



A road map for implementing a National Animal Identification System(AIS) for Sanitary Purposes Traceability in South Africa

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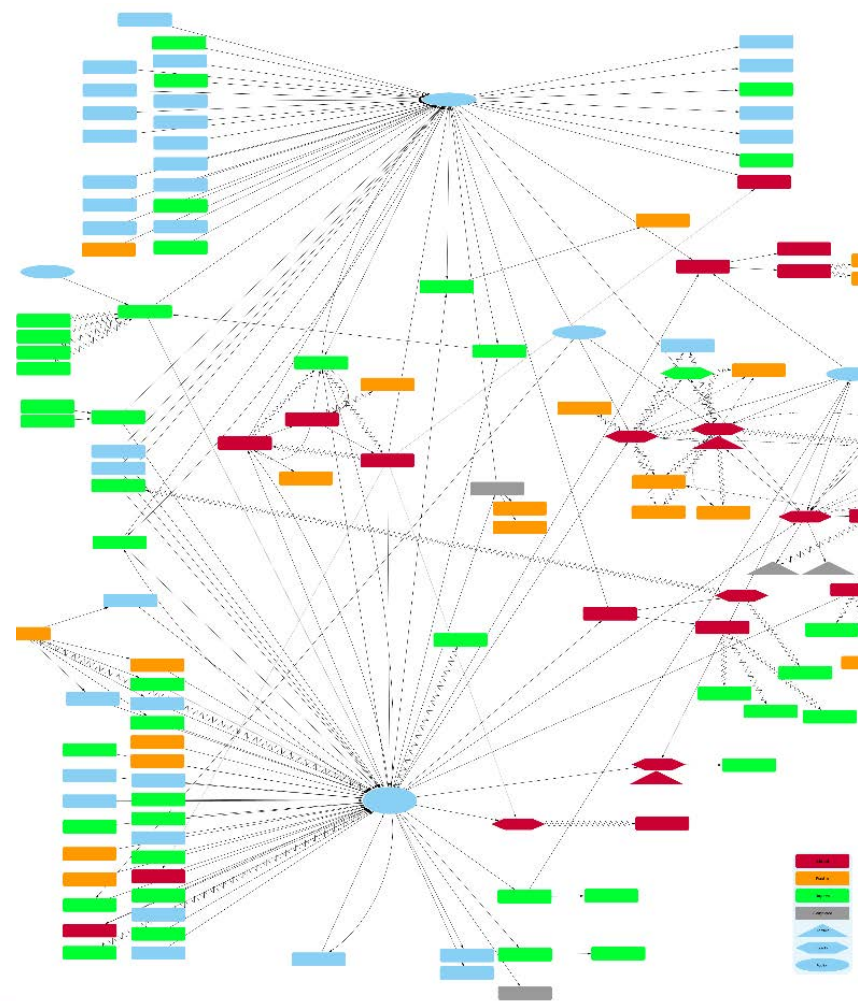
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Why the Need of Effective Traceability?

Primary: Market access difficulties due to inadequate traceability for sanitary control in South Africa:

1. Periodic outbreaks of FMD in the formerly free zone-traceability is central to the regaining of the national status;
2. Animal Health issues incl Periodic outbreak of transboundary animal diseases-Brucella, TB et al;
3. The undetermined BSE status for South Africa;
4. The use of growth stimulants at farm and feedlot level,
5. OTC sale of veterinary medicinal products (AMR and residues?)=The inadequacy of the national residue programmes
6. Compounding of medicines and their distribution



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CONTEXT IN THE DESIGN OF AIS FOR TRACEABILITY

- **Constitution of the Republic of South Africa, 1996 - Schedule 4: Functional areas of concurrent national and provincial legislative competence**
- Part A: Agriculture/Animal control and diseases/Trade
- **Constitution of the Republic of South Africa, 1996 - Schedule 5: Functional areas of exclusive provincial legislative competence**
- Part A: Abattoirs/Veterinary services, excluding regulation of the profession.
- Section 44(2)(3) of the Constitution-Parliament may intervene, by passing legislation with regard to a matter falling within a functional area listed in Schedule 5, when it is necessary
- to maintain national security/ to maintain economic unity/to maintain essential national standards;/to establish minimum standards required for the rendering of services; or to prevent unreasonable action taken by a province which is prejudicial to the interests of another province or to the country as a whole.
- Legislation with regard to a matter that is reasonably necessary for, or incidental to, the effective exercise of a power concerning any matter listed in Schedule 4 is, for all purposes, legislation with regard to a matter listed in Schedule 4.



