

# **Proposal for an Enhanced National Animal Identification and Traceability System**

**(with an initial focus on Cattle and Deer)**

## **REPORT FOR CONSULTATION**

**Prepared by the Animal Identification and Traceability Working  
Group**

**July 2005**

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## 1.0 INTRODUCTION

This consultation document sets out the findings and recommendations of the Animal Identification and Traceability Working Group (AITWG). Established in August 2004 the AITWG has involved participants from the livestock industry, the Ministry of Agriculture and Forestry (MAF) and the New Zealand Food Safety Authority (NZFSA) discussing the current and future needs of the New Zealand livestock industries for animal identification and traceability.

The Boards of the following key industry groups have reviewed and support further discussion of the broad principles and framework outlined in this report for consultation:

- Dairy InSight
- Deer Industry New Zealand
- Federated Farmers of New Zealand Limited
- Fonterra Co-operative Group Ltd
- Meat & Wool New Zealand
- Meat Industry Association of New Zealand (Inc)

### 1.1 Purpose of the Report

This is an industry discussion paper which invites submissions from all industry groups and individuals on the establishment and ongoing administration of an enhanced national framework for animal identification and traceability. While we have systems in place to trace forward product from time of slaughter, our systems for quickly tracing back animals to their place of birth are primarily paper-based and may be incomplete.

Introducing a new national framework for livestock animal identification will require thinking through a number of key issues, including:

1. What the underlying principles are for establishment of an appropriate framework which meets New Zealand's future needs.
2. What sort of information should be collected (including voluntary information and mandated core registry information).
3. When individual animal identification should be required and when identification to a herd level may be sufficient.
4. Whether actual identification devices should be mandated, along with formal adoption of standards.
5. How the animal identification system, particularly the core registry data, should be administered and governed.
6. What level of investment participants will need to make at national and on-farm levels.

This report deals with some of the major questions raised. It is not, however, meant to be all-encompassing, covering every aspect of animal identification. The Animal Identification and Traceability Working Group recognises that there are some areas which require special expertise and experience. This report is designed to cover only the major framework requirements.

The AITWG proposes that existing identification systems be enhanced and that electronic tracing of animals be implemented using a centralised register of core data which approved users can access.

The concept proposed is that the framework will be established initially for the cattle and deer sectors, with first a voluntary uptake leading to mandatory adoption of a modified national identification system in October 2007. In developing the new infrastructure for the cattle and deer sectors the aim is for the system to be open and flexible enough that other livestock sectors are also able to set up similar schemes under the same framework at a time and pace appropriate for their needs.

The framework will focus on livestock animals, on a species by species basis where agreed by industry, for:

- Permanent animal identification;
- Collection of information on premises, ownership, herds and animals;
- Storing and management of this key information (called the “core registry”) to enable tracing of animals, including their movements from place to place and, where appropriate, record key events in their life; and
- Use of that information by approved organisations for specified purposes.

## **1.2 Outline of the Report**

This report has four sections:

1. **Introduction** – this outlines the purpose of this paper and how submissions can be prepared.
2. **Background** – this sets out the reasons why animal identification and traceability is increasingly important as a tool for on-farm animal management, market access and biosecurity. It looks at some of the overseas trends in this area and the existing New Zealand systems that are in place.
3. **Proposed national framework for animal identification and traceability** – this outlines what the AITWG suggests are the principles for such a framework, what data (the core registry) could be collected and how the national framework could be administered.
4. **Next steps** – this identifies the work ahead to establish the proposed national animal identification framework.

## **1.3 Scope of the Report**

The scope of this consultation report is limited to the following specific issues:

- Principles for animal identification and traceability
- Mandatory core registry information to be recorded
- Outline of the proposed system for cattle and deer
- Governance and administration of the proposed system
- Timeframe for initial adoption by deer and cattle sectors.

The report does not specifically cover:

- The technology behind establishing a core registry and how this would be done
- Adoption by sectors other than cattle and deer
- Allocation of funding
- Changes that may be required to legislation to achieve the proposed system
- The role of the Crown in animal identification and traceability.

If there is endorsement for adoption of a national animal identification framework these issues will be covered separately as part of the ongoing project. Any contribution by the Crown will be subject to development of approved policy.

#### **1.4 Submissions**

Included with this report is a submission form that you may wish to answer when commenting on the issues and proposals presented in this paper. An electronic version of this document and the submission form may also be found at the following websites:

<http://www.dairyinsight.co.nz>  
<http://www.fedfarm.org.nz>  
<http://www.meatandwoolnz.com>

<http://www.deernz.org>  
<http://www.fencepost.com>  
<http://www.mia.co.nz>

Submissions in a form other than this are also welcome, as are any additional or general comments. All submissions must be in writing.

Submissions on this industry discussion paper close at **5 pm Friday 30 September 2005**, and must be sent to:

Secretary  
Animal Identification and Traceability Working Group  
PO Box 121  
Wellington

Phone: 04- 474 0804  
Fax: 04- 474 0800  
Email: [bridget.peachey@meatandwoolnz.com](mailto:bridget.peachey@meatandwoolnz.com)

A summary of submissions received will be prepared.

## 2.0 BACKGROUND

The devastating impact of recent BSE (“mad cow disease”) in North America and foot and mouth disease in the United Kingdom, and increasing demands for product information by consumers, has spurred an international trend towards implementing more reliable and rigorous animal identification systems.

New Zealand currently trades on its disease-free status and maintaining this is vital both economically and socially. However, in order to safeguard the future of the industry and the economy, New Zealand needs to reassess its current animal identification regime. Current New Zealand animal identification and traceability systems for cattle and deer are based primarily on bovine tuberculosis management and dairy productivity.

There is an increasing international emphasis not only on a country’s animal health status but also on its ability, if disease does break out, to limit spread and mitigate any real and perceived food safety and animal health risks.

Should a disease outbreak occur in New Zealand an enhanced animal identification and traceability system will better:

- Limit the spread of a potential disease outbreak and minimise food safety and animal health risks
- Improve the speed of deployment of animal tracing and subsequently containment measures within New Zealand; and
- Reduce the period for which access to key markets might be denied while importing countries are assured that any disease outbreak has been managed and risks are under control.

