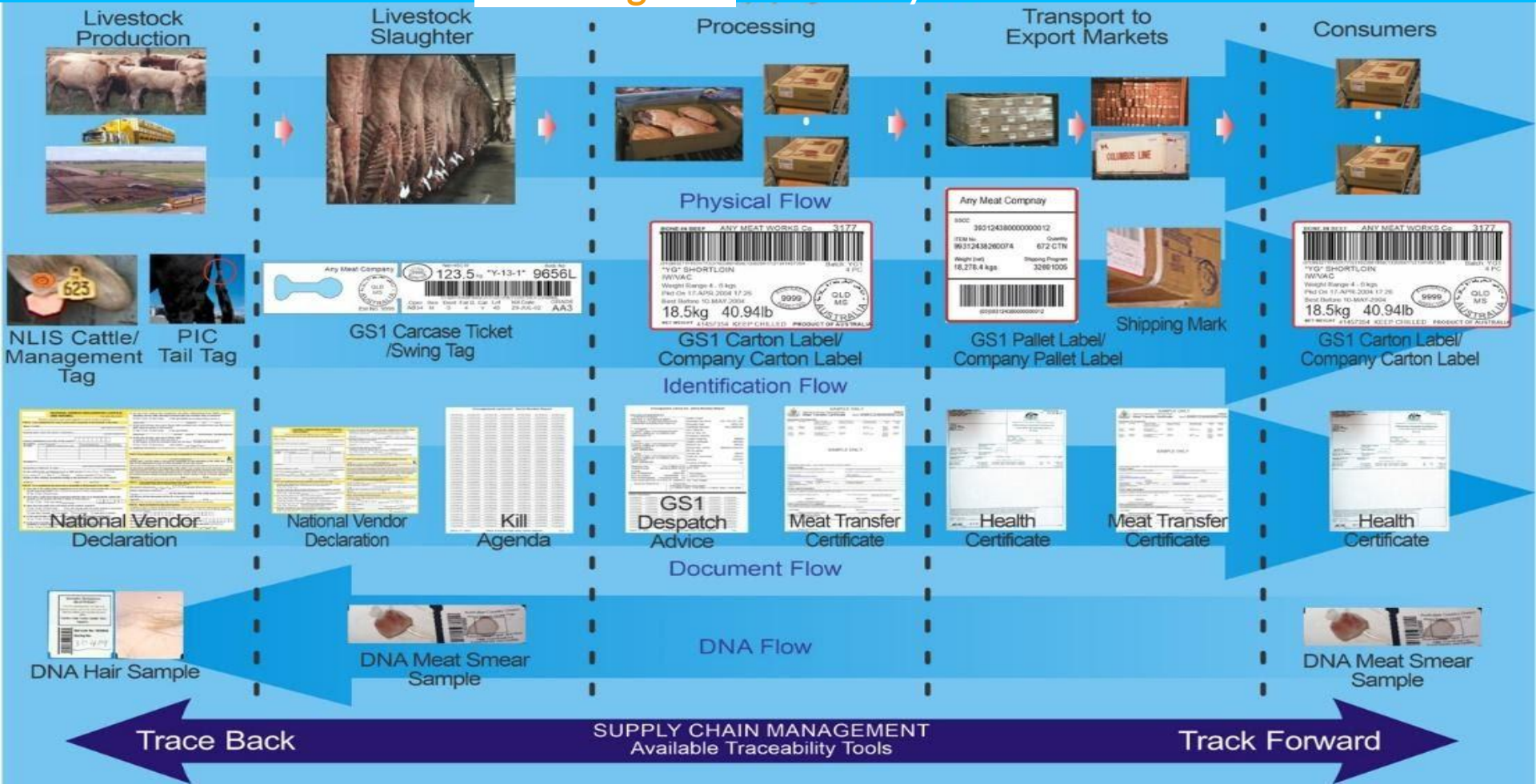
Countries take long-term strategic perspective while identifying primary goals or motivation behind development of traceability systems.

Key in determining what technology and tools are required.