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INTERNATIONAL CONTEXT IN THE DESIGN OF AIS FOR TRACEABILITY

- Basic elements that need to be considered by WOAHA member countries in the design and implementation of AIS to achieve animal traceability are outlined in Chapter 4.2.
- Whatever animal identification system the country adopts, it should comply with relevant WOAHA standards, including Chapters 5.10. to 5.12. for animals and animal products intended for export.
- International Health regulations
- Codex Alimentarius Commission Standards, Guidelines and Recommendations



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Farmer Responsibilities

as regards kept animals under their responsibility, be responsible for:

- the health of kept animals;
- prudent and responsible use of veterinary medicines;
- minimizing the risk of the spread of diseases;
- good animal husbandry;
- Develop and implement biosecurity measures regarding kept animals' species best on best good farming practices.



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IMPLEMENTATION APPROACH



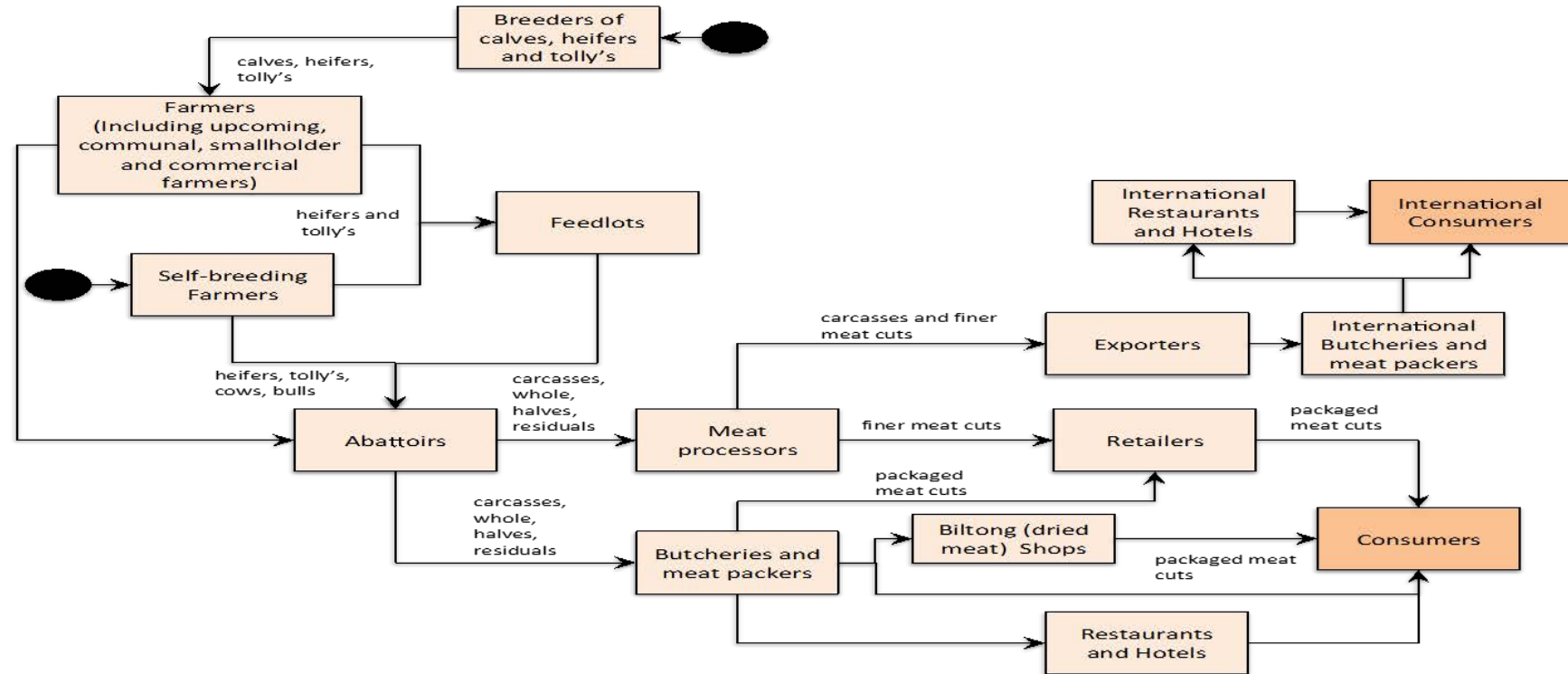
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Road Map and Action Plan: Livestock Primary production and downstream processing and distribution



Splitting of the link between Primary production and processing value chain into 2 interlinked Subprograms: [Traceability of products of animal origin- Ecos](#)
[Traceability of Live animals up to the point of slaughter- AIRT \(LITS\)](#)