### 2.1 *International trends in animal identification and traceability*

Cattle identification is currently the most prevalent and advanced form of animal identification systems in other countries. Mandatory domestic traceability systems are being adopted in the beef supply chain, at different rates by different trading partners.

Four patterns of adoption have been identified for cattle identification and traceability systems in the major beef producing and trading countries:

1. Adoption of mandatory domestic systems in response to consumer concerns (EU, Japan and Korea)
2. Industry-managed mandatory domestic programs for animal identification (Canada)
3. Imposition of mandatory domestic traceability to maintain or enhance export market shares (Australia, Brazil, Argentina and Uruguay); and,
4. Voluntary systems (US).

In the EU and Japan all beef produced domestically must be able to be traced backward and forward between retail and farm of origin. Australia has plans for general mandatory traceability but traceability is currently mandatory only for exported beef, particularly for export to the EU and Japanese markets. Canada has a mandatory domestic animal identification system for all animals moving away from the farm of origin. This system establishes links between farms of origin and abattoirs or export ports, when animals or products are exported. A British Quality Assurance system requires individual animal identification and a history of on-farm health and treatments to address potential food safety issues in venison.

Over time the trend is for systems to move from voluntary identification towards mandatory.

Australia and Canada are two major beef exporting countries that have relatively recently introduced individual animal identification systems, for which data are available. Both countries have also introduced identification requirements for cervines. The Working Group has therefore studied these systems, of which brief descriptions are given below.

The Australian National Livestock Information System (NLIS) is a permanent whole-of-life identification system that enables individual animals to be tracked using RFID technology from property of birth to slaughter for food safety, product integrity and market access purposes. The system is being implemented for cattle on a state-by-state basis and underpinned by state legislation in each state. Alternative pathways (exemptions) exist and these can vary between the states.

Both Australia and Canada have mandatory tagging and individual animal identification systems in place for deer that allow velvet antler to be removed and identified by farm, accredited farmer and individual animal. Deer Industry Association of Australia are looking at the use of electronic tags with visible numbers and also rumen units (boluses) to aid in animal recovery following theft.

The Canadian Cattle Identification Agency (CCIA) is a non-profit organization that was incorporated to establish a national cattle identification program to trace and eliminate sources of disease and food safety concerns in the Canadian cattle herd. Introduced in 2001, the Canadian Cattle Identification Program (CCIP) requires the individual identification of all cattle moving beyond their herd of origin.

A CCIA-approved ear tag with a unique identification number, the number (in a bar code or Radio Frequency Identification (RFID) code) and CCIA logo must be applied to each animal at the time of leaving its herd of origin. The unique number of each individual animal is maintained to the point of carcass inspection where it is then retired from the CCIA database and the tag is destroyed.

A national database has been created to generate and store the unique identification numbers for each animal that moves beyond its herd of origin. The CCIA is committed to the ISO 11784 and 11785 standards for low-frequency animal identification devices and the transition to electronic identification by 1 September 2006.

Canada also has a strict provincial tagging and individual animal traceability system for all deer farms which is endorsed federally. Tags are all tamperproof in design and farmers have annual inventories to return information on births, deaths, breeding history and sales and purchases. A permit is required to move an animal off farm. The system was robust enough to deal with the Chronic Wasting Disease outbreak in Saskatchewan as all movements are recorded and permits required intra provincially. RFID is the next step. Most elk are also voluntarily DNA profiled for pedigree and purity and will serve as a traceability base if ever needed at that level.

Table One sets out a summary comparing the different cattle identification and traceability systems that are currently in place.

*Comment*

Traceability is already changing international beef markets. The question is whether in the future all traded beef will be traced according to its different attributes or if there will still be a place for beef that is not fully traceable. Most beef exporting countries are adopting some kind of traceability system in response to mandatory systems introduced in such important importing countries for high quality beef cuts as Japan and the European Union. The exporters' main motivation is to maintain or increase their positions in international markets for beef. The countries that have already adopted traceability systems have positioned themselves to gain the economic benefits of such systems in export markets. It is clear that traceability will become an increasingly integral feature of markets for food products.

The global trends are very telling. New Zealand's major customers and competitors have either implemented or are in the process of introducing individual animal identification systems. These market pressures will continue to increase over animal traceability and New Zealand needs to ensure its systems are equally effective.

**Table One. Comparison of international trends in cattle identification and traceability**

<b>Country</b>	<b>System</b>	<b>Depth</b>	<b>Precision</b>	<b>Comment</b>
EU	Mandatory	Traceability from place of origin to retail sales	Individual identification	The EU is leading the introduction of traceability systems worldwide and is a major driver in establishing world standards.
Japan	Mandatory	Traceability from place of origin to retail sales	Individual identification	While the traceability system is directed at domestically produced cattle, there are indications that it may be extended to imported cattle. Japan is one of the largest importers of beef and many of its suppliers are being forced to introduce traceability in order to supply to Japanese supermarkets.
Korea	Mandatory	Traceability from place of origin to retail sales	Individual identification	Like Japan, Korea has also passed legislation requiring mandatory traceability of domestically produced cattle from farm to fork. Cattle are able to be tracked from place of origin through to primal cuts at supermarkets.
Canada	Mandatory	Place of origin to slaughter	Individual identification	Cattle in Canada must be identified when they are moved from the farm where they were born to another farm, slaughterhouse or export.
Australia	Mandatory for Export	Place of origin to slaughter	Individual identification	Traceability can be used to verify the origin and other attributes of beef for both domestic and export markets, though it is more commonly used in the export market.
Uruguay	Mandatory for Export	Place of origin to slaughter	Individual identification	Uruguay is moving toward a mandatory individual identification system on cattle through ear tags. It is part of Uruguay's efforts to comply with EU import requirements.
Brazil	Mandatory for Export	Place of origin to slaughter	Individual identification	Traceability along the food chain in Brazil is only required for producers and processors exporting premium beef.
Argentina	Mandatory for Export	Place of origin to slaughter	Individual identification	As of mid 2004 all properties and feedlots registered for export in Argentina had to identify all cattle with a tag for traceability purposes.
USA	Voluntary	Potential for place of origin to slaughter	Potential for individual identification	Animal identification systems in the US are currently voluntary, moving to mandatory by January 2009.

