NEW SOUTH WALES AUDITOR-GENERAL'S REPORT

PERFORMANCE AUDIT

NSW Agriculture: Implementing the Ovine Johne's Disease Program

THE AUDIT OFFICE
OF NEW SOUTH WALES

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OF NEW SOUTH WALES

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The full report is available on our Internet site: **www.audit.nsw.gov.au**

Audit Opinion

The implementation of the OJD program in New South Wales has been prolonged and difficult.

In our view, the OJD Program in New South Wales has experienced two major difficulties with its implementation:

- the lack of a strategic approach to program management, and
- an ill-defined governance structure.

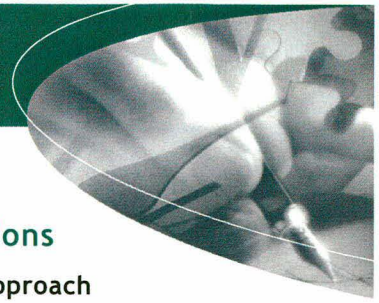
These led to:

- extended, negative debate
- limited assistance, notably initially
- dissatisfied stakeholders, particularly sheep stud producers
- limited operational planning and review.

Only now is the Program reaching a point where there is growing, widespread acceptance within the NSW sheep industry.

There are significant skills and infrastructure to implement animal disease programs, such as OJD, within New South Wales. But the insidious nature of the disease and the lack of knowledge about it have been serious impediments to the implementation of the Program.

Both the NSW Government and industry need to be better organised and improve the planning, direction and co-ordination of the OJD Program and future programs.



Recommendations

A New Strategic Approach

A more comprehensive strategic approach to the OJD Program in New South Wales is required, including operational objectives and targets.

Better Governance Structure

The governance arrangements need to provide for greater direction and control over the OJD Program in New South Wales. The roles and responsibilities of committees, working parties and Government should be revised to complement the above strategic and operational framework, and to implement the Program fully.

Drawing on Emergency Animal Disease Planning Practices

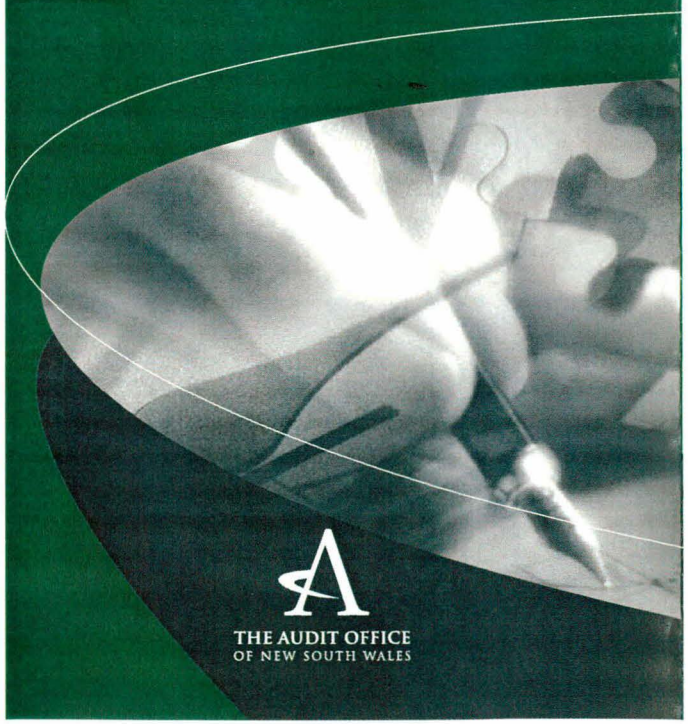
OJD is not classified as a national emergency animal disease, nor is it an established endemic disease. A third approach is needed to achieve speedy recognition and availability of assistance.

Preparedness for and response to a disease threat similar to OJD will improve if some of the principles of the national approach to emergency animal diseases are adopted and adapted.

IN BRIEF

PERFORMANCE AUDIT INBRIEF

NSW Agriculture: Implementing the Ovine Johne's Disease Program



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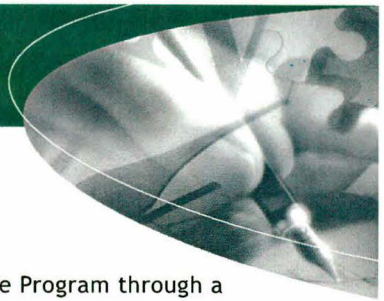


The Disease Program

Ovine Johne's Disease (OJD) is a wasting - but in most cases non-fatal - disease of sheep. If unchecked, it has the potential to cause annual industry losses in New South Wales of hundreds of millions of dollars.

OJD does not affect all sheep farmers at present but has the capacity to spread beyond its current boundaries. Those not affected largely lack the power to prevent the spread; those already affected may lack both the power and the incentive.

The disease is spreading in the central and southern tablelands and adjoining areas. Almost 45 per cent of the State's stock is within the infected areas.

Dealing with OJD is a classic example of where government involvement is necessary to achieve a result that individuals (in this case sheep farmers) cannot achieve through their own actions.

In these situations, governments must strike the proper balance between the rights of individuals and what is good for the industry overall.

A six-year National OJD Program, funded by governments and the sheep industry, commenced in 1998. The Program promotes national research and development and consistency in control measures. The States have considerable discretion implementing the Program's control measures.

NSW Agriculture supports the Program through a combination of a program team and the use of other technical and administrative officers. Rural Land Protections Boards are largely responsible for the delivery of the State Program in accordance with OJD policy and procedures. Producer input is largely through two advisory committees.

The total cost of New South Wales' participation in the Program, over the six years, is estimated to be $38.1 million.

The audit focused on the management of the OJD Program in New South Wales - its planning, operations and evaluation.

The audit provides valuable insights for all shared regulatory arrangements.