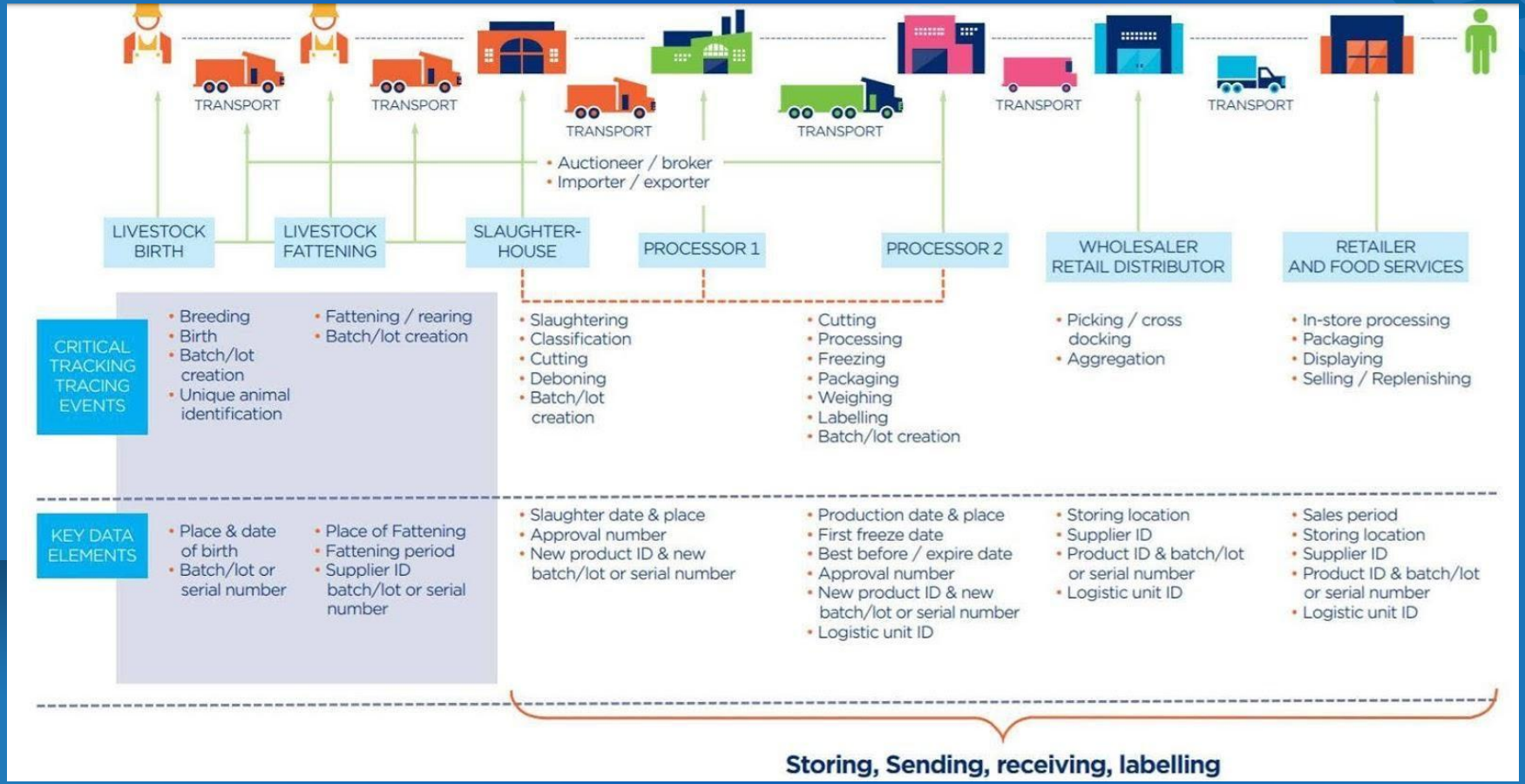
	Launch date	Premises ID	Individual cattle ID	Electronic cattle ID	Motivation
Australia	1999, mandate in 2005	M[b]	M	M	Market access, food safety, animal disease
Brazil	2002	M	M	V[b]	Control FMD and market access to EU
Canada	2002	M	M	M	Market access accelerated with BSE
European Union	1997, current law in 2000	M	M	V	Animal health and BSE response
Japan	2003	M	M	V	Response to BSE discovery to restore consumer confidence
Mexico	2003	V	V	V	Animal health, census, traceability
New Zealand	2006	V	V	V	Market access and animal health (TB)
South Korea	2004, updated in 2009	M	M	V	Consumer food safety assurance and animal health
Uruguay	2006	M	M	M	Control FMD and market access
United States	2013	V[d]	V[c]	V	Control diseases for animals crossing states