## 2.2 Current animal identification systems in New Zealand

Current animal identification and traceability systems in use in New Zealand have not been designed for rapid farm to slaughter traceability. They include voluntary individual animal identification and mandatory herd identification.

### *Dairy Industry – voluntary system*

The Management Information System for Dairy Administration (MINDA) was developed by Livestock Improvement Corporation (LIC) primarily as a herd improvement tool and to aid in decision-making in the dairy industry. It is a voluntary individual animal identification system and allows for some level of traceability. However it has gaps and these include:

- It is not compulsory for all dairy farms to be registered with MINDA (although 97% are)
- MINDA identifies where and when a heifer calf is born. The next time the records are updated will be when the animal is sold or mated. In most situations neither the birth of bull calves nor the duration and location of off farm grazing are recorded although the ability to do this exists. The frequency of database updating is driven by on farm operational events such as calving or production testing
- Continued registration of individual cows is dependent on individual farmers maintaining records and tags increasing the potential for errors to occur; and
- Very few non-dairy farms are registered with MINDA.

MINDA was not designed for animal traceability. Rather, animal traceability is a consequence of its constant use by most New Zealand dairy farmers and the gaps in providing traceability are well known and accepted from this perspective. The fact that MINDA is able to provide accurate information for most dairy animals is driven primarily by the on-farm operational value of having accurate records and the increased sale value of recorded stock. There is a high uptake of the MINDA system motivated by commercial interest and farm profitability.

### *Bovine Tuberculosis (Tb) in Cattle and Deer - compulsory scheme<sup>1</sup>*

The National ID Scheme for bovine tuberculosis is a mandatory, herd based system for cattle and deer which requires farmers to identify animals 30 days of age and older prior to movement, using a double ear tag, and to manually record movements using an Animal Status Declaration form. Where it is suspected that the animal has bovine Tb, the tag and manual records are used by the Animal Health Board (AHB), the pest management agency for bovine Tb, to trace back the animal's movements and associations with other animals to identify and manage the source of the disease. The tags are also used for a number of other identification purposes.

While the scheme has a high uptake, and has undoubtedly improved traceability, it is incomplete as an animal identification scheme because:

- Unlike the MINDA system, the National ID scheme was designed for disease control purposes rather than to deliver tangible commercial benefit
- The system only gives a start point (usually place of birth) and end point (processing) making it very difficult to track movements in between unless all Animal Status Declarations can be located. Even then traceability may only be narrowed down to a few farms. For young animals less than 30 days old tags are not mandatory, so significant movements of young animals are not currently covered

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<sup>1</sup> Biosecurity Act 1993

- Replacement tags must be inserted when a tag is lost. This tells the processor that the herd number on the tag does not relate to that farm but the original herd number on the tag is lost. This can compromise full trace back
- The system is not designed as an individual animal scheme, and relies on reading tags and forms, meaning the process of trace back is slow; and
- There are few rules on the requirements for gathering and use of data generated under the scheme.

*Comment*

In conclusion, the two main identification systems in place in New Zealand both provide some level of traceability but not to an extent that all stock movements are known. A lot can be learnt from the two systems. MINDA demonstrates that when farmers are receiving value from an animal identification system, which can be used as a business management tool, a high level of voluntary compliance can be achieved.

The existing systems were established for different reasons. The dairy sector developed its system for the **commercial reasons** of genetic improvement and supply chain management in response to customer/farmer/industry demands. The livestock tracking systems in the beef and deer sector were developed **under regulation** to meet biosecurity and food safety requirements and up until 1998<sup>2</sup> were managed as a core Government responsibility. This distinction has influenced the respective development and uptake of livestock tracking systems in the two sectors.

### **2.3 Current animal traceability databases in New Zealand**

AgriQuality Limited and LIC are the main existing providers of databases that relate to animal traceability. Both these organisations operate in the commercial environment therefore work completed on these databases is directly related to funding received or revenue provided for operating the service. In addition, the AHB will manage its own databases for administering bovine Tb from 1 July 2005. Funding of the database for trace back of Tb animals is received from industry associations (Dairy InSight and Deer Industry New Zealand) and from compulsory slaughter levies on cattle.

#### *AgriQuality – AgriBase and NLDB*

AgriBase is an AgriQuality owned textual and geo-spatial database of farm positions, farm owners and managers, farm enterprises including livestock numbers and types. It has information on over 104,000 farms (including lifestyle properties).

The National Livestock Database (NLDB) was instituted in 1995. A major user of NLDB has been the AHB to maintain records of dairy, beef and deer herds (approximately 75,000 herds) and schedule Tb-testing, under the bovine tuberculosis pest management strategy. It also contains information on other species e.g. pigs. In order to be registered on NLDB the farm must also be registered on AgriBase. This is completed by allocating a farm identification (ID) number to each farm. As a result of the link between the two databases, NLDB provides a herd history of the animals attached to a particular parcel of land. When a herd moves from one farm to another the old farm ID is archived and the new farm ID is attached. This is useful for traceability purposes. NLDB's accuracy and link with AgriBase, and the mandating of the current identification scheme for bovine Tb, means that AgriBase itself is currently very accurate for farms that own cattle and deer.

To illustrate the distinction between AgriBase and NLDB, NLDB would tell the enquirer about the nature and history of the herd, while AgriBase would provide the means to locate the property and its owner/manager and the species maintained on that property. NLDB

<sup>2</sup> AgriQuality was established in 1998 as a state-owned-enterprise as part of the re-organisation of MAF.

and AgriBase combined capture close to 100% of cattle and deer information on all farms<sup>3</sup>. Since 1998 the functionality of NLDB has now largely been integrated into AgriBase.

Both AgriBase and NLDB are funded by way of purchased services charged to the user.

#### *LIC – MINDA*

MINDA is operated by the LIC with the data owned by farmers. Data collection standards are part of the supply contract for dairy suppliers. Farmer/suppliers fund the MINDA system via membership fees. There are five data products available to farmers with four of these being electronic. Approximately 8,000 farmers have opted for the electronic products. LIC is a commercial entity owned by 12,004 farmer shareholders. Its turnover for the year ended June 2004 was \$98 million with a surplus of \$4.8 million.

