



Food and Agriculture Organization
of the United Nations



LITs in Eastern Africa as well as Botswana

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Working for  #ZeroHunger



Background: Role of livestock in Eastern Africa

- livestock products make an important contribution to **food security**: counteract stunting and prevailing micronutrient deficiency
- livestock provides **economic stability** to the farm or household, acting as a cash buffer (small livestock) and as capital reserve (large animals)
- furthering income growth and poverty reduction, the livestock sector is crucial to overall development efforts
- supplies very substantial numbers of livestock to domestic, regional and international markets and makes crucial – but often **undervalued** – contributions to national and regional economies
- when the agricultural sector performs well, the entire economy performs well, with the converse equally true





Importance of livestock sector in Eastern Africa

Over 50 percent of Africa's livestock is located in the Eastern Africa region.

Ethiopia has the largest and Sudan the second largest number of livestock in Africa

South Sudan's livestock population is estimated to have an asset value of 2.2 billion dollars — the highest per capita holding in Africa

Kenya has one of the largest and most sophisticated dairy industries in Africa with over 5 Billion liters of milk produced per year



Livestock: numbers, GDP and % of population

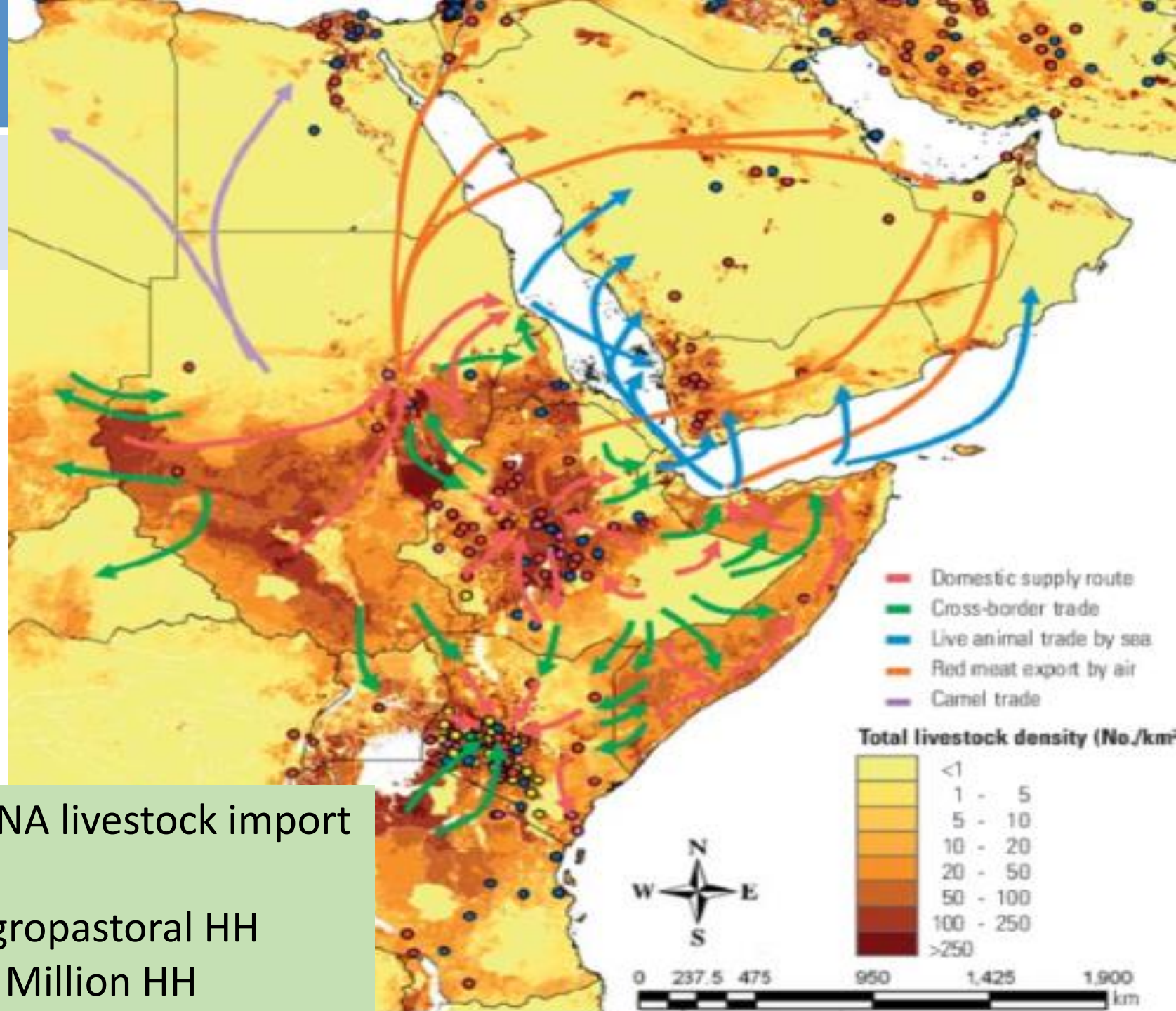
	camel	cattle	goat	sheep	pig	chicken	mio TLU	livestock GDP /total GDP	% of population for which livestock is main source of livelihood
Djibouti	0.1	0.3	0.5	0.5	nn	nn	1	3%	33%
Eritrea	0.4	2.1	18.0	2.4	nn	1.4	6	10%	35%
Ethiopia	1.2	61.0	31.0	32.0	0.0	59.5	79	17%	53%
Kenya	3.3	18.3	24.7	18.8	0.6	48.1	38	14%	63%
Somalia	7.2	4.8	11.5	11.0	0.0	3.6	24	54%	65%
South Sudan	nn	11.8	13.6	17.8	nn	15.0	27	25%	62%
Sudan	4.9	30.7	31.4	40.5	nn	48.3	71	23%	59%
Uganda	nn	15.4	15.7	2.1	2.6	35.7	15	8%	58%
							261	plus 8-10% processing marketing fertilizer, traction	