[b]M=mandatory and V=voluntary
[c]Michigan requires mandatory individual cattle identification since 2007.
[d]Mandatory premise identification for Wisconsin and Indiana

Australian Meat Industry Heavily Reliant on Exports Determined Market Access and Risk Mitigation as Primary Drivers



EU Ranks Highest For Meat Traceability Regulations and Requirements Motivated by Animal and Human Health in Domestic Market



Uruguay's Traceability Program Includes Certified Natural Meat Program Based on Food Safety, Traceability, Animal Welfare, and Environmental Sustainability

Use certification program based on USDA standards

Voluntary and links product with country of origin to establish Uruguayan beef as brand identity based on a ***number of claims*** made for animals marketed under the program

The country brand is "Uruguay Certified Natural Beef" and the label is shown in Figure beside.

Financial Incentives for Beef and Leather when Supply Chains Long and Complex

Financial Incentives like Impact Credits, Offtake Agreements, Loans & Grants can Bypass Physical Supply Chain when Brands have Little Direct Leverage with Farmers and Slaughter Houses to Demand Traceability

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Deforestation-free* Backgrounder Farms

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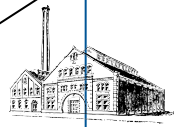
Feedlot

Certified "Punto Verde" Slaughterhouse



Secondary Processing

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Stakeholder Input (To Date)

Received

- MINAgri/ Undersecretary
- MINENV/ REDD+
- PROAmazonia
- Municipal Slaughterhouses
- Charolais Association
- Agrocalidad
- Rastro Quito (Scheduled for Aug. 6)

Potential Conversations

- **UNDP Country Office**
- **Consumer**
- **Retail** (Large Supermarket / Small Supermarket Carnicerias)
- Input Suppliers
- Agropesa?
- Foodservice?

Defining Our Pilot: Objectives

- Demonstrate an innovative idea to boost the productivity and sustainability of the livestock sector in Ecuador [UNDP Cultivate]
- Tell a powerful story of how our solution can help change things for the better
- Gain stakeholder support to launch a real pilot project in the region
- Test the viability of a concept which has the potential to scale and make real change
- Create a pathway for “farm-to-fork” traceability in Ecuador
- Help build a market around high quality, sustainably produced livestock products
- Learn what does / doesn’t work about our solution to inform plans to scale

We want something **impactful**, **innovative**, and **inspirational** to build support for the idea. Full end-to-end traceability is the longer term goal, but we need to **find a good place to get started** that we can learn and build off as a trial.

Options Development--Design Considerations

1. What industry goals do we want to prioritize?
2. How do we think we can achieve these with traceability?
3. Where do we think is a good place to start (which flows through the market)?
4. What claims do we want to make about the products being traced?

*A few people have mentioned “start at both ends” (producer and consumer) -- we need to tap into both those elements to create a market

An example “pilot”...

Create incentive payments and a premium market around certified beef for local markets. Proof of sale / certification **generates credits** producers can spend on **livestock inputs**.

Fund is set up to encourage improvements to livestock sector. This could be from a government incentive program, climate financing, industry impact credits, or from multiple sources.