MINDA is useful as a database but it does not integrate with either NLDB or AgriBase for traceability purposes, although electronic data matching is periodically undertaken to assist in tracing MINDA identified cattle when bovine tuberculosis is suspected. In MINDA herds are attached to an owners' name rather than to a parcel of land. Also one MINDA participant code under the same name can apply to several herds in different locations, further reducing the accuracy of tracing animals to the area they are farmed.

#### *Animal Health Board – DMIS*

The Animal Health Board (AHB) has developed its Disease Management Information System (DMIS), containing the Tb data currently residing in AgriBase and NLDB, as the result of moving to contestability for the provision of disease management services. Previously AgriQuality was the monopoly service provider to AHB. DMIS is expected to be in place by July 2005.

The AHB's budget for disease control in 2003/04 was \$18.723m and this was funded from cattle slaughter levies and by contracts with Dairy InSight and Deer Industry New Zealand. A portion of this budget will be used to administer DMIS. The AHB has contracted with AgriQuality to access information from AgriBase/NLDB. LIC also provides information from the MINDA system to assist AHB in tracing Tb infection on a case by case basis.

While the AHB system is currently untested in practice it is likely to have similar problems with integration with the other animal traceability databases, and will duplicate some information already available.

#### *Other Databases*

A number of other databases in New Zealand hold information that is relevant to animal traceability including livestock breeding programmes such as the SIL database for sheep and information on properties, such as those held by Land Information New Zealand.

#### *Comment*

The AITWG concluded that current databases have information that would meet at least some requirements for animal identification and traceability, and there is some harmonisation between databases that already occurs. However, for full traceability they are still too fragmented or incomplete to meet industry need, lack consistency or duplicate core data and do not always integrate well. This is because the organisations managing them have differing responsibilities and different stakeholders to whom they are accountable. It is also because traceability is a side benefit of the database not its primary purpose.

<sup>3</sup> Page 10 of the LAPTYS report Support systems for Animal Traceability (April 2004)

## **2.4 Previous reviews and a Terms of Reference for the Animal Identification and Traceability Working Group**

A number of reviews have been undertaken in recent years. For this consultation document, the most significant was the LAPTYS report, *Support Information Systems for Animal Tracing* (John Hellstrom & David Moore, April 2004) and its summary report post-submissions.

Whilst the LAPTYS report concluded that the current animal identification systems were adequate for New Zealand's current needs, the industry wished to take the initiative to look at what might be needed in the future and how the current system could be enhanced to meet those needs. The report recommended the establishment of a joint industry-government working group to collectively look at this issue. This became the Animal Identification and Traceability Working Group which held its first meeting in August 2004. The Terms of Reference for the Animal Identification and Traceability Working Group can be found in Appendix One of this report.

### *Comment*

The AITWG deferred consideration of identification technologies until the overall framework was established. Depending on the feedback received from consultation, identification technologies will be considered along with database requirements as part of a detailed implementation plan for the proposed system.

### 3.0 PROPOSED FRAMEWORK FOR AN ENHANCED ANIMAL IDENTIFICATION AND TRACEABILITY SYSTEM IN NEW ZEALAND

This consultation document reports on the findings of the AITWG and offers a proposed framework for an enhanced cattle and deer identification and traceability system (currently nicknamed "TRACEY").

The AITWG considers the primary drivers for such a system to be (in order of priority) biosecurity, market access and commercial and consumer preference. When considering animal identification and traceability systems appropriate to New Zealand the AITWG took the following factors into account:

#### *The needs of industry*

- Biosecurity, i.e. ability to trace and shut down potential disease risks such as BSE and FMD, ability to maintain control of bovine Tb in cattle and deer.
- Food safety, i.e. ability to trace products forward which have been tested positive for hazards such as e-coli, ability to trace back to the origins of products containing residues such as antibiotics. Minimising the risk of residues getting into the food chain.
- Commercial, i.e. customer driven quality requirements which include biosecurity and food issues but can also include production recording, organic status of product, welfare of animals etc.

#### *Current regulatory requirements*

- These may be disease, market or client specific such as for Tb control or the EU stance on no product from HGP treated animals.

#### *Future regulatory requirements*

- Some markets may seek to impose regulatory requirements on suppliers to have at least an equivalent system across all basic dimensions for animal identification and traceability.

The AITWG noted that most overseas systems have been designed with market access issues in mind, yet the biggest tests for traceability systems have arisen in recent years for biosecurity reasons, e.g. foot and mouth disease in Britain and BSE in Canada. The Waiheke Island foot and mouth disease hoax in May 2005 also reinforced the need for faster and more efficient means of tracking down animals and their owners.

The AITWG concluded from its review that, if the de facto international standard for effectively tracing animals associated with a given suspect case becomes 48 hours, a mandatory system with minimal exemptions is essential. At the same time it became clear that meeting this standard cannot be achieved overnight nor can it be achieved without some cost to the industry and the country. The AITWG was very aware in its discussions that the industry is increasingly beset by rising compliance costs and aimed to develop a framework which is both comprehensive and cost effective.

The proposed framework describes a system which is technology neutral, outlines some principles, guidelines and rules which in the AITWG's opinion are required to meet New Zealand's future needs and provides a timetable for development and implementation that is both ambitious and realistic. While the focus has been on cattle and deer (and this has reflected in the membership of the AITWG to date), the group has also been conscious of the need for the system to meet future enhancements and requirements, but also to be simple and able to work across other livestock sectors. It is hoped that other livestock sectors will provide feedback during the consultation process to verify the suitability of what is being proposed relative to their own needs.

The proposal is set out in three sections:

1. Guiding principles for developing the New Zealand animal identification and traceability system.
2. Proposed mandatory datasets.
3. Suggested framework for delivery of cattle and deer identification and traceability.

### ***3.1 The guiding principles for an Animal Identification and Traceability System***

A set of guiding principles were developed by the AITWG members, and broadly endorsed by their respective governing bodies. These principles lay the foundation for the development of the proposed national framework. While they focus on cattle and deer the AITWG believe these core principles could be equally adopted by all livestock sectors.

#### **Definition of animal identification and traceability**

The ability to accurately identify and track a specified individual animal or group of animals from property of birth through to slaughter/death.

#### **Scope**

The initial species of consideration are cattle and deer however, the framework design will be flexible and open enough to encompass other livestock species.