Importance of livestock trade in Eastern Africa

since 1990 grown from a minor informal activity to a dynamic enterprise

50-70% export from Somalia depends on informal trade with neighboring countries (Ethiopia



2007 → 2019: 40% → 60% of MENA livestock import
 0.5 → 10 Million live animals
 80% sourced from pastoral and agropastoral HH
 Livestock export trade supports 3 Million HH



Key drivers of change Livestock sector (Eastern) Africa

Population growth

2020 → 2030 → 2050
1,34 → 1,69 → 2,49
26% → 85%

Urbanization

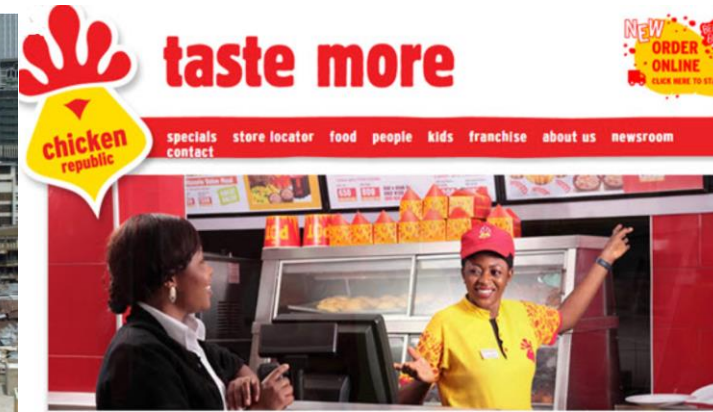
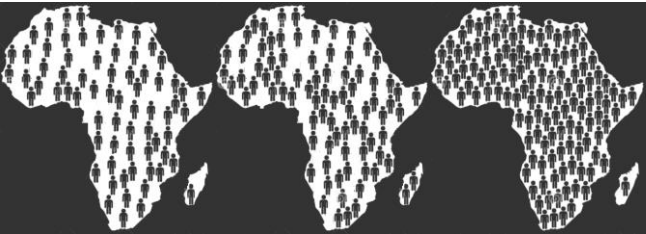
2020 → 2050
0,6 → 1,34
43% → 54%