INBRIEF

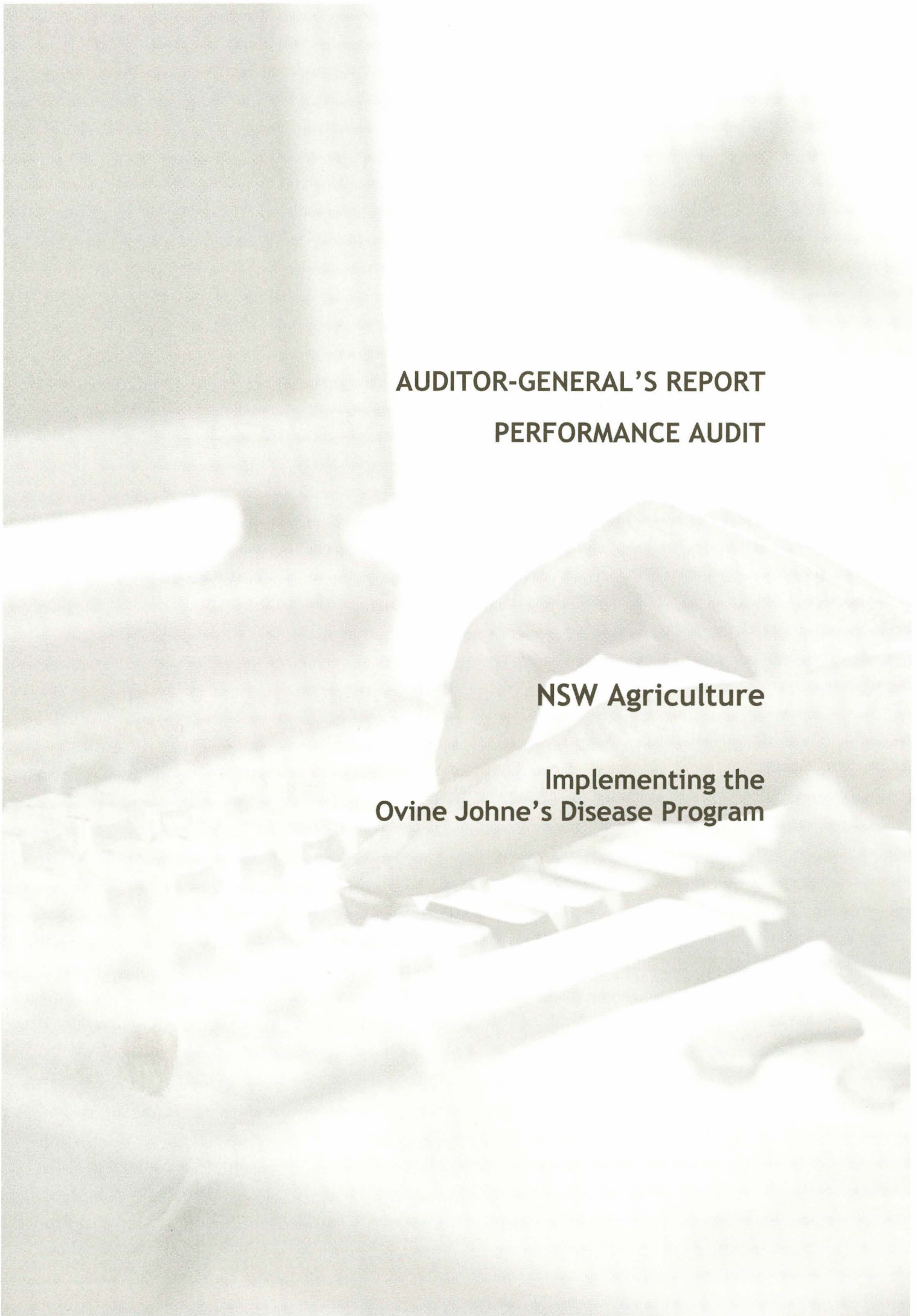
GPO BOX 12
SYDNEY NSW 2001

Members of the Legislative Council
Members of the Legislative Assembly
Parliament House, Macquarie Street
SYDNEY NSW 2000

In accordance with section 38E of the *Public Finance and Audit Act 1983*, I present a report titled **NSW Agriculture: Implementing the Ovine Johne's Disease Program.**

R J Sendt
Auditor-General

Sydney
February 2003



AUDITOR-GENERAL'S REPORT

PERFORMANCE AUDIT

NSW Agriculture

Implementing the Ovine Johne's Disease Program

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Foreword

Ovine Johne's Disease (OJD) is a wasting - but in most cases non-fatal - disease of sheep. If unchecked, it has the potential to cause annual industry losses in New South Wales of hundreds of millions of dollars.

OJD does not affect all sheep farmers at present but has the capacity to spread beyond its current boundaries. Those not affected largely lack the power to prevent the spread; those already affected may lack both the power and the incentive.

Dealing with OJD is a classic example of where government involvement is necessary to achieve a result that individuals (in this case sheep farmers) cannot achieve through their own actions.

In these situations, governments must strike the proper balance between the rights of individuals and what is good for the industry overall.

Governments must decide whether the benefits of their intervention accrue wholly to the industry (and the costs should therefore be met by those in the industry) or whether there are 'spill over' benefits to the wider community (who should therefore fund part of the cost through general taxation).

And, most difficultly, governments may need to deal with an industry whose members hold widely differing views as to the problem, the solution and the very need for government intervention.

I believe this audit provides valuable insights for all shared regulatory arrangements.

R J Sendt
Auditor-General

February 2003

Contents

Foreword

Executive Summary 1

1. OJD in New South Wales 9

2. Strategic Framework 17

3. Implementation of the Program 23

4. A Framework for Emerging Animal Diseases 29

Appendices 33

- Background to the National Program 34
- Further Details of the National Program 36
- Implementing Disease Controls 39
- Audit Plan 43

Performance Audits by the Audit Office of New South Wales 47

Executive Summary

Background

Ovine Johne's Disease (OJD) affects sheep through a bacterial infection of the lower bowel. The disease is difficult to identify in its early stages. It can take years to manifest itself and sheep shedding infected faeces can show no clinical signs.

New South Wales has the vast majority of cases in Australia and is at the forefront of initiatives to control the disease. However, the disease is spreading in the central and southern tablelands and adjoining areas.

OJD was officially recognised in New South Wales 23 years ago. Strategies to deal with the disease in New South Wales have been developed since the early 1990s.

A six-year National OJD Program, funded by governments and the sheep industry, commenced in 1998. The Program promotes national research and development and consistency in control measures. The States have considerable discretion implementing the Program's control measures.

Nearly 16 per cent of flocks in New South Wales are infected with OJD or are under surveillance. Almost 45 per cent of the State's stock is within the infected residual and control areas. NSW Agriculture has estimated that if the disease was uncontrolled, and left to increase from the current relatively low incidence rate, the cost to the NSW economy would escalate to $204 million in stock losses and $248 million in lost wool income per year.

The total cost of New South Wales' participation in the Program, over the six years, is estimated to be $38.1 million.

The Program is managed through a complex set of structures at the national and state levels. The management chain linking the various levels and locations includes controlling and advisory committees, government regulatory and industry organisations, and producers.

NSW Agriculture supports the Program through a combination of a program team and the use of other technical and administrative officers in the Division of Animal Industries. Rural Land Protections Boards are largely responsible for the delivery of the State Program in accordance with OJD policy and procedures.