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Stakeholder Consultations and Timelines on LITS for Sanitary purposes/Disease Control

No	Milestone of the LITS SA	Dates
1	Signing of the Implementation Protocol for Veterinary Services between DALRRD and all the Provincial Departments of Agriculture	<i>18 September 2008</i>
2	OIE (World Organisation for Animal Health) evaluation of the performance of veterinary services (PVS) of South Africa	<i>October 2012</i>
3	OIE Gap analysis on the performance of veterinary services (PVS) in South Africa	<i>June 2014</i>
4	Gazetting (notice number No. 1062 of 06 November 2015) for Public consultations of the Draft Veterinary Strategy and the accompanying Strategic Implementation Plans in South Africa	<i>November 2015</i>
5	Animal Disease Management Plan	<i>2015</i>
6	Approval of the Veterinary Strategy	<i>March 2016</i>
7	Legal Framework for Veterinary Strategy	<i>March 2017</i>
8	Gazetting (notice number 41440 of 13 February 2018) for Public consultations of the Draft LITS SA policy	<i>13 February 2018</i>
9	Socio-Economic Impact Assessment (SEIAs) and quality assurance certification on the LITS Policy with the Presidency	<i>26 March 2018</i>
10	Approval of the LITS SA Policy	<i>29 March 2018</i>
11	Legal Framework for Animal and Animal product Identification and Traceability	<i>March 2019</i>
12	Finalisation of the Development of the Business Plan for the Establishment & Operation of a National Livestock Identification & Traceability System for South Africa	<i>23 October 2020</i>
13	Request for Introduction of the LIRTS Bill which is an amendment/Repeal of the Animal Identification Act by Cabinet for Public Consultation	<i>Wwthdrawn ito be tabled at Cabinet for public consultation n June 2022 by the Branch</i>
14	Request for reprogramming by the Branch.	<i>June 2022-date</i>

Road Map: Why a reprogramming?

- Re-conduct a legal analysis (legal mapping and legal assessment) and review identified gaps across government levels and revise/redirect the necessary legal instruments for AIS implementation.
- Expand and broaden the scope of animal identification for traceability beyond sanitary purposes
- Rationale: Level 5 Target under Sanitary animal production practices
 - Periodic inspection, assessment and monitoring of practices in animal breeding and production of animal products are conducted in the main animal production value chains and the compliance with national guidance is constantly verified.
- Technical questions:
 - c. What is known about the complete value chain (i.e., a full range of activities that are required to bring a product or service from its conception to the final consumers)? – Public good vs private good



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Road Map: Anticipation from the Reprogramming

- **Outstanding Legislative matters** –resolved and ensure that the necessary legal instruments for AIS implementation are available.
- The AAMP interventions for livestock value chains highlights the need to:
 - ❖ **Implement the outstanding aspects of the South African Veterinary Strategy (SAVS) 2016-2026.**
 - ❖ **Implement the SAVS LITS system as part of a public-private partnership to manage animal health and movement**
 - ❖ **Ensure alignment and coordination at 3 spheres of government for the implementation of sectoral master plans**
- **Institutional setting** –governance structure and designating authorities.
- **Roles and responsibilities** – setting clearly defined roles and responsibilities based on laws.
- **Animal movement control** – re-establishing strict animal movement controls nationwide especially for high-risk movements and implementing an electronic notification system for movements and other sanitary animal events - the mainstay of any traceability system.



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Road Map: Anticipation from the Reprogramming

Funding arrangement – implementing a sustainable funding arrangement, which does not burden the state and is affordable to value chain actors.

- ✓ About R900m-R1.3billion is estimated for the full implementation of cattle identification for traceability over a period of 1-3 years.
- ✓ Cost drivers are resources (personnel costs for recording of sanitary events for traceability activities) and procurement of identification technology such as tags.
- The cost must be shared among the farmers, value chain actors, national and provincial government
 - **Benefit and Value Analysis**
 - ***Capitalised Costs:*** Problems occasionally arise involving extremely long analysis periods such as government analysis of permanent structures, the required maintenance can be spread over an infinite period.
 - ❖ In these cases, the analysis is called capitalised cost which is the present sum of money that would have to be set aside now at a given interest rate to provide a perpetual uniform cash flow.
 - ***Benefit-cost ratio analysis:*** This analysis technique is a variation of the equivalent value method often used in project evaluations.
 - It is based on the ratio of benefits (irrespective of the beneficiaries) to costs. An alternative is considered if the ratio equals or exceeds 1.0.