Economic growth

2020 → 2030
22% → 43% MC/UC
Extreme Poverty 32% → 25%

Globalization

More movement
+ trade in livestock
+ livestock products
+ inputs
AfCFTA



- ➔ Continuous rapid increase in demand for animal-source foods
- ➔ Increased demand for more processed products (faster preparation); relatively more poultry/less beef
- ➔ Increased demand for more food safety during last decade following divers food safety incidents (objective incident component) and public health concern (subjective concern component) // market shocks
- ➔ Increased risk for disease transmission (between livestock, to humans and from wildlife to livestock)



Importance of LITS (livestock identification and traceability systems) in Eastern Africa

Was recognized in order to:

- Improve data on production parameters for animal breeding and improve productivity
- Improve disease surveillance and limit TADs (important transhumance context)
- Improve food safety (if identification initiatives are linked to traceability) ... from farms to fork approach
- Facilitate trade (high food safety standards in Middle East; opening of new markets)
- Reduce cattle raiding especially in conflict areas / South Sudan





Somalia

- 8 main Livestock Quarantine Stations
- in different ports including Mogadishu,
- all are established by the private sector
- also export of chilled meat from small ruminants,
- no LITS in Somalia only traditional identifications
- unclear origin entails repercussions for several countries in case of disease/ab detection
- currently consultancy to develop national LITS strategy





South Sudan

Pilot - a new practice with objective mainly to deter cattle raiding

Pilot on ear tagging in 2012: nearly 25,000 cattle were tagged and registered → 95% reduction in theft

Abandoned due to deteriorating security situation - 2020/2021 new pilot and 39,000 animals tagged

Livestock owners readily accept ear tagging especially if associated with animal health activities

Traders refuse due to X-border trade: animals from South Sudan are taxed more by local authorities

Need for combination of branding + ear tag, must be easily recognized from a distance – keep it simple!

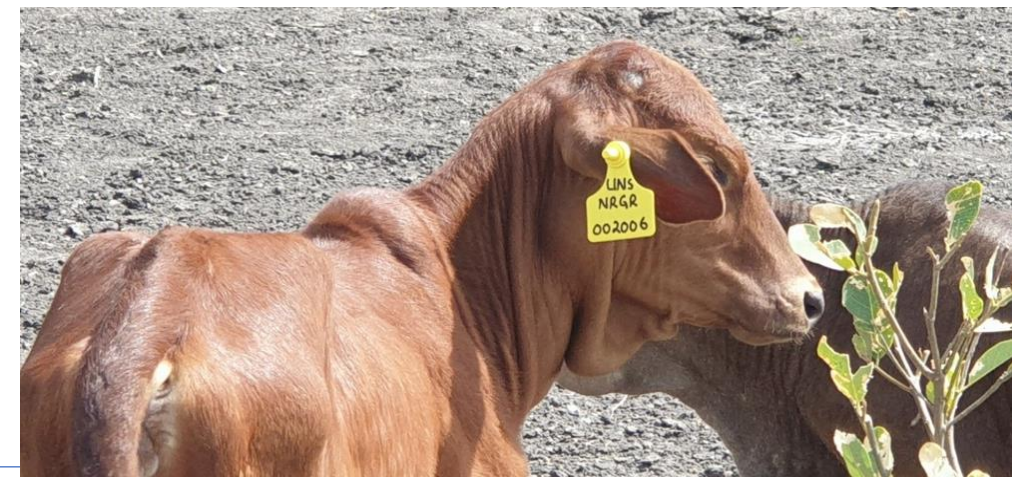
Best during vaccine campaigns, livestock shows, auction yards

Introduction of centralized ear tagging system at national level

Need legislation and database, policies to enforce animal recovery

Lack of mobile/fixed crushes so administration of ear tags difficult

More sensitization is required





Kenya

Hot iron branding official method of cattle identification through the Cattle Branding Act of 1907.

Traditionally, districts would conduct cattle branding exercises either alone or alongside vaccination.