The audit focused on the management of the OJD Program in New South Wales - its planning, operations and evaluation.

AUDIT OPINION

The implementation of the OJD program in New South Wales has been prolonged and difficult.

In our view, the OJD Program in New South Wales has experienced two major difficulties with its implementation:

- **the lack of a strategic approach to program management, and**
- **an ill-defined governance structure.**

These led to:

- **extended, negative debate**
- **limited assistance, notably initially**
- **dissatisfied stakeholders, particularly sheep stud producers**
- **limited operational planning and review.**

Only now is the Program reaching a point where there is growing, widespread acceptance within the NSW sheep industry.

There are significant skills and infrastructure to implement animal disease programs, such as OJD, within New South Wales. But the insidious nature of the disease and the lack of knowledge about it have been serious impediments to the implementation of the Program.

Both the NSW Government and industry need to be better organised and improve the planning, direction and co-ordination of the OJD Program and future programs.

KEY FINDINGS

Missing Operational Strategies

There is a lack of specific strategies and targets for the implementation of the Program in New South Wales. As a result, activities lack direction and coherence. There is no evaluation of the operational activities in New South Wales on a program basis, including budgets, control measures, surveillance, communications, social support and management of strategies.

In contrast, the National Program has detailed strategies and sub-programs to co-ordinate and monitor.

Confusing Communication

The policies and procedures for the management of OJD have developed layer upon layer. They are complicated and detract from an understanding of control measures.

Casualties of Regulation

Regulations used to contain the disease have contributed to the financial and social hardships of many affected producers. These risks were recognised but largely ignored by the Program.

NSW Agriculture was slow to facilitate financial assistance, business advice and welfare support. Alienated stud breeders have been slow to accept, and engage with, the Program.

Slow Acceptance

It is only now, some four years after its introduction, that the Program is gaining wider acceptance from affected farmers. The greater acceptance followed the introduction of the Spanish sourced vaccine and increased familiarity with the Program. As a consequence, affected farmers now view the efforts of NSW Agriculture more favourably.

Knowledge of the disease is improving through on-going research and surveillance. However, control measures continue to be based on limited understanding of options.

Leadership and Governance

The governance or committee structure has not adjusted to meet the current needs of the Program in New South Wales.

Governance arrangements have not supported decisive leadership and constructive consultation. This compounds the lack of State strategic and operational planning.

The sheep industry's dispersed views about disease control have impeded a coherent approach. These views are based on farm type, breed, location and whether properties are infected or not.

Industry Levy

The collection of the State industry levies is costly compared to other levies and the scheme is not attractive to producers.

Disease Approach

There are no national or state templates to guide a response to OJD or similar animal diseases.

OJD is not classified as a national emergency animal disease, nor is it an established endemic disease. This impeded the response to the disease. A third approach is needed to achieve speedy recognition and availability of assistance.

RECOMMENDATIONS

The recommendations apply to both the OJD Program and future non-emergency programs.

A New Strategic Approach

A more comprehensive strategic approach to the OJD Program in New South Wales is required, including operational objectives and targets. This will allow for better co-ordination and monitoring by industry and NSW Agriculture.

A Better Governance Structure

The governance arrangements need to provide for greater direction and control over the OJD Program in New South Wales. The roles and responsibilities of committees, working parties and Government should be revised to complement the above strategic and operational framework, and to implement the Program fully.

Drawing on Emergency Animal Disease Planning Practices

Preparedness for and response to a disease threat similar to OJD will improve if some of the principles of the national approach to emergency animal diseases are adopted and adapted.

RESPONSE FROM NSW AGRICULTURE

NSW Agriculture accepts the Audit Office's performance report into the implementation of the ovine Johne's disease (OJD) program as a positive contribution to a better management approach to a very complex animal health problem. However, NSW Agriculture has concerns about some individual comments, which do not adequately acknowledge the constraints applying at the time, and also with some inaccuracies on technical issues.

As the report states, the activities in NSW are part of the National Ovine Johne's Disease Control and Evaluation Program (NOJDP) which commenced in 1998. The establishment of the NOJDP is recognition of the national importance of this disease. The National Sheep Industry, represented by Wool Producers and Sheepmeat Council of Australia, Commonwealth and State Governments are working to:

1. *undertake research during the NOJDP, to provide sufficient information to allow an informed decision to be made on the national management of OJD, and especially on the feasibility and cost-effectiveness of eradication; and*

2. *control the spread of OJD during the NOJDP period.*

The report has identified a key feature of the OJD program: the division in the sheep industry regarding this disease. The majority of sheep producers whose properties are free from the disease (approximately 95% of NSW sheep properties), do not want the disease and are seeking strategies to control the spread of OJD. On the other hand, producers whose properties are infected have an opposing view and are critical of the Program, or at least some aspects of the Program, used to control the spread of OJD.

This situation presents a challenging situation for policy makers. There is conflict between disease control and free trade. NSW Agriculture works with the NSW sheep industry to develop appropriate policies that strive to obtain the correct balance between disease control and endeavouring to ensure that the vast majority of properties free from this disease remain free, and appropriate trading options for those producers whose properties are infected.

KEY RECOMMENDATIONS

NSW Agriculture considers that the recommendations made in this report will help improve the future management of the OJD program. Specific comments about the three key recommendations follow:

1. A New Strategic Approach

NSW Agriculture acknowledges the need to better document its operational plan. NSW Agriculture has input into the development of the NOJDP Strategic Plan. It then uses this as its guide for operational activities. NSW Agriculture has commenced a process whereby the operational activities will be documented and evaluated against the NOJDP objectives.

2. A Better Governance Structure

This issue is currently being addressed by the Ovine Johne's Disease Advisory Committee which is the peak industry OJD policy advisory committee. It is important to note that the structure of this Committee was appropriate at the time of its establishment. It provided an avenue for a wide cross section of producers, and in particular affected producers, to discuss and advise on policy direction.

However, as the Program in NSW has developed, so has the need for a new structure at the peak policy advising and formulating level. A new structure proposed by the Ovine Johne's Disease Advisory Committee will see better separation between strategic and tactical activities, as well as better facilitate contributions of the full spectrum of producer views.

3. Drawing on Emergency Animal Disease Planning Practices

Many lessons have been learnt from the implementation of the NOJDP in NSW. These will be combined with the principles of emergency animal disease planning to improve future animal health programs.

KEY FINDINGS

Specific comments regarding the key findings are:

a. Missing Operational Strategies

The report has identified detailed strategies and sub-programs at the national level. NSW Agriculture uses these as the basis for planning operational activities. With the level of detail in the national plan, it was previously considered unnecessary to document NSW tactical activities as the State was using the National Plan as its guiding document.