#### **Objectives of animal identification and traceability systems**

Identification and traceability of animals will be such as to provide data to meet any agreed requirements such as:

- Necessary levels of domestic assurance for human and animal health
- Confidence to provide official international assurances regarding human and animal health; and
- The ability to easily interface with private and sector-specific systems that record other information about animals and their products unrelated to human and animal health. The design of the programme shall ensure that it will be able to be harmonised with current or future on-farm practices.

## Context

1. Animal identification and traceability is primarily seen in the context of biosecurity, market access and food safety. Existing identification systems are considered sufficient for current requirements, however, it is anticipated that enhancements will be required to the current systems for effective operations in the future.
2. Animal identification and traceability are not ends in themselves. They are risk management tools that may be appropriate where a hazard is identified and the risks from that hazard can be mitigated by the proposed measures.
3. Many producers and handlers of live animals and their products in the overall food chain have developed their own traceability systems to meet commercial needs and deliver identified benefits.
4. Other recording systems already exist in New Zealand. Any core mandatory animal identification and traceability system which may be developed should as much as possible be compatible with these current systems.

## Principles

1. Mandatory animal tracing requirements will only be imposed where justified by the need, which may be demanded externally, to manage identified risks to animal and human life and health and where there is a need to identify or locate risk animals.
2. Where international standards and guidelines exist, national measures should be harmonised to the maximum extent possible with such international standards (e.g. those of the World Animal Health Organisation (OIE) and Codex Alimentarius).
3. Animal identification and traceability requirements beyond those needed to meet New Zealand animal and human health and biosecurity outcomes should be consistent with the provisions of the World Trade Organisation's Technical Barriers to Trade Agreement and should, to the maximum extent possible, be left for voluntary application.
4. Animal identification and traceability systems should be soundly designed to provide a robust platform for Government food safety and animal health assurances, and flexible enough to accommodate future requirements and to enable harmonisation with voluntary non-mandatory tracing and identification requirements used for farm management, marketing and commercial reasons.
5. The mandatory and voluntary elements of animal identification and traceability systems need to be separately identified so that costs are appropriately allocated to where the benefits fall.
6. Best regulatory practice principles should be followed in the system's design. This includes simple, unambiguous definitions and requirements to be effective and manageable for all parties, and to enable animal owners, managers and processors to understand and adopt necessary changes to their operations to interface with mandatory systems.

### *Comment*

Interest in the national framework has also been expressed by the sheep and pork industries. From the perspective of managing risks, it makes sense to have good traceability across a number of animal sectors. For example, for foot and mouth disease, information on all these species would be needed to manage the outbreak and ensure rapid resumption on trade. Existing animal identification and traceability systems, however, are largely focussed on cattle and deer, and there is considerable interest from these sectors to proceed quickly to an enhanced system to be in a position similar to our main competitors.

The AITWG considers the decision on whether individual or herd identification is sufficient should rest with the sectors themselves reflecting actual needs and cost effectiveness. For cattle and deer indications are that individual animal identification is necessary.

Biosecurity and food safety (leading to domestic and export certification and assurance) are key drivers for the mandatory component of animal identification and traceability. To ensure uptake the adopted systems must fulfil on-farm management needs and commercial information requirements. The AITWG considers that the most effective system is one where voluntary uptake is maximised, i.e. people support the system and the data integrity because they gain direct benefits from that information.

### **3.2 The proposed mandatory information requirements**

The following information requirements are proposed by the AITWG as mandatory with any additional information provided on a voluntary basis. Mandating information requirements is likely to require either formal agreements or regulatory backing to ensure high compliance.

The AITWG considers there are two types of information that would need to be collected. **Core or base information** is information that would usually only be required to be entered initially, e.g. when setting up a new premises or herd, except where it needs to be updated. An example of core information is ownership. **Transaction information** is information related to a specific action that has been undertaken. An example of transaction information is recording a livestock movement. The aim will be for this information to be entered as soon after the action as possible.

#### *Core or base information (proposed):*

- a) Farm/premises information
  - Farm owner details
  - Farm occupier details
  - Farm/Premises location
  - Property identification (PLN) as allocated by an approved national identification system.
- b) Livestock details
  - Individual animal identification as allocated by an approved animal identification system
  - Identification of property of birth
  - Date (if available), month and year of birth.
  - Animal owner details
  - "Person in charge" (of animal) details

#### *Transaction information (proposed)*

- a) Animal health details
  - HGP treated
  - Animal disease status
  - Compliance with animal health treatment withholding periods.
- b) Animal movements/actions
  - Date of movement
  - Identification of animal moved
  - Departure location
  - Arrival Location
  - Transporter details.

- c) Missing or dead
- Property identification where animal last seen
  - Date of last sighting
  - Status Dead/Missing.

*Comment*

The identification of mandatory datasets does not preclude other fields being adopted or used by sectors, it just indicates that these fields as listed would be compulsorily recorded as part of the proposed system.

Existing databases already duplicate core information, including the assignment of unique identification numbers to premises, herds or animals. While the systems can be harmonised and information cross-checked the AITWG considers a single system which allocates the unique identifiers for subsequent use by various approved parties has merit.

The owner, occupier and person in charge of animals may be the same or different people and this needs to be recorded separately to facilitate information flows and to meet regulatory requirements.

While existing systems record “farm” identifiers, the AITWG considers that a similar identification system can be used for other premises where animals are held or kept. Examples include processing plants and sale yards. A similar approach has been adopted in other countries including Australia and the United States.

The approximate date of birth is currently used as part of on-farm management and MINDA. The AITWG considered that the month and year should be sufficient for most purposes, although the day of birth could also be entered where known (but it would not be a mandatory field).

Some markets, such as the EU, will not accept animals unless it can be demonstrated that they have not been subjected to hormone growth promotants (usually ingested as boluses) or HGP. This information is currently separately recorded in other systems.

The AITWG has agreed that in order to maintain the integrity of the information it will be necessary to record in the database all animals that have exited from the system (i.e. by being processed, by being exported, or by loss such as on-farm death or where the animal is classed as “missing”). What is less clear is how these should be recorded.