1. REGISTRATION

Producers who are part of the pilot enroll in qualified “certification” programs via app or field organization

2. FIELD PROGRAMS ISSUE CERTIFICATIONS

Field programs issue certifications to producers upon review (e.g. Charolais, Organic, Deforestation Free, Region, etc...)

“Per Head” price incentive calculated based on **productivity** of ranch / producer organization and the certifications attained.

Linked to “digital identity” (producer registration in Agrocalidad system)

Regular livestock market activities then happen using existing Agrocalidad toolsets (“Phase 1” system, Cadastres, E-Mobilization guide, etc...)

An example “pilot”...

Create incentive payments and a premium market around certified beef for local markets. Proof of sale / certification **generates credits** producers can use on **livestock inputs**.

3. PILOT SLAUGHTER CENTER(S)

Equipped with smartphones that can ready RFID ear tags, cattle ear tags are **scanned** once accepted for processing.

- If a qualifying certification is found, **a digital credit is generated** (per head of cattle)
- **Batch / lot / differentiation** is recorded. Cattle are segregated for processing for their intended market as happens today.

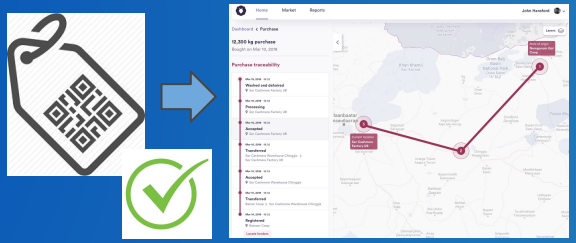
4. MEAT TAGGING

Rough cuts of meat are tagged with an identifier (carcass tag + barcode), creating a “data passport” for the meat

- Required inspection information can also be attached at this point for quality assurance
- Transactions are recorded and stored in a digital system (feeds into better municipal record keeping?)

5. SALE OF MEAT (e.g Butcher, Retailer)

Purchaser receives, reviews and “accepts” the meat order and ownership of the digital passport.



- The **digital credit** is released to the original producer as the sale is completed, which they can then spend on **agriculture inputs**
- The **retailer** of the meat can make a provable claim about its certifications and origin to end consumers (e.g. Charolais, Organic)
- Tag can be displayed to **consumers** for information + verification, creating a brand around the markings

How the example pilot links to impact / goals...

1. What industry goals do we want to prioritize?	2. How do we think we can achieve these with traceability?	3. Where do we think is a good place to start?	4. What claims do we want to make about the products being traced?
- **Improve sustainability** (through incentives tied to certifications) - **Improve productivity** (through tying the value of the incentive to land productivity) - **Improve demand** (through differentiation and provable product claims) *First step towards export markets by aligning with recognized certifications	- Leverage existing ear tags and Agrocalidad producer registrations - Leverage smartphones capable of reading RFID tags to record information digitally at slaughterhouses - Use carcass tags and QR codes to better label meat and data / claims being made about it	- An existing certification partner willing to participate (e.g. Charolais) - Regional slaughterhouses who wish to digitize digitize records (i.e. track transactions in a system more advanced than Excel) - "Rough cut" local markets in regions with short supply chains (butcher shops? restaurants?) *Allow "both ends" of the value chain to benefit in a simple flow first, creating a market	- Charolais (via program certification) - **Deforestation free** (via geospatial data? ProAmazonia program?) - Region of origin - **Sustainability score?** - Etc… *Need to confirm what consumers and retailers care about