A district, administrative unit or community mark would be imprinted on all cattle presented.

Individual livestock owners, commercial farms or ranches may apply for a brand mark (Register of Brands)

In 2009, pilot 170,000 cattle were identified using rumen RFID boluses (Economic Stimulus Program)

In 2014/2015, a trial was carried out on the use of computer microchips

In 2015, a pilot study on LITS using pre-printed ear tags (7,000 animals)

From 2017 through 2021, development of an LIT database system named RCAPTURE (more than 50,000 registered animals, another 20,000 ongoing)

Sixteen (16) digit coding structure developed aligned to international ISO standards for print or electronic coding of ear tags or microchips with country, county, sub county codes and unique 6 digit individual animal identification number.

Private beef producer preferred microchips as ear tags fell off when animals scratch or fight. Suggest this more practical also for pastoralist. But people might consume meat from uninspected animals with chips.

This can be minimized by ensuring meat inspection of all slaughtered animals



Kenya – lessons learned

1) Existing laws and regulations on animal health and identification are not sufficient to accommodate LITS implementation:

→ need review of the existing laws at the concept stage of LITS design, engage the political leaders (members of parliament) to assist in amendment of the relevant legislations

2) LITS is difficult to implement with smallholders and remoteness of the pastoralists, they have a very small profit margins and resist any increment in the cost of production

→ should be implemented in segments, starting off with medium to large dairy farms and commercial beef production farms, and target animals for the export market and high-end local markets.

3) Covid 19 pandemic caused a severe slowing down of LITS implementation activities and budget allocation at the national level from 2020 (not prioritized)

→ need to lobby for understanding the impact of LITS implementation on post Covid economic recovery especially due to the potential of LITS to raise meat and livestock export revenues, and possible usefulness to prevent future pandemics if food-born





Ethiopia

- ETLITS Twin Ear Tags – mainly at feedlots
- Sequentially numbered (distance readable)
- Twin ear tags costs 0.7USD/animal only
- 9000 identified animals (8/2020-5/2021). 4000 exported, 5000 tagged in lots
- Database Startup (Geo-coding and System)
- Capacity Building (Trainings and Equipment) and Awareness Creation





Ethiopia

Establishments registration into the system: 15 feedlots (pre-quarantines) geo-coding/geo-referencing

System designed to encode data from potential feedlots

Data entry is through quarantine offices

Started animal, animal event and related data registration for animals in feedlots

+ Add Manage Edit Controls Go to Yilkal kebede Sign Out

Dashboard **AIT** Reports GIS

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
 MINISTRY OF AGRICULTURE
 Animal Identification and Traceability System

ATS ATS DETAIL

Establishment

1059

Name	PIC
Adama Livestock Exp	00001059

Register Stakeholders ▶

Feedlot, Quarantine ▶

Regional Quarantine Office ▶

ETLITS Unit ▶

ID Device Management ▶

Documents ▶

Animal Tracing ▶

Miscellaneous ▶

View Documents

EID Document ID Title

EID	Document ID	Title	Date of issue	Current status	Valid from	Valid to
00001001	RED-00001073	Receipt ID Devices	5/27/21	Issued	5/27/21	5/27/21
00001001	RED-00001072	Receipt ID Devices	5/27/21	Issued	5/27/21	5/27/21
00001001	RED-00001058	Receipt ID Devices	5/20/21	Issued	5/20/21	5/20/21
00001001	RED-00001057	Receipt ID Devices	5/20/21	Issued	5/20/21	5/20/21
00001001	RED-00001056	Receipt ID Devices	5/20/21	Issued	5/20/21	5/20/21
00001001	RED-00001055	Receipt ID Devices	4/29/21	Issued	4/29/21	4/29/21
00001001	RED-00001053	Receipt ID Devices	4/28/21	Issued	4/28/21	4/28/21
00001001	RED-00001049	Receipt ID Devices	7/19/20	Issued	7/19/20	7/19/20
00001001	RED-00001048	Receipt ID Devices	3/4/20	Issued	3/4/20	3/4/20
00001001	RED-00001047	Receipt ID Devices	3/4/20	Issued	3/4/20	3/4/20