The importance of recording death/exit is demonstrated by the following example. Following an outbreak of a significant disease, TRACEY has identified 100 animals that have been in contact with an infected animal. Following trace back to their current locations only 80 animals are found. If the remaining 20 animals are recorded as dead then this presents a much less significant issue than if the fate of those animals are unknown. In the latter case considerable resources may be put into tracing those animals and proving to markets that these animals pose no risk or no longer exist.

### **3.3 A proposed model for cattle and deer identification and traceability**

#### **Scope**

The proposed system relates to cattle and deer.

#### **Objectives**

- a) The standards and methods for the animal traceability system should be providing sufficient information to meet trading partners’ biosecurity and food safety requirements internationally compatible to facilitate export trade.
- b) The system should be designed to enable identification of recent contacts of suspect biosecurity cases within forty eight (48) hours of notification.

- c) The standards and methods for the traceability system should provide both trace forward as well as trace back.

*This means for a given meat product the source animal or possible animals and the respective supply chain linkages (properties, slaughter, boning and distribution) can be determined (trace back) by the appropriate regulatory authorities. Once a trace back has been conducted then a trace forward can be conducted. A trace forward should identify where all the cohort animals and resulting meat product have been distributed.*

- d) Numbers used for identification need not have intrinsic meaning to the livestock producer. All that is needed is for the number to uniquely identify the animal or herd.
- e) Costs should fall equitably to the beneficiaries.

### **Proposed model for livestock traceability**

- a) A unique number is applied to each animal (including bobby calves).
- b) All farms, livestock carriers and relevant sites such as feedlots, sale yards and meat processing plants are identified by Property Location Numbers (PLN).
- c) All numbers must be unique; ideally if they are to be carried through the supply chain they should be globally unique.
- d) These unique numbers are allocated by a single body and contained in a single database to which other industry databases are authorised to link.
- e) The methods by which the numbers are carried (e.g. ear tag) and read are standardised. The acceptable methods could include human readable ear tags, bar codes or RFID. As technology changes the data carriers may also change. This means that if/when data carriers change, the numbering system remains the same and no databases changes are required. It also means that the system's users are not locked in to any one technology but may migrate from one to another as required without having to change the system itself.
- f) A designated service provider operates the central database of all registered properties, sale yards, feedlots, slaughter plants, livestock transport companies and animals/herds/mobs (TRACEY).
- g) A registered property applies directly or through a third party for a quantity of numbers. The entity responsible for allocating identity numbers records the property location number code, date and numbers issued.
- h) The issued numbers are applied directly or through a third party to an approved data carrier (ear tag, RFID, etc) and in the approved format. When the registered property uses the issued numbers (by application of the ear tag, etc) the property is to notify TRACEY directly or through a third party of the date of use, [species], and date or birth (or estimated month and year of birth)<sup>4</sup>. If TRACEY is not notified within 3 months of issue, the numbers become expired and a record of the expiry date is held on the database.
- i) When animals are moved (consigned) to a different property, to a feedlot, sale yard or slaughter, both the person responsible for sending and the person in receipt of

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<sup>4</sup> Cf. mandatory fields for livestock details

the animals must notify TRACEY of the movement by paper or electronic declaration. The declaration is to include a list of the individual animal numbers.

- j) When animals arrive at a slaughter facility the company is to send to TRACEY a message indicating that the animals are to be slaughtered and seeking confirmation of the validity of numbers and the animals' fitness for purpose.
- k) The company will then upload onto TRACEY animal slaughter and slaughter data and may optionally include weights, classification and any disease status or condemnments.
- l) In order to preserve the integrity of the data TRACEY will be audited periodically and producers shall be required to notify TRACEY of animals that have died or gone missing on their property. At any point in time animals would have the status of alive, dead or missing.
- m) A standalone body will be established to oversee the animal identification and traceability system.

*Comment*

Where integrated traceability systems for live animals have been introduced, 48 hours appears to be the de facto standard. In order to achieve this any trace back system will need to be electronic rather than paper-based. In considering the desired speed for trace back the AITWG looked at the demand for information in the event of a significant animal disease, such as foot and mouth disease.

The AITWG proposes to introduce tagging prior to first movement irrespective of animal age. Currently young animals less than 30 days old, such as bobby calves, can be moved without tags. This means information on farm of birth is lost unless manually traced back.

### **3.4 Definitions and terms**

The AITWG considers that a number of terms will need to be clearly defined as part of developing the proposed system. Examples of definitions include:

#### **Movement**

The relocation of an animal from one property to another non-contiguous property where:

- The person in charge changes; or,
- Where mixing with other animals under the charge of another person could occur; or,
- Where animals are moved to a property location greater than 10km distance<sup>5</sup> from their existing location.

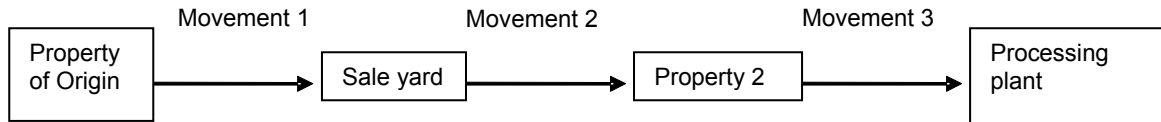
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<sup>5</sup> In considering the definition of movement there was some discussion over the need to record within property movements where the animals move some distance to a non-contiguous part of the same property. The suggestion to generate further discussion is that this is set where the distance "as the crow flies" between the closest boundary points between the two parts of the property is 10 km or more. Ten km equates to the "surveillance zone" set around an infected place during an outbreak. Investigation of the outbreak would include surveillance of all susceptible animals that were within this zone during the infection period.

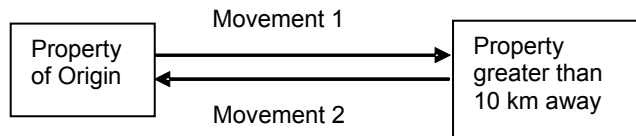
*Comment*

For example:

An animal that has moved from its property of origin to a sale yard to a second property and then to a processing plant would be considered to have made three movements e.g.



An animal that has moved from its property of origin to a second property or run-off (greater than 10 km from the property of origin) and back to its property of origin would be considered to have made two movements e.g.



### **Person in charge**

The person in charge of day to day farm management decisions with respect to an animal, or a person who is acting with the authority of the owner of the animal.

### **Non-contiguous properties**

Non-contiguous properties are those for which no common boundary between the land parcels exist.