Next Steps

1. What industry goals do we want to prioritize?
2. How do we think we can achieve these with traceability?
3. Where do we think is a good place to start (which flows through the market)?
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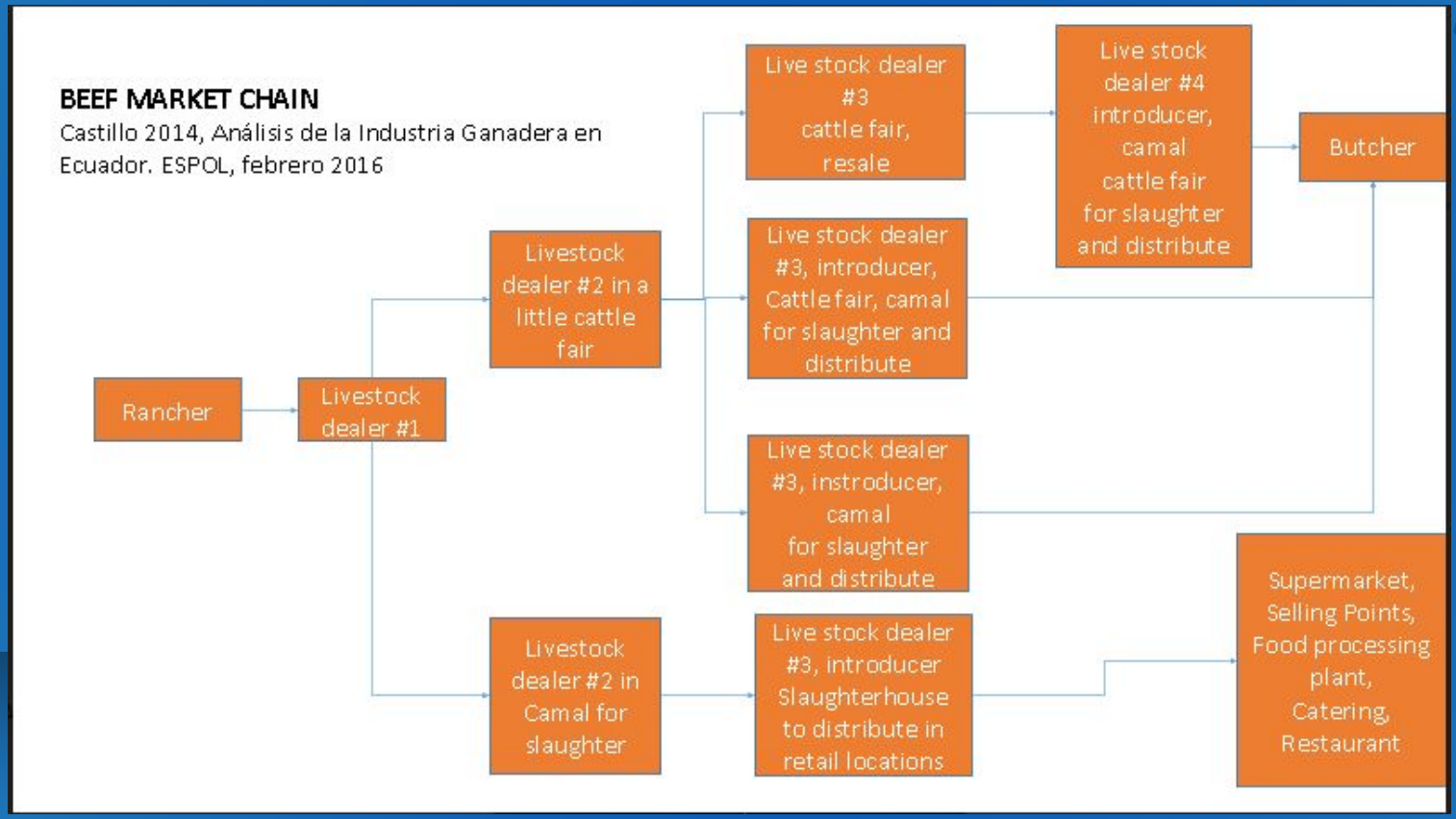
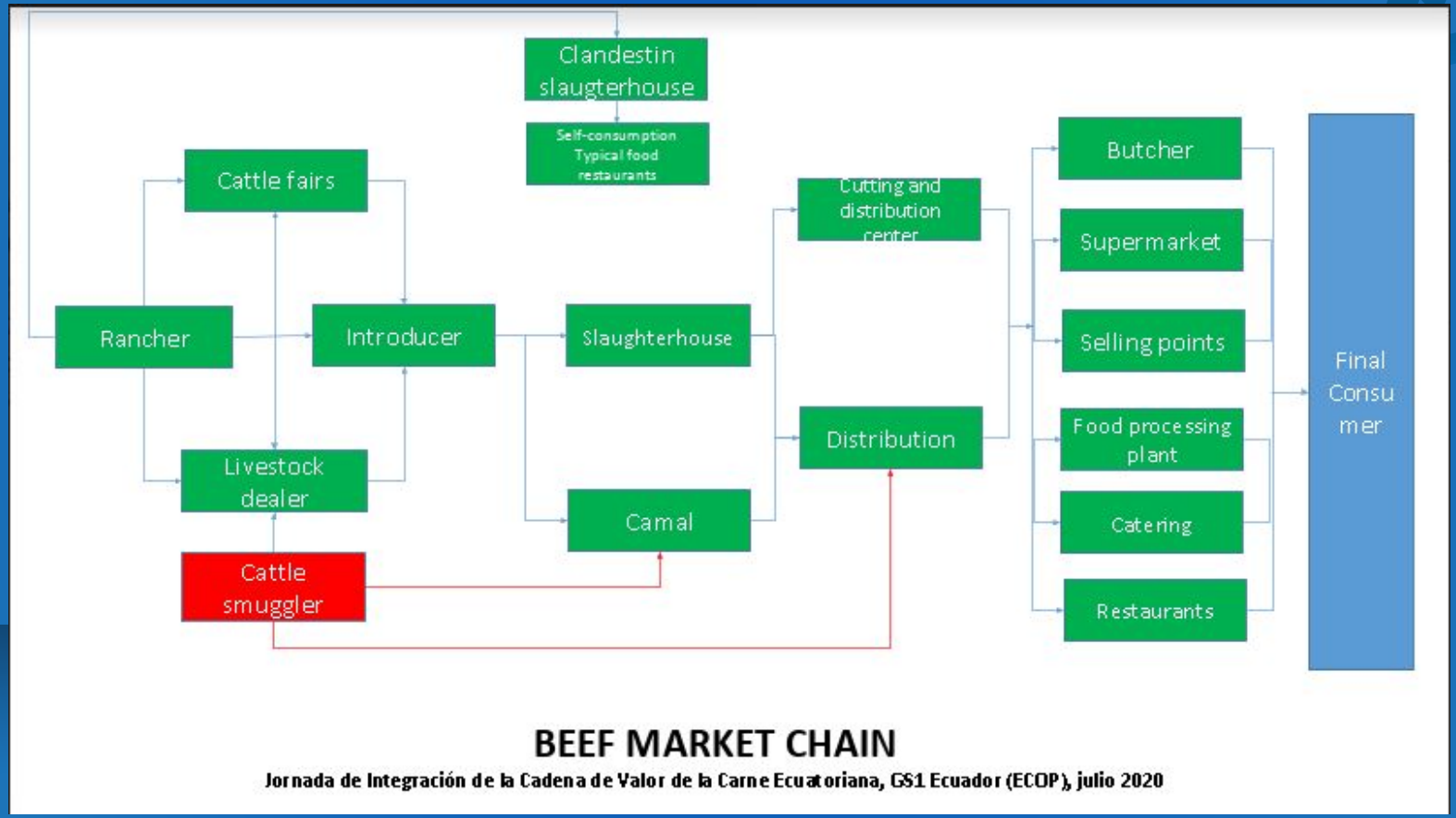
Appendix

Paths into slaughterhouse...



Paths out of slaughterhouse...



BEEF MARKET CHAIN

Jornada de Integración de la Cadena de Valor de la Carne Ecuatoriana, GS1 Ecuador (ECOP), julio 2020

Options Development--Considerations / Constraints

1. Solution must be calibrated to meet highest priorities
2. Design for current and future needs
3. Traceability only as strong as its weakest link
4. Agile development, building for portions of the supply chain at a time, mitigates risk
5. Integration with Phase One an important design consideration
6. Expectations need to be managed throughout the process
7. Costs and funding structure are uncertain

Pilot Example (how things fit together)...