BOTSWANA ANIMAL IDENTIFICATION TRACEABILITY SYSTEM

PRESENTED AT THE AIR SYMPOSIUM IN PRETORIA
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The country has a long history of LIT

- Traditionally identification
  - Ear notching which is a group identification e.g. family or clan
  - Branding which was introduced in 1907. Links individual farmer to his livestock
  - Zonal branding (1964) identifies cattle in a particular geographical zone
**EAR NOTCHING**

- Group (family line)
- Manual permits

**BRANDING**

- Herd (group belonging to a farmer) (1907)
- Territory/zonal identification (1964)
- Manual permits

**LITS (2001 to 2012)**

- Individual cattle identification with RFID reticular bolus
- DVS oriented
- Review 2009/10
- Manual and electronic permits

**Transition from LITS to BAITS (2012/13)**

- Linkage of bolus to analogue ear tag
- DVS oriented
- Electronic permits

**2012/13 and beyond BAITS**

- Individual animal identification with combo (electronic/RIDF and analogue)
- Farmer oriented
- Electronic permits
- Web based
LITS

- Livestock identification and traceability system (LITS)
  - Introduced in 2001 to facilitate
    - Trade following changes in the EU import conditions
    - Animal and public health controls
    - Anticipated advantage of reducing stock theft
  - Identification
    - RFID (reticular bolus)
    - Recyclable bolus
LTS

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

- Entirely dependent on government … sustainability??
- Limited role by other stakeholders
- Resource demanding
- Fully funded by Government
- Bolus cattle no being visually identifiable
- Bolus recycling associated problems
- Prolonged updating of the central database (CDB) with field data
CHALLENGES cont`

- System designed to cover all livestock but currently only covers cattle
- Statutory instruments under the Diseases of Animal Act
LITS REVIEW

- Reviewed in 2009 -2011 including benchmarking
- Review recommended
  - Stakeholders to play an active role to remove dependency on government
  - Replacement of bolus with combo ear tags
  - Bolus ear tag transition (electronic and analogue pair)
  - Web based
  - Have provisions for interfacing
REVISED LITS - BAITS

- Botswana Animal Information and Traceability System (BAITS)
- BAITS objective
  - Establish an accessible farmer centric animal information and traceability system as a tool to facilitate animal and public health controls
- Cost recovery through sales of ear tags and applicators
- Farmers bear the cost of ear tag application to some extend data entry costs
### BAITs Deliverables

**Primary objective** - Establish an accessible farmer centric animal information and traceability system as tool to facilitate animal and public health controls

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<tr>
<th>Role players</th>
<th>Deliverables</th>
<th>Activities</th>
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| **Farmer**   | Primary      | i. Buy Combo ear tag  
               | None regulatory  | ii. Application of combo ear tags  
               |             | iii. On-line registration of ear-tagged cattle or manual submission to DVS or certified tagging and data entry agents  
               |             | iv. Undertake transactions either on-line or manual submission to DVS or certified tagging and data entry agents (TADEA)  
               |             | v. Updating keeper ID information details on line or manual mission  
               |             | vi. Query and retrieve reports on-line  
               |             | vii. Animal movement request and approval subject to animal and public health restrictions  
               |             | viii. Notification of cattle deaths  |
| **Other Stakeholder participation** | Facilitator | i. Certification of tagging and data input agents  
|             |             | ii. Established partnership with stakeholder i.e. internet providers  |
| **BMC/ Other slaughter facilities** | None regulatory | i. Arrive and terminate slaughtered cattle  
|             |             | ii. Query and retrieve reports on-line  |
| **Department of Veterinary Services** | Official regulation | i. Capturing of animal and public health data  
|             |             | ii. Imposition of animal and public health controls  
|             |             | iii. Use BAITS data to inform decision making on animal and public health programmes, strategies and policies  
|             |             | iv. Auditing on BAITS and holdings  
|             |             | v. Build capacity on BAITS (certification of tagging and data input agents, staff, keepers and others)  
|             |             | vi. Develop, review and enforce legislation  
|             |             | vii. Procure and resell ear tags  |
| **Botswana Police Service** | Law enforcement | Law enforcement  |
Background