## **3.5 Structure of the proposed national database – ownership, governance and access**

### **Ownership**

The nature and purposes of the information being collected identified to the AITWG the need for the establishment of a standalone body, with statutory backing to the level needed, to collate information from existing databases as well as collect new information. The establishment of a standalone body raises issues around ownership of the database information as well as ownership of the national identification scheme itself.

Where the standalone body would be collecting new information in its own right, it is appropriate that terms and conditions around the use of the information provided are made clear to those providing the information.

With respect to the information once it has been collected by the standalone body, the suggestion is that the aggregation will be owned by a custodial trust. Such an approach would ensure that no party or organization could gain commercial benefit from the database.

The constitution under which the body is incorporated will need to provide for data protection should the body be disestablished or if its purposes change. The constitution will also need to spell out the limits of use to protect commercial sensitivity and to ensure the costs of providing the information are met.

Ownership of the standalone body will be determined largely by factors such as:

- Who is providing the data (including farmers)
- The terms and conditions under which the data is provided
- Who provides the funding.

## **Governance**

As a general principle, the AITWG considers that governance should be given to those who fund the organisation and should reflect the need for statutory backing (as required) and adequate representation by funders.

## **Access to the database**

Access to the database will no doubt be sought whether for commercial, research or other purposes. This will need to be managed carefully to ensure the integrity of the national scheme and the information collected by the scheme and co-opted databases.

The AITWG considers it is extremely important that those asked to provide data to the system and co-opted databases understand very clearly how that information will be used.

Farmers are likely to have concerns if their information were able to be used by another party to extract commercial gain or some other benefit. Issues also arise from the provision of non-core data and the uses to which the data are put. At the same time, where there is collective benefit and members agree to use of the data for a defined purpose, there is a need for some flexibility.

One possible approach to address these concerns would be for the governance body to appoint a commissioner or panel of commissioners to assess requests for access to the database against a set of criteria.

Suggested criteria could include:

- Clear and specific use of database information
- Tangible benefits to the system and industry participants from the use of database information
- Potential risks/costs from the use of database information (i.e. where use of database information impacts on the integrity of the system and the information collected)
- Privacy Act considerations; and
- Anything else the governance body considers appropriate.

This approach would enable concerns around the use of database information to be managed in a way that enabled its use for the betterment of the livestock industry in New Zealand while minimising potential risks to the system.

### 3.6 Funding of the Animal Identification and Traceability System

Decisions will still need to be made on how the proposed system will be funded. This will include decisions relating to both the start up and establishment costs and to ongoing running costs including data collection, access and the purchase of devices and related equipment.

Cost areas will likely include (but are not limited to) the following:

- Equipment costs – e.g. tags, applicators, readers
- Transaction costs – associated with recording the ‘movement’(s) (relocation) of the animal over its lifetime.
- Infrastructure/framework development costs – construction of a new or amendment of an existing database into a central repository
- Annual governance/administration costs
- Access/user costs (e.g. to satisfy Biosecurity requirements)
- Communications costs to ensure awareness and uptake by stakeholders prior to implementation.

Cost areas will need to be separately identified so they can be appropriately allocated to where the benefits fall. When the AITWG investigated similar overseas identification and traceability schemes it noted that it was usual for a combination of industry and government funding to be used.

#### *Australia*

The Australian Federal (Central) Government has provided A\$5.2million to support the introduction of the National Livestock Identification Scheme (NLIS), while state Governments also allocated funds. The total estimated tax payer support to date is A\$10million. In June 2005 it was announced that Australia's cattle industry will receive A\$15 million from the government for the National Livestock Identification Scheme.

In 2004, Meat & Livestock Australia commissioned independent analysis<sup>6</sup> on the NLIS compliance cost for beef producers. Given the presence of ‘exemptions’ in the Australian system, compliance costs were calculated under ‘with’ and ‘without’ exemptions scenarios.

Costs were calculated according to the method of sale of cattle, cost of NLIS approved devices (A\$3.50 – A\$5.45), device loss rates, cost of device applicator (A\$33.60) and reading equipment and labour costs for device application, reading of devices and recording transfers on the NLIS database. Six different farming enterprises were examined (e.g. breeding and finishing, buying steers for finishing etc)

Where “exemptions” existed, cost of NLIS compliance, dependent on enterprise type, varied from \$0 to A\$2209.00/yr for a 500-breeder (total herd of 900 head) enterprise. The maximum cost of NLIS compliance for the different enterprises examined equated to A\$5.52/head of cattle sold, A\$4.42/breeder, \$0.02/kg of live-weight sold or A\$2.45/head of cattle owned for a 900-head enterprise.

Where “exemptions” did not exist, cost of NLIS compliance, dependent on enterprise type, varied from A\$31.23 to A\$2307.60/yr for a 500-breeder (total herd of 900 head) enterprise. The maximum cost of NLIS compliance for the different enterprises examined equates to A\$5.77/head of cattle sold, A\$4.62/breeder, A\$0.01/kg of live-weight sold or A\$2.56/head of cattle owned for a 900-head enterprise. The minimum cost of NLIS compliance for the

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<sup>6</sup> Alliance Consulting & Management:- Cost Analysis of NLIS Compliance for beef producers – May 2004

different enterprises examined where “exemptions” do not exist equated to A\$0.07/head of cattle sold, A\$0.0001/kg of live-weight sold or A\$0.03/head of cattle owned for a 900-head enterprise.

### *Canada*

The start-up funds for the Canadian Cattle Identification Agency (CCIA) were received through a grant from the Beef Industry Development Fund. Additional funds to be used for trials and development have been approved through Agriculture and Agri-Food Canada, the Canadian Food Inspection Agency and a number of provincial governments and private industry organizations. In the long term the program will be self-sustainable through sources such as a small surcharge on tags sold, industry services and certification fees.

Farmers/livestock owners pay the tag costs with approximate prices for RFID buttons being \$C3.00, optional visual tags \$C1.25 or a combination package per animal of \$C4.00.

#### *Comment*

For New Zealand, the AITWG recommends adoption of the principles for funding biosecurity recently adopted by Government as a suitable model for considering funding allocation. This advocates taking a case by case basis for who is best placed to pay for the services in question.