NSW Agriculture will however, implement a process of documenting and evaluating NSW strategies and tactical activities. This will be done in conjunction with industry.

b. Confusing Communication

NSW Agriculture acknowledges that communication can always be improved. This should be part of any continual improvement process.

However, it is important to recognise that the policy and procedure documents mentioned in this report are designed to provide the detail required to ensure consistency in the implementation of regulatory policy. Other avenues have been and will be used to communicate the broad principles of the Program to a wider audience.

c. Casualties of Regulation

NSW Agriculture does not support the notion that the financial and social impacts of regulations were ignored. The report does not highlight the constraints NSW was placed under in implementing this Program. The need for financial assistance to affected producers has been recognised. Unfortunately the National Sheep Industry was unsuccessful in its attempts to develop such a package. NSW Agriculture and the NSW industry supported such measures. The lack of agreement among all states resulted in the failure of this critical initiative.

The report does not fully recognise the constraint of policy development in a National context. All states had to be in agreement for national policy developments to be adopted and implemented. Such processes take a great amount of time.

d. Slow Acceptance

It is pleasing to see the report acknowledge the support the Program is obtaining and the efforts of NSW Agriculture being viewed more favourably, particularly amongst producers in those areas most seriously affected by the disease.

Any disease control, be it human, plant or animal, will be based on limited knowledge as further research always expands the knowledge base. The key point is the knowledge was sufficient to undertake a control program.

e. Leadership and Governance

NSW Agriculture agrees that the diversity of views has been a key factor in gaining slow acceptance of the Program.

f. Industry Levy

NSW Agriculture acknowledges that the collection of the State industry levies is costly when compared to the average costs of collections achieved by the Commonwealth Levies and Revenue Service. As the report correctly states the desire by industry for a transaction based levy collection is not supported by legal opinion on constitutional limitations. Consistent legal opinion on this matter was obtained by both the NSW Government and the NSW Farmers' Association.

The slow payment by some producers also contributes to the collection costs.

CONCLUSION

This report highlights some of the difficulties that have been experienced in implementing the NOJDP in NSW. While division in the industry has slowed progress and acceptance of the Program, recent developments including the registration of the Gudair vaccine in Australia and the removal of individual property quarantine within the former Residual Zone (now referred to as the Management Area), have assisted in progressing this Program.

It is important to note, as the report does, that the Program has been funded and led by both industry and Government. NSW Agriculture will continue to respond to the challenges this partnership approach presents in the most productive and effective way possible to deliver benefits to the sheep industry and results to NSW taxpayers.

This report will assist NSW Agriculture to continue to develop better partnerships with industry in implementing future plans.

(signed)

R F SHELDRAKE
DIRECTOR-GENERAL

Dated: 13 February 2003

1. OJD in New South Wales

The Disease

Ovine Johne's (pronounced Yo-nees) Disease (OJD) is an incurable disease and is not easily identified. It causes a thickening of the intestinal wall, and reduces appetite in the clinical stages. It causes wasting and, in some cases, leads to death.

It has a long-term incubation of up to five years during which time infected sheep may show no physical signs of the disease. The main means of spread is from the shedding of bacteria in the faeces of infected animals. The excreted bacteria can survive on pastures and in water for several months.

Animals are also infected in the womb or at birth, suckling on infected udders and ingesting feed and water contaminated with faecal material. There is incomplete understanding of the reason for the existence of the disease in certain areas and not others.

A different strain of Johne's Disease, Bovine Johne's Disease (BJD) affects cattle, alpaca and goats. Goats are susceptible to both strains. BJD is considered under control in New South Wales but is a significant disease in Victoria.

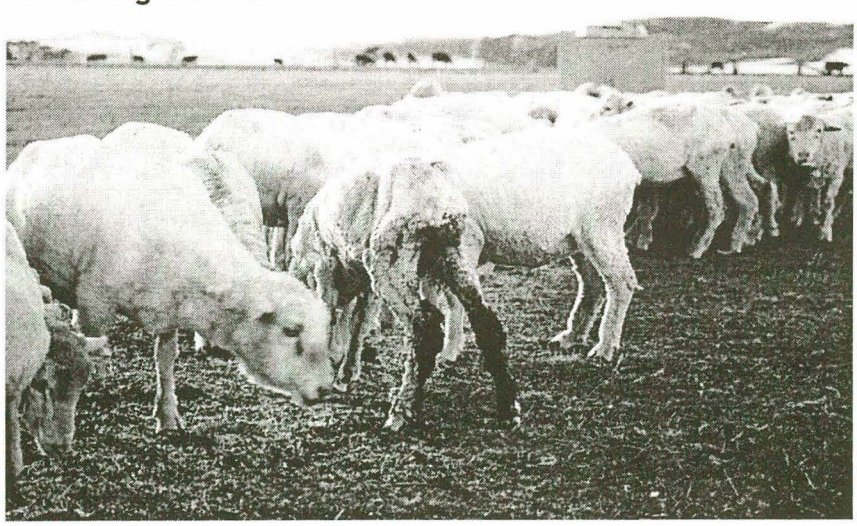
NSW Sheep Industry

New South Wales has approximately 32,000 flocks or 40 million sheep, about 36 per cent of the sheep in Australia. The State's sheep industry has a gross annual production of $1.3 billion.[1]

OJD imposes heavy costs on affected sheep farms. These include:

- reduced sheep, wool and semen sales
- replacing lost sheep
- increased management costs - testing, vaccination
- reduced property or business values.

Clinical signs of OJD



Source: NSW Agriculture

[1] Australian Bureau of Statistics *Agricultural Commodities* December 2002

Impact on Flocks

Young animals are more susceptible to infection. Older animals appear to exhibit some immunity. Finding one infected animal in a flock is likely to indicate other infected animals in the early stages of the disease.

The severity of production losses and mortality is affected by:

- condition of animals - level of infection or flock stress
- on-farm factors such as fencing and pasture management
- climate
- sheep age
- type of farm enterprise and level of trade
- co-morbidities, such as barbers pole worm and liver fluke.

Infected animals are sold to abattoirs for slaughter. There is no conclusive evidence to indicate that the disease is dangerous to humans or that meat from infected animals should not be eaten. Johne's Disease does have some similarities with Crohn's Disease in humans and research continues into the link. These uncertainties and a desire by some countries for disease-free animals have possible trading implications.