• Scheme initiated in 2001.
• Implemented by the Department of Agric. Research in collaboration with the Department of Animal Production

Why Monitor Livestock Performance

• Limitation in purchasing good quality replacement/breeding stock
• Limitation in marketing excess stock due to lack of performance records: Few local stud breeders (Brah, Simm, Charolais, Santa Ggertrudis)
• Dependency on neighboring countries for breeding stock which is risky in the event of trans-boundary diseases outbreaks
• Globalization: which requires production of competitive products
OVERALL OBJECTIVE OF THE SCHEME:

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

Scheme Classification into 3 main stages
I. On-Farm Evaluation (Stage 1)

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

III. Carcass evaluation
On-Farm Evaluation

- Carried out at the farmers' premises
- Performance data recorded by farmers under supervision of field officers from DAP
- Involves evaluation of farm/herd efficiency where
  1. Monitoring of cow productivity is done
  2. Monitoring post weaning growth of all animals in the herd is done
On-Farm Evaluation cont.

(a) MONITORING OF COW PRODUCTIVITY (for all animals in a herd)

- Individual identification of all calves born in farm imperative
- Calf and cow weights recorded at calving (within 24 hrs after parturition)
- Weaning approx. at 7 months
- Calf and cow weight recorded at weaning

Parameters evaluated

- Cow efficiency at birth and weaning
- Calving ease
- Age at first calving and calving interval
- Calf survival up to weaning
b) MONITORING OF POST WEANING GROWTH (only for young bulls, steers and heifers)

- Weight of young bulls, steers and heifers are recorded at 12 and 18 months
- Scrotal circumference of young bulls is recorded
- Age at first calving of heifers is recorded

NB: Farmers responsible for data collection
On-Station Evaluation

Goodhope Central
Bull Performance Testing Centre
On Station Evaluation cont.

- First Pilot station established at Goodhope Research ranch
- 60 bulls will be tested at a time (15 bulls per breed from one or more farmers)

PARAMETERS EVALUATED:
- Post weaning growth rate
- Feed Conversion ratio (Feed efficiency)
- Body length and shoulder height (Beefing capacity)
- Scrotal Circumference (breeding potential)
Eligibility: Guidelines

• On- Farm Evaluation:
  ➢ Anyone regardless of location
  ➢ Farmers with handling and weighing facilities
  ➢ Herd has to follow a defined breeding season

• On Station Evaluation
  ➢ Only stud breeders can enroll
  ➢ Farmers who participated in stage 1
Carcass Evaluation

- Evaluation of carcass quality of progeny of bulls tested under stages 1&2.
- 8-10 progeny of each bull will be evaluated
- Evaluation will be done at MITC abattoir in Lobatse

Traits Evaluated
- Carcass weight
- Dressing % Fat %
- Muscle/Bone ratio
- Meat tenderness
- Marbling effect
- Lean color
Legal & Institutional Framework:

Facilitating implementation of the new act (Livestock Improvement Act of 2009)

Act envisioned to drive livestock improvement in general in the country through:

- the establishment of an Animal Production Advisory Board
- the establishment of the office of the Registrar of Livestock Improvement
- the establishment of national livestock breeders societies
- Est. of Stud Book/herd book
- Development of the Regulations of the Act
Main Challenges of the Scheme

- 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
- Low farmer commitment: reliance on DAR mobile scales
- Inadequate capacity (manpower (to monitor data collection on farm), transport and funds to run the scheme)
- Database to manage the data not yet in place
- Decline in number of farmers participating
Achievements

- Interim Coordinating Committee (DAP &DAR, BCA, farmers representative) is in place
- Stakeholders awareness w/shops on the scheme and the Act being done (Farmers associations)
- Good/hope Bull Performance Testing Centre established
- Operational Guidelines of the centre developed
- 3 test runs of the Bull testing centre done using DAR animals
- Interest by some stud breeders to register (e.g Brahman, Boergoat)
- The Animal Production Advisory Board and the Registrar have been put in place
THANK YOU