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Identification Technology: Current

- Based on the findings from LITS Business plan, the official primary LITS SA cattle tag approved by LITS-SA recommended to be:
 - a obligatory two-piece low frequency RFID (HDX or FDX) single-use **(EID/Visual combination ear tag)**
- 75% of the cattle marketed via feedlots-The official secondary LITS SA cattle tag may also be a High Frequency radio tag but must be synchronised/Aligned with the primary RFID tag.
- ❖ **Need of finalisation by the LITS Committee on criteria for the inclusion of animals tagged with acceptable tags into the official information system**



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Identification Technology: Future

- Promote entrepreneurship, innovation and investment in agro-technology.
- Ear tags that guarantees the continuous digital connection between the tag and the monitoring farmer/database via satellite and unaffected by geographic limitations.
- ❖ *Betavolt/PhosEnergy-the race to build pitching a coin-sized a nuclear battery device it says can keep producing a charge for 50 years.*
- Cattle Identification Using Muzzle Images and Deep Learning Techniques (exicting breakthrough research work from Stellenbosch University and Fort Hare)



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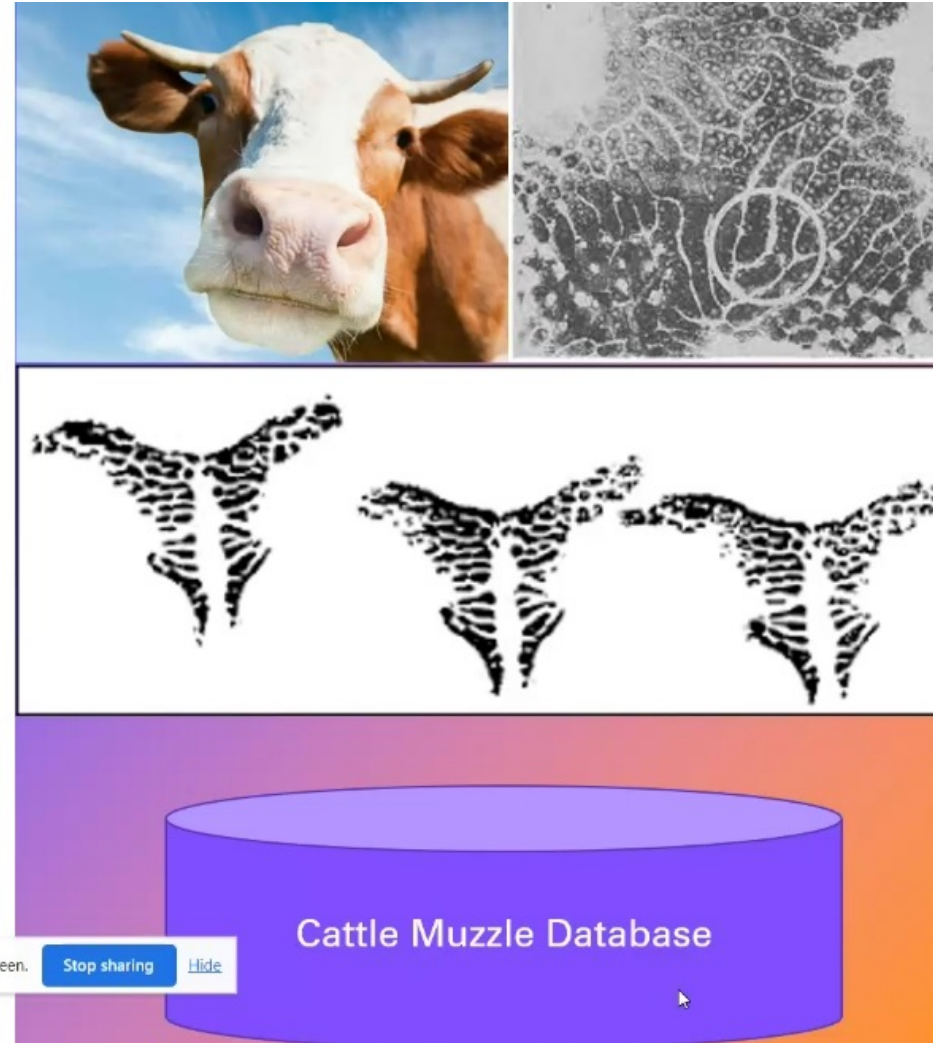


Identification Technology: Future

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System Summary

1. Capture cattle muzzle photographs
2. Process the photographs to extract distinct features
3. Develop an algorithm capable of reading these distinct features
4. Classify the content of each print
5. Add to a central cattle muzzle database