Estimates of the annual cost of OJD to farm production vary between $7.2 million and $25 million.[2]

NSW Agriculture has estimated that if left uncontrolled the cost of OJD to the NSW economy would escalate to be $204 million in stock losses and $248 million in loss of wool income per year. The increase would be from the relatively low incidence levels at present.

Spread of Infection

It is becoming clear that when the disease is identified, medium to long-term strategies are required to contain and possibly eradicate it.

OJD was formally identified in the Central Tablelands in 1980. The spread has been south from Bathurst along trading corridors (Bathurst to Albury) and then by lateral movement to neighbouring properties. The residual zone, or high incidence area, includes the Central Tablelands, Goulburn, Yass and part of the Braidwood districts.[3]

Lateral spread was recognised by the late 1980s; however, its impact was more obvious in the late 1990s when spread of OJD by sheep trading declined.

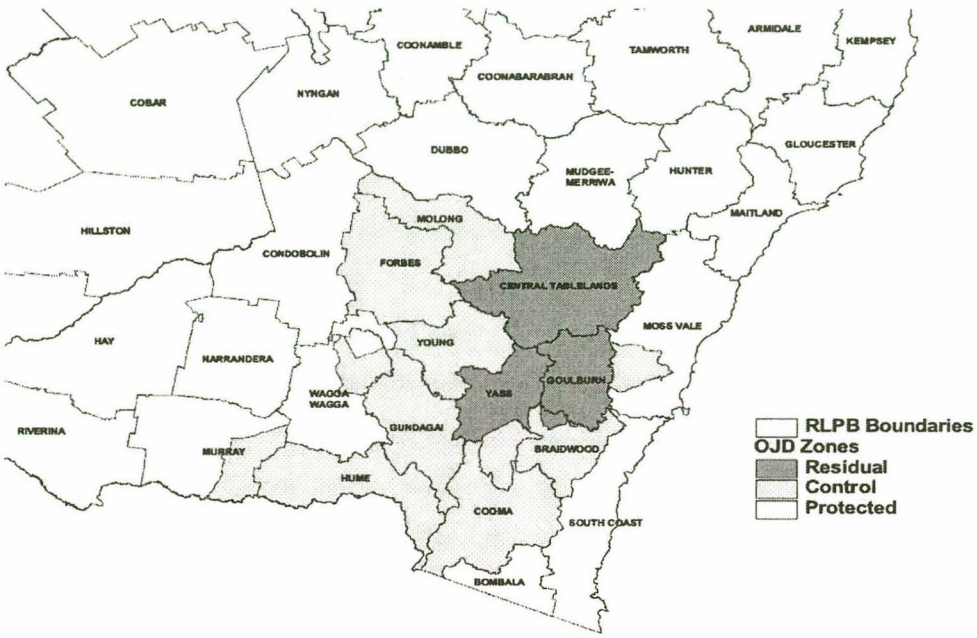
The following map illustrates the regulatory zones and the spread of the disease.

[2] ABARE *Ovine Johne's Disease - Evaluation of Control and Eradication Strategies* January 2001 page 1 and Hassall & Associates Pty Ltd *Financial Impacts and Forms of Assistance for OJD Affected Producers* June 2000 page 33

[3] Appendix C page 35 provides a description of the zones in New South Wales and recent developments.

Map of NSW OJD Zoning Boundaries - October 2002

Notes: Boundaries used are those of the Rural Land Protection Boards
The residual zone is the high incidence area.



Source: NSW Agriculture

Statistics

Comprehensive statistics on OJD were collected from April 2000. Prior to 1996, surveillance data relied on producers reporting suspect cases. Since the late 1990s there has been on-going testing of high-risk flocks and extensive abattoir surveillance.

The following 'at risk' figures show an increase of 84 per cent in OJD in New South Wales over the past two years, largely in the residual zone. Fifty per cent of the 'at risk' flocks are in the residual zone. The number of 'at risk' flocks, as a percentage of total flocks in New South Wales is 21 per cent. Ninety per cent of infected flocks are in New South Wales.

OJD 'At Risk' Flocks in NSW						
	Infected	Suspect	Under Surveil-lance	Not Yet Assessed	Total 'At Risk'	Total NSW Flocks
Sept. 2002	1,003	777	3,310	1,500	6,590	32,184
June 2000	453	566	1,204	1,368	3,591	31,875

Source: NSW Agriculture, Quarterly Disease Surveillance Reports

Since 1980, 1,188 flocks have been identified as infected. At September 2002, 3.1 per cent of flocks in New South Wales were confirmed infected. During July to September 2002, 151 new flocks were reported as infected.

NSW Agriculture's epidemiological study of February 2001 reported a known infection of 1.6 per cent of flocks and 8 per cent suspect and a probable incidence of between 6-8 per cent.

Epidemiology studies suggest an overall mortality rate of 4 per cent, although rates of 15 per cent and higher have been reported in some fine wool merino flocks. On the other hand some identified flocks report little or no losses.

Regulation

Johne's Disease is a notifiable disease under the *Stock Diseases Act 1923* (the Act). The effective operation of the Act requires significant industry and government co-operation.

The Act supports quarantine and regulation of infected areas. Inspectors can enforce such conditions as prohibiting the transport of stock, the testing and treatment of stock, the closure of roads and destruction of infected stock. Until recently, only limited property-to-property movements were allowed and many movements were for slaughter. Sheep in low risk areas are allowed to trade without restrictions and are exposed to on-going surveillance.

Under the Act, quarantine can be either by agreement or declared by the Minister. The 'quarantine by agreement' option became part of the Act in mid-1997. Since than, 1,776 properties have been quarantined. Prior to 1997 the *Stock Diseases Act* was not used for quarantining OJD infected flocks. From 1980 to 1997 owners of infected flocks were advised in writing by District Veterinarians not to trade their sheep. Approximately 75 of these assessments were made. According to NSW Agriculture, an estimated 15-20 per cent of producers refused to accept the assessment.

Once in place, the quarantine for OJD is difficult to remove because there is no simple means of eradicating the disease from infected flocks.

Further information on the background to the OJD Program, its basis, emphasis on de-stocking, early OJD strategies and the emergence of a national focus can be found in **Appendix A**.

National Program

The National OJD Program commenced in 1998 with a six-year horizon following agreement by government and industry. The NSW Government signed the Program Agreement on behalf of the NSW Sheep Industry. The National Industry is represented by the Sheepmeat Council of Australia and WoolProducers Australia.

An underlying philosophy of the National OJD Program Deed of Agreement is that industry should be both heavily involved in the management and delivery of the Program and make significant financial contribution to its operation.