Ethiopia – challenges

1) Lack of legal framework

→ currently revised (MTF/ETH/098/STF: improve SPS measures for export):

determine Competent Authority responsible for approval of identifiers, and overseeing the establishment, operation and management including monitoring national performance standards

designate a System Administrator as administrator and manager of the animal registration data base.

detail the Establishment of the central computer database

Define which holdings to be registered, which animals to be identified (and how)

2) Technical (IT and non-IT) capacity of stakeholders (private and government experts) → trainings

3) Willingness of private stakeholders (perception and attitude) → awareness raising

4) Illegal trade routs → regional approach

Way forward: Expansion to other production areas (national roll-out)

Harmonization and integration with other systems (ADNIS, LMIS...)

Advocacy and market linkage

Ensuring sustainability (PPP)



IGAD region lessons learned, harmonization efforts and way forward

The 7th Regional Animal Identification and Traceability (LITS) and Animal Health Certification (AHC) Coordination virtual Meeting, May 31, 2021 (IGAD/FAO-SFE)

- MS to finalize development of legal frameworks aligned to **IGAD guidelines for LITS** roll out
- MS should lobby and advocate for enactment of or fast tracking of national legal frameworks to legalize implementation of LITS activities
- MS should design LITS devices at country levels that adopt ISO coding (three-digit country code and 12-digit national identification code) while ensuring interoperability and communication with livestock movement at national and regional levels
- MS should undertake awareness creation (adapt the existing LITs awareness materials)
- MS should support training on LITS for technical experts and end users (roll out the regional training).
- MS should create PPP and incentivize the private sector to invest in LITS



Example from Southern Africa: Botswana

One of the world's fastest-growing economies its second-biggest export is beef.

Ninth largest beef exporter to the European Union in 2019 (since 1975)

95% of Botswana's beef production is exported, most to EU - leather to South Africa

Was struggling to comply with trade regulations from the EU that calls for it to recording the history of cattle and digitally store the information (after FMD in 2010)

To booster consumer confidence, Botswana established itself as a leader in LITS and complies with International Committee for Animal Recording (ICAR).

2001-2012 LITS RFID reticular bolus (recyclable; manual and electric permits)

2011/12 Botswana Meat Commission (BMC) temporarily suspended export to review and restructure existing systems

2012 onwards: individual animal identification with combo electronic RFID and analog; electronic permits and webbased

State-owned BMC sole entity licensed to export beef, to privatize



Botswana

Traceability components (Movement, Ownership, Animal health, Slaughter, Bolus recycle history, Production areas (farm or crush))

CHALLENGES

Nearly entirely dependent on government funding ... sustainability??

Resource demanding

Bolus cattle no being visually identifiable

Bolus recycling associated problems

Prolonged updating of the central database (CDB) with field data

System designed to cover all livestock but only covered cattle



Botswana

Botswana Animal Information and Traceability System (BAITS)

Replacement of bolus with combo ear tags (electronic and analogue pair)

Web based

- Establish an accessible farmer centric animal
- Cost recovery through sales of ear tags and applicators
- Farmers bear the cost of ear tag application to some extend data entry costs

To improve animal and public health

To provide the beef Industry with objective performance information to improve the genetic and economic efficiency of beef production

- Establishment of an Animal Production Advisory Board
- Establishment of the office of the Registrar of Livestock Improvement
- Planned establishment of national livestock breeders societies (Stud Book/herd book) - interest by some stud breeders to register (e.g Brahman, Boergoat)



Botswana

I. On-Farm Evaluation (Stage 1): Calf and cow weight recorded at weaning

Parameters evaluated: Cow efficiency at birth and weaning Calving ease Age at first calving, calving interval
Calf survival up to weaning

II. On-Station Evaluation (Central Performance Testing Centre) (Stage 2)

Post weaning growth rate; Feed Conversion ratio (Feed efficiency); Body length and shoulder height (Beefing capacity); Scrotal Circumference (breeding potential)