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Use Case Flow – Implemented

Count	Use Case No	Description
1	UC1	Registration of Animal Owner
2	UC2	Registration of establishments
3	UC3	Registration of Tagged Animal
4	UC4	Retagging of Animals
5	UC9	Change of Animal Ownership
6	UC10	Reporting of Animal Key Events
7	UC11	Requesting Movement Permit
8	UC12	Issuing of a Movement Permit
9	UC13	Notification of removal of animals from an establishment
10	UC14	Notification of arrival of animals at an establishment

Count	Use Case No	Description
11	UC15	Recording of Animal Vaccination
12	UC16	General Inspections
13	UC18	Recording of animal laboratory test requests
14	UC19	Recording of animal laboratory test results
15	UC20	Management of LIT reference Data
16	UC21	Reporting



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What needs to be done in Phase 2

2.2.14	Updating of Documentation (User Manuals)
2.3	Development of interfaces to external systems (e.g., eCert, Abattoirs, Feedlots, Auctions)
2.3.1	eCert interfaces: RSA ID and company reg. number verifications
2.3.2	API Interfaces (Abattoir, Feedlot, Auction, Border systems, eCos)
2.3.3	Updating of API Documentations (User Manuals)
2.4	Traceability of Vet Medicine
2.4.1	Registration of medicines and their suppliers
2.4.2	Traceability of Vet Medicine Usage
2.4.3	Generation of medicine notices or others
Development of an ear tag management system	
3.1	User requirements elicitation and requirements gathering
3.2	Definition of system requirements specification
3.3	Development of system architecture and design
3.4	Development and integration of the system to LITS SA
3.5	Development of Documentation (User Manuals)
User Acceptance Testing	
4.1	UAT for WP2
4.2	UAT for WP3
National Rollout and Transfer, Licensing and Finance related matters	
5.1	Training Manuals
5.2	Development of system handover process
5.3	Development of system migration plan
5.4	Develop system transfer mechanism
5.5	Preparation of service level agreement (Tiered Support)



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NEXT PHASES

- Through the collaboration of government and industry stakeholders over the past six years, components of the Livestock Identification for Traceability System (LITS) has successfully undergone testing in communal and freehold areas, including Foot and Mouth infected areas.
- These tests have demonstrated the system's potential to greatly enhance animal health, food safety and trade through effective identification and traceability measures.
- The next phase is the Official Launch of the LITS, and which will include the official opening of the Information System database for use by the farmers.
- Registration of animals on the system – as far as possible information from other commercial management tools developed in the private industry will be linked to the LITS system will follow
- SAPS-Movement control in term of the Stock Theft Act, ACT 57 of 1950 as amended



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WHERE DO FARMERS REGISTER?

- <https://lits.csir.co.za/>
 - USER NAME = email adress
 - Password
- Once you create a username and password you will be admitted
- Once admitted to the system you will need to complete the registration



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Registration as an animal owner

- Note that all form of trade is accepted = individual, company, trust etc
- Information that you will need during registration
 - Identification document or Company Registration or Trust documentation
 - Your brandmark certificate = on your current brandmark certificate there is a reference number that you will need to complete
 - Your physical address
 - GPS coordinates of your establishment – farm
 - Your surveyor general registration number e.g. IJ284/r
 - The information of the current veterinarian you use – if you do use one. Name, Email, physical address



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Confirmation

- Once you confirm your registration, it will go to a administrators/manager per province who will validate you information
- In the case of smallholders and communal farmers this is done by your provincial veterinarian's services
- Abattoirs feedlots and agents will be validated by per province by the responsible official



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Acknowledgement

- Enterprises University of Pretoria (Pty) Ltd for the development of the BUSINESS PLAN on:
 - Establishment & Operation of a National Livestock Identification for Traceability System for South Africa
- The Department of Science and Technology through the Technology Innovation Agency (TIA) who sponsored DALRRD on the preparation of the Business Plan document for the Establishment & Operation of a National Livestock Identification & Traceability System for South Africa.
- The European Union for funding the development of the LITS Information System database through the **Ecosystem Development for Small Enterprise (EDSE) programme**.
- The European Union for the Establishment & Operation of a LITS National Livestock Identification for Traceability System for South Africa through funding and technical assistance under the **SADC-EPA Support Programme**.
- DALRRD and Provincial Departments of Agriculture for Implementation of LITS and funding of the field activities
- **LITS Committee** with include 50 representation from the Organized Livestock Industry and other industry stakeholders for collaboration with government with advisory services on Establishment & Operationalization of LITS.



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