The aim of the Program is to minimise the impact of OJD by containing its spread and controlling its effects. The eradication objective favoured earlier was deferred until further research and evaluation was undertaken. Eradication remains a long-term objective of the Program. The more cautious approach was taken because of the limited knowledge of the extent of the disease and the likely costs of the Program.

National Program Responsibilities

The co-operative program is co-ordinated through Animal Health Australia (AHA), Canberra. A Program Advisory Committee provides advice to the AHA. The Primary Industry Ministerial Committee, a component of the Council Of Australian Governments, oversees the National Program. The national Veterinary Committee provides technical advice.

Governments and industry at national and state levels share OJD Program responsibilities. The States, notably New South Wales, have significant operational responsibilities.

National OJD Responsibilities	State OJD Responsibilitiess
• overall program co-ordination	• implementation of operational strategies including provision of resources and structures
• research and development program	• technical support for affected producers
• surveillance assessment	• managing funding and providing on-farm management support
• national communication program	• information supporting implementation

Source: *A Guide to Johne's Disease in Australia* AHA May 2001

Program Relationships

The OJD Program is managed through a complex set of structures at the national and state levels. The management chain linking the various levels and locations includes controlling and advisory committees, government and industry organisations, and producers.

The NSW OJD Advisory Committee provides policy advice to the Minister for Agriculture. The Committee is sponsored by the NSW Farmers Association. It has a large membership from across the industry.

NSW Agriculture supports the OJD Program through a combination of a program team and the use of other technical and administrative officers in the Division of Animal Industries. Rural Land Protections Boards are largely responsible for the delivery of the State Program in accordance with NSW OJD policy and procedures

NSW Agriculture is in a very influential position. Being the regulator, controlling the policy and procedures, and having links to both national and state forums.

Appendix B has further detail on National Program strategies, the National and State structures and the Program's funding.

Program Funding

The total budget for the National Program is $40.1 million, broadly comprising research and development $10.5 million, operations $25 million (largely surveillance and now transitional arrangements) and management of the National Program $4.6 million.

The funds contributed by the Commonwealth and State Governments, and National and State Industry (collected via levies) are allocated to six sub-programs to reflect national and state responsibilities. For example, the Research and Development sub-program of $10.5 million is funded by the Commonwealth and National Industry.

Because New South Wales has the highest incidence of the disease it makes the highest contribution and receives the most funding from the National Program. Of the $40.1 million national budget, New South Wales contributes $14.6 million or 36 per cent.

New South Wales funding of the Program over the six years 1998-99 to 2003-04 is estimated to be $38.177 million, comprising:

	$ m
NSW Agriculture	
National Program contributions[1]	9.424
Operational Management[2]	11.410
NSW Industry	
National Levies[3]	3.211
State Levies[4]	14.132
	38.177

Notes:

1. includes $2.25 million to supplement producer assistance provided from State levies
2. based on an estimate of annual 'indirect' costs by NSW Agriculture
3. based on the estimated total National Industry contribution to the National Program ($9.175m) by sheep in NSW as a percentage of sheep in Australia (35%)
4. includes $3.8m contribution to the National Program.

State Industry Funding

State industry levies are collected under the *Agricultural Livestock (Disease Control Funding) Act 1998*. An OJD Industry Advisory Committee is established under the Act to advise the Minister. The Committee oversees the financial assistance supported by the levies which assists the development of property disease management plans ($1,000) and the implementation of the management plans (up to $25,000 for producers with flocks of less than 5,000).

In New South Wales the levies are based on sheep numbers or land carrying capacity and collected annually. Other States use transaction based levies.

All sheep producers contribute to an additional national program levy collected by the Sheepmeat Council of Australia.

Operational Aspects of the Program

These include on-farm testing, abattoir surveillance, vaccination and program procedures. **Appendix B** contains more information on these aspects.

Reviews of the OJD Program

The management of OJD has been heavily reviewed at the national and state level.

Two important reviews of the National Program were the Mid-Term Review (May 2001) and a Senate Inquiry (July 2001). They tackled the success of measures, technical issues, finances and the affect on producers.

Both reviews supported the continuation of the National Program to 2004 and included recommendations to improve control measures and financial assistance.

Up until now, there has not been a specific review of NSW Agriculture's role in the implementation of the Program.

The **Bibliography** contains the reviews and related publications.

Audit Plan and Costs

See **Appendix D** for a summary of the audit's plan and costs.

2. Strategic Framework

Risk Management

Significant risks for the strategic direction of animal disease programs are:

- co-ordinating the stakeholders
- balancing technical, producer, social and funding issues
- consideration of options
- impediments to delivery
- balancing expectations of those affected by the disease and those who don't have it.

These risks are managed through program plans and structures.

Business Plan

The NSW OJD Advisory Committee endorsed a Business Plan in March 2000 prepared by the Canberra Institute of Technology. It is a high level plan prepared to support co-ordination and consistency with the National Plan. It does not contain operational detail and omits a budget for NSW activities.

The Business Plan was considered by the Advisory Committee as "a first step towards the future management of OJD in New South Wales, providing the framework by which to guide implementation, management and review of specific strategies."[4]. It identified the need for greater social support and the establishment of a three person secretariat.

The Advisory Committee, however, has not implemented the Business Plan.

Program Strategy for New South Wales

The OJD Program structure in New South Wales does not facilitate industry and government operating and co-operating in a balanced way. This limits direction setting and the monitoring of the Program's performance.

In our view, there is reliance on the broader national plan without effective translation to the situation in New South Wales. Industry and government have not set specific NSW targets and outcomes jointly. This has prevented on-going evaluation of the Program in New South Wales.

An appropriate broad objective for the Program would be to reduce the disease to the lowest possible occurrence, producing only minimal losses and maximising trade. More specific objectives and targets for each of the zones with an emphasis on high risks. Much of this is done but not brought together and articulated in a strategic manner.

Targets are required with a time horizon. For example, 75 per cent of sheep vaccinated in the residual zone in 3 years.

[4] NSW OJD Advisory Committee *Business Plan 1999-2003* March 2000 page B35

Outcomes

The NSW Program is not based on outcomes but focused on inputs and process, such as documenting and recording. Reporting is limited to statistics on the spread of the disease and supporting narrative. No OJD Newsletter has been produced since November 2001, although information on zoning changes has been distributed.

Future non-emergency emergency animal disease programs need to focus more on achieving outcomes after agreeing on specific strategies based on a thorough risk analysis.

Industry needs to be more organised to get in effectively from the start. Divisions in the industry are bad for disease control.

Moving away from a zero risk policy is, however, difficult. The majority of sheep producers in New South Wales, whose flocks are not infected, wish to retain a low risk status.

With both the National and State Programs operating there is now considerable effort being applied to OJD. The elapse of time and the introduction of a vaccine is increasing acceptance of the Program across most segments of the industry.

Advisory Committees

The Advisory Committees find it difficult to give direction to the Program because of the divisions within. But the core of their problems goes to the design of the NSW OJD Program. This exacerbates the concern that the most vocal are not necessarily representative of the majority who remain silent.

Debate in the advisory committees continues on the so-called 'old imponderables': the impact of regulation and the availability of trading pathways.

In addition, the consultative processes have frequently not achieved balance between technical, farm enterprise and social issues. Technical values have a tendency to be depersonalised with emphasis on control, with impacts not readily clarified being discounted.

The Advisory Committee needs to evolve to meet the current demands of the Program.

Program and Governance Structures

There is no definitive point in the OJD Program structure in New South Wales that has responsibility for the Program and is able to undertake strategic evaluation with the joint authority of industry and government.

In contrast, at the national level, the Program Advisory Committee (PAC) has an independent chair. The Committee's role is to review progress against agreed directions and milestones, and to deal with issues arising and decide on future actions. It is limited to ten members. The national Veterinary Committee provides technical advice. The PAC is supported by a secretariat including the National Program Manager and National Operations Co-ordinator. The Program Manager is responsible for the timely implementation of the Program and reporting on progress. The Operations Co-ordinator monitors program delivery by the States and provides technical support.

The national arrangements provide a possible model for a program committee and support structure for New South Wales. Clearer roles and responsibilities should result in more authorative advice and recommendations to the Minister and the National Program on the management and operation of the Program in New South Wales.

Working parties and consultative networks would provide for further input from industry and government. This would include professional assistance from NSW Agriculture.

In the past, NSW Agriculture has sometimes adopted the policy making role because of industry's lack of consensus.

Multiple organisations and management layers add complexity and need to be well co-ordinated. Existing arrangements diminish farmer expectations of fair and equitable service. A revised governance structure would help overcome many of the co-ordination and accountability problems.

Regulatory Approach

Both industry and government support a regulatory approach to contain the spread of the disease. The extent of infection has required extensive government intervention/involvement. However, when properties are declared infected, many producers face limitations on trade.

The initial emphasis on regulation was not well accepted by many affected producers. They become alienated from the Program. In addition, the punitive regulatory measures were not matched with measures to provide adequate and appropriate assistance.

The initial approach did not identify strategies to address both the damage and options available. The Program in New South Wales should have been more comprehensively assessed and acted upon the risks to ensure adequate support for those harmed by the regulatory regime. Counselling and business management advice should have immediately been on hand to complement the regulatory approach.

The Mid-Term Review and the Second Senate Review (both of 2001) shared the opinion that the National and State Programs had not dealt effectively with the issue of financial and other support for those subjected to quarantine and other regulatory action. This deficiency of the National Program was not adequately addressed in the NSW Program.

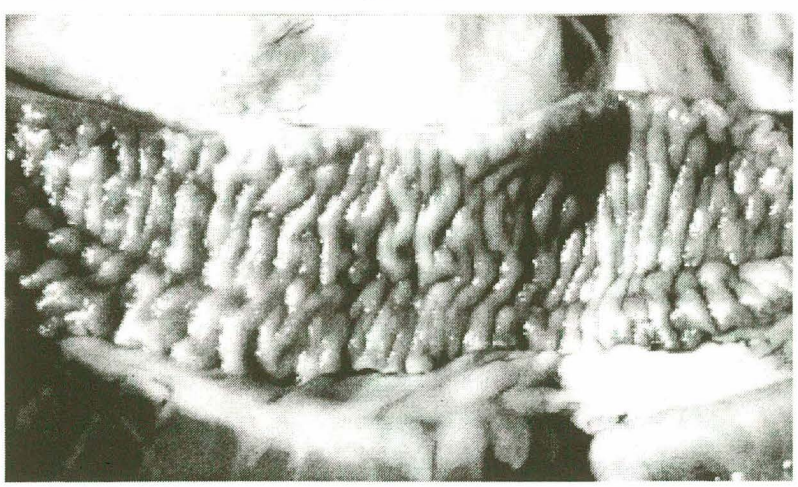
The Mid-Term Review also noted that significant changes to the current "top down" regulatory process were needed to enhance producer confidence.[5]

Producers who identified diseased flocks had their sales stopped, were offered limited assistance. They were left isolated and not involved in developments. District Veterinarians were too busy dealing with incidents of the disease, and lacked support to deal with the business and emotional harm.

Affected producers had few options. De-stocking was of limited success because re-stocking frequently involved the purchase of infected sheep and the significant costs involved. Over-stocking was likely to accentuate any infection. Getting tested was likely to be detrimental to their income. The risk of re-infection from infected neighbours is significant in high prevalence areas.

Regulatory arrangements should encourage rather than discourage producers to participate in the program through compliance and investment in disease reduction and control measures.

Thickened Intestinal Lining Associated with OJD



Source: NSW Agriculture

[5] Animal Health Australia *Mid-Term Review of the National OJD Control and Evaluation Program* May 2001 page 6

Delayed Implementation

New South Wales has been criticised as being slow to implement the Program.

The Mid-Term Review indicated that the National Program budget allocation was underspent due to start up problems. In addition, New South Wales had not availed itself of the resources available for the Program and had under-utilised, or lacked trained, field staff.[6] An indicator of this is NSW's National Program related expenditure over the first two years which was 14 per cent of its total National Program budget.

However, factors contributing to this were:

- the trialling and introduction of a new form of testing for the disease, the Pool Faecal Culture test
- farmers being slow to react to the disease - frequently recognition and acceptance of the disease did not occur until there were significant stock losses.

Financial assistance for producers from the State levies was not available until April 2002. This was five years after the introduction of formal quarantining for OJD in New South Wales and nearly two years following the collection of State levies.

NSW Agriculture was also slow to support trials of vaccination. Some affected farmers in New South Wales were called for its introduction since 1994. The Gudair© vaccine had been used in Spain some ten years prior to its trial in Australia in 1998. There was opposition from industry and government because the vaccine could have compromised existing diagnostic tests.

The appointment of an OJD Welfare Officer in July 2000 was a most necessary step. The Officer provides counselling to affected producers and their families and to Rural Land Protection Boards and NSW Agriculture staff delivering the Program. However, this could have been addressed at a much earlier stage of implementing the Program.

[6] *ibid* pages 34 and 36

3. Implementation Of The Program

Lack of Trust

The Hassall & Associates Report of July 2000 (commissioned by the NSW OJD Industry Advisory Committee) found that affected producers were angry and had lost confidence and trust in the agricultural departments and Rural Land Protection Boards.[7]

The overwhelming problem for the Program has been the impact of restrictions placed on affected farmers. Anecdotal evidence suggests that some producers and stock agents disregard zoning regulations and move sheep across zone boundaries in the belief that such illegal trading will not be detected.

The situation raises tension between those whose flocks are infected or directly at risk of infection and those who are not. The majority of the sheep flocks in New South Wales, in the north and west of the State, are not infected and those producers wish to retain a low risk status. This has resulted in distrust of the Program by producers in southern and central New South Wales. The continued spread of the disease has not lessened the position of those not directly affected.

Financial Impact on Infected Properties

A constant note of disquiet is that significant financial burden is carried by infected properties. Affected producers are required to restrict their trading activities for the overall benefit of the industry in terms of disease spread.

This is a result of limited trading opportunities and limited financial assistance being available. The extent of financial impact is depends on the farm's location and type. Stud farms are the most affected and they are unable to turn easily to other product lines because of heavy investment in their stud enterprise, which is frequently their dominant or only product. The effect on a merino stud can amount to hundreds of thousands of dollars in lost overseas and interstate sales.

Stud producers have been the least responsive to the Program. A proposal for special financial assistance is still under development by the OJD Compensation Stud Taskforce. At present they receive very limited financial assistance relative to their losses.

Hassall & Associates undertook a comparison of the cost of mortalities with the change in farm income before regulation. The study "concluded that the state-wide regulations associated with OJD (zoning, trading restrictions, quarantining etc) ... are principally responsible for financial impacts flowing from OJD." The financial impacts were greater for stud farms.[8]

[7] Hassall & Associates Pty Ltd, *op cit*, pages 28 and 30, and evidence cited in the Senate Rural and Regional Affairs and Transport References Committee *The Incidence of OJD in the Australian Sheep Flock* page 79
[8] *ibid* page 35

The situation is made worse in the infected residual area as trading restrictions have continued for several years.

Alternatively, other estimates show that the cost of the disease, if left unregulated or uncontrolled, would exceed the cost of the Program.

Rural Land Protection Boards

Rural Land Protection Boards (RLPBs) have adopted different tactical approaches to OJD which may reflect their exposure to the disease.

Many boards, like farmers, have been slow to react to the disease. Frequently recognition and acceptance of the disease did not occur until there were significant stock losses.

Boards face difficulties in administering their dual, and sometimes conflicting, responsibilities. The elected boards are responsible to fee-paying members and their staff exercise regulatory functions over members on behalf of NSW Agriculture.

Only since mid-2002 have the Yass, Goulburn and Central Tablelands Boards begun to work towards a unified approach to the disease in the residual zone.

Administration of OJD Levies

The collection process for OJD levies is not attractive to producers. They would prefer a transaction based levy collected at a point of sale rather than an annual charge on their costs of production. However, this is not supported by the Government because of legal advice on constitutional limitations. **Appendix B** provides more information on the basis and nature of the levies.

A further cause for complaint is the cost of collection charged by NSW Agriculture. The cost relative to total collections is 9.8 per cent. This is high when compared to the average cost of collections over total collections of 0.6 per cent achieved by the Commonwealth's Levies and Revenue Service.

Slow payment by producers contributes to the cost of collection. Many pay only after investigations of their circumstances, several follow-up letters and threats of recovery action.

Submissions Made to the Audit

We received a number of submissions, notably from affected producers, that told of harm to business and family, and animosity towards NSW Agriculture.

Managing OJD

The main methods of containing the spread of the disease and providing assurance are outlined in **Appendix C**. These include zoning, surveillance testing, market assurance programs (MAPs), management plans and the use of vaccination.

Abattoir Surveillance: OJD Inspectors at Work

Source: NSW Agriculture

Communication

The policies and procedures for the management of OJD have developed layer upon layer. They are complicated and detract from an understanding of control measures.

"Communication has failed to keep the sheep industry fully briefed on NOJDP processes and outcomes, including information about the disease, which has limited the effectiveness of the Program and led to considerable negative publicity about the NOJDP."[9]

NSW Agriculture documentation includes an OJD Manual, newsletters, surveillance reports and a web information site.

The policies and procedures for the Program are large and complex. They expand the standard definitions and the national Veterinary Committee sets rules for the Program. Rural Land Protection Board District Veterinarians and farmers must make considerable effort to understand and comply with the requirements of the Program. It took an A3 sized sheet containing three detailed flow charts and supporting notes to describe the new zones being introduced on 1 October 2002. The last OJD Newsletter was produced in November 2001.

The complexity of the rules and changes to them support perceptions of inconsistency rather than progress in combating OJD.

[9] Animal Health Australia *op cit* page 10 (NOJDP = National OJD Program)

The level and tone of debate in the rural media indicates that the Program's communications have failed to persuade many affected producers. The warning of civil disobedience in relation to the levy evidenced the extent of distrust over management of the Program by members of the NSW Farmers' Association. It was reported that the Director-General of NSW Agriculture did not attend public meetings because of threats of physical harm.

Impact on Goat Industry

The goat industry has been caught in the middle of the OJD and BJD[10] programs. It further illustrates the OJD Program's complications and slow progress.

The NSW Goat Industry claims that the application of the OJD Program to goats fails to recognise risks and imposes undue costs and restrictions.

The smaller goat population in New South Wales is susceptible to both cattle and sheep strains of Johne's Disease. However, goats appear to be more susceptible to BJD.

A result of the OJD approach is that goats are traded from coastal NSW, a low prevalence zone for both BJD and OJD, to inland NSW where the transmission from goats to sheep is a greater risk.

A revised approach to the movement of goats is now being sponsored by New South Wales at the national level.

Future Developments

Considerable effort is being applied to containing OJD. Much of this is aimed at overcoming operational problems in the infected areas.

The immediate future of the Program is dependent on the success of current initiatives:

- adjustment of zone policies and financial assistance
- wider introduction of the OJD vaccine
- introduction of more market based initiatives, including the use of vendor declarations
- facilitation of groups to help manage OJD, for example, sub-catchment groups.

The introduction of trading pathways or compensation for infected areas and assurance of effective containment are vital for the future of the Program.

A key aspect of its success will be greater recognition of mutual responsibilities for sellers and buyers.

[10] BJD, or Bovine Johne's Disease, is a strain of Johne's Disease that affects mainly cattle, but also alpaca and goats. It is a low prevalence disease in New South Wales.

4. A Framework for Emerging Animal Diseases

Emerging Diseases

OJD is a