III. Carcass evaluation

Carcass weight, Dressing, Fat %, Muscle/Bone ratio, Meat tenderness, Marbling effect, Lean color

Main Challenges:

Lack suitable structures at farm level (lack of handling facilities, weighing scales)

Poor animal husbandry practices (poor recording keeping, poor animal identification)

Limited understanding of the benefits of performance recording, little interest

Inadequate capacity (human resources, transport and funds to run the scheme)

Database to manage the data



Botswana

Legal & Institutional Framework revised/detailed

All cattle must be identified with ear tags within three months of birth.

Ear tags used for local animals are yellow and the ones for imported animals are red.

The tagging system makes it possible to trace cattle from birth to slaughter.

Cattle tagging involves the farmer buying the combo tags (digital and analogue) tagging his animals and submitting data to the data base.

The farmer also needs to request movement permits and also report departures; arrivals and mortalities. Tag replacement need to be reported and is the responsibility of the farmer.

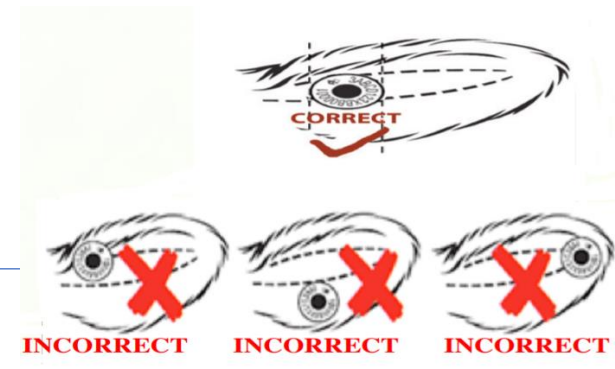
Registration: application fee as set by DVS applies and the keeper card will be issued within 7 working day; is used for various transactions in BAITS and DVS in general.

Register as brand possible (5USD)

Register a holding (farm, feedlot...)

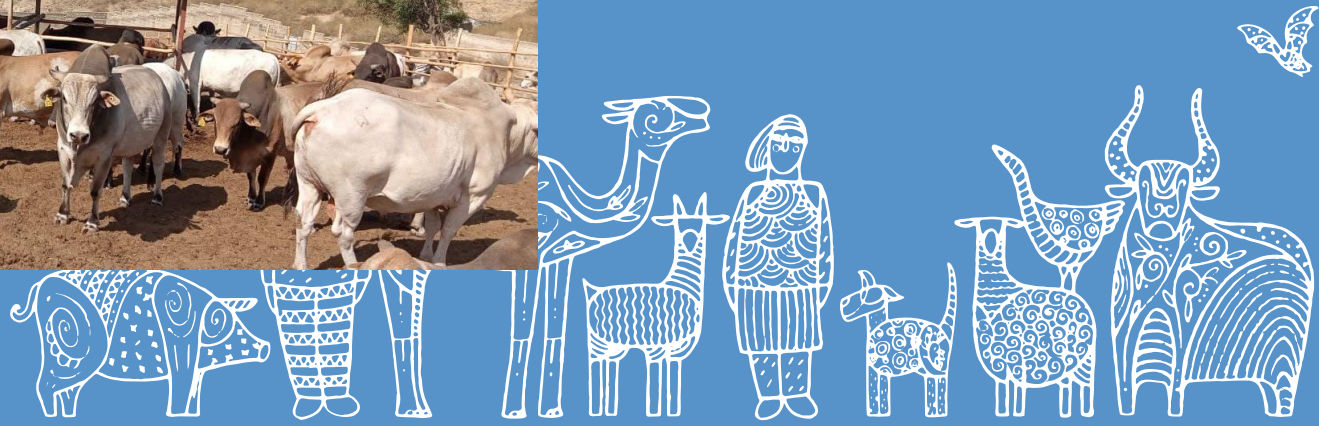
Movement/export etc all forms online,

But can use digitally or in paper





you



Protecting people, animals, and the environment everyday