### **3.7 Legislative framework**

No existing legislation on its own can currently provide suitable mandating of a national animal identification and traceability system as outlined in the AITWG’s proposal. If the proposed system is adopted then a review of legislation will be required, however the Animal Identification Act 1993 may provide the suitable basis for developing the necessary framework. The principal legislation that will affect or may require amendment as a result of the introduction of a national animal identification and traceability is referred to in Appendix Two.

Other international standards and rules exist and, in accordance with the principles proposed, should be adopted wherever practicable. Further work will be required to identify these.

## 4.0 NEXT STEPS

The AITWG recommends the following indicative timetable be adopted:

- Submissions due by 30 September 2005
- Establishment of governance group by 1 December 2005
- Commencement of voluntary animal identification programme 1 October 2006
- Commencement of mandatory animal identification programme 1 October 2007.

### *Comment*

In seeking general endorsement from membership Boards, the AITWG noted the strong desire to proceed with enhanced animal identification and traceability for cattle and deer. For this to happen a number of steps need to be completed. These include:

- The need for widespread endorsement of the agreed principles, datasets and proposed framework for cattle and deer
- Further consultation with other livestock sectors on the general approach to ensure it is open and flexible enough to meet their needs, particularly around the core registry and generic framework
- Harmonisation with international standards (devices, communication etc)
- Establishment of a governing body to oversee the roll out of the new system
- Further consideration of the technical requirements and the access agreements to establish the core registry and the links to approved agencies
- Further discussions on sharing of costs, both establishment and ongoing costs. This would require work to identify more clearly what those costs are, and clarification of the benefits and where they fall, and development of a full proposal for organisations to take back to their membership for approval.
- Any potential government participation in the framework would need to be formally approved by the Crown. Changes to legislation to mandate any part of the new system would take time. For this reason, the AITWG proposes voluntary introduction in the first instance giving individual organisations time to come up to speed with the new requirements.

# ***Appendix One: The Terms of Reference for the Animal Identification and Traceability Working Group***

## **TERMS OF REFERENCE**

**Animal Identification and Traceability Working Group  
21 May 2004**

### **Working Group Membership**

Members of the Working Group shall be appointed by their respective governance bodies.

The Working Group shall select its own Chairman.

Sponsors of the Working Group shall include appointees (up to 2) from Federated Farmers, Meat New Zealand, Meat Industry Association (MIA), DCANZ, Dairy Insight, LIC, Deer Industry New Zealand, Pork Industry Board, New Zealand Stock and Station Agents Association, Animal Health Board, MAF Biosecurity & NZFSA.

### **Expenses**

Each organisation shall bear its own costs in participating in the Working Group.

### **Species**

The Working Group shall initially consider traceability and animal identification needs of cattle and deer but shall also take account of the needs of the following species: sheep, pigs, horses and goats.

### **Objectives**

The Working Group shall investigate and report on the needs of the livestock industries and government for animal identification and traceability systems. The Working Group should clearly define animal identification and traceability and the extent to which it should be applied along the value chain.

In particular the Working Group shall consider:

- Food safety assurances and biosecurity risk
- The position of competitors
- The current animal identification system and its effectiveness
- The range of species to be covered
- Identification technologies
- Whether there are clear, quantifiable value propositions at on-farm level
- Institutions, infrastructure and governance
- Cost, practicality and timeframes
- Previous research reports.

**Membership of the Animal Identification and Traceability Working Group as at 1 July 2005**

**Nominated Members of the Animal Identification and Traceability Working Group**

Ian Corney	Federated Farmers of New Zealand (Inc)
Rennie Davidson	MIA Nominee (ANZCO Group)
Jeff Grant (Chairman)	Meat & Wool New Zealand
Mark Leslie	Fonterra Co-operative Group Limited
Andrew MacKenzie	New Zealand Food Safety Authority
Richard McColl	MIA Nominee (Alliance Group Ltd)
Barry O'Neil	Ministry of Agriculture and Forestry
Paul Reynolds	Ministry of Agriculture and Forestry
Ian Robb	Dairy InSight
John Scurr	Deer Industry New Zealand

**Executive Support Members of the Animal Identification and Traceability Working Group**

Lindsay Burton	Fonterra Co-operative Group Limited
Jacob Haronga	Federated Farmers of New Zealand (Inc)
Simon Hegarty	Meat Industry Association of New Zealand (Inc)
Susan Keenan	Ministry of Agriculture and Forestry
Ben O'Brien	Meat & Wool New Zealand
Mark O'Connor	Deer Industry New Zealand
Bridget Peachey	Meat & Wool New Zealand
Tony Pearse	Deer Industry New Zealand

## ***Appendix Two: The Animal Identification Act 1993 and Related Legislation***

The Animal Identification Act 1993 allows the Director General MAF to register an animal identification system which provides unique, clear and lasting identification of animals, having regard to:

- Distribution
- Management practices; and
- Providing for registration and continuing update without confusion with any other registration system

The Act provides that Regulations may be made to:

- Prescribe the method for applications
- Regulate the content of identification systems
- Prescribe the rights and obligations of registered holders of identification systems
- Provide for the Director General to recover costs of establishment and maintenance of the register; and
- Prescribe offences.

The Act provides for offences in respect of:

- The destruction of skins or removal of distinguishing identifications
- Alteration and effacement of registered identifications; and
- Misleading identifications.

The Director General has responsibility for maintaining a register of approved identification systems, monitoring its effectiveness and has the power to revoke any system that not being operated effectively.

No regulations under this Act have been put into place regarding an identification system and no systems have been registered by MAF in respect of this Act to date.

The Act sets out the principles of an effective identification system, however, MAF considers there is a need for updating the Act to incorporate the data issues (privacy, access) with respect to the proposed national framework for animal identification. This legislation could be developed as the generic basis for mandating requirements for the national system and is seen as enabling for this purpose. A number of changes to bring it up to date with technology and to encompass the collection of and use of information related to the animal identification system may be required.

In addition further legislation that will affect or may require amendment as a result of the introduction of a national animal identification and traceability system are the following:

- Animal Products Act 1999
- Biosecurity Act 1993
- Dairy Industry Restructuring Act 2001
- Hazardous Substances and New Organisms Act 1996
- Official Information Act 1982
- Privacy Act 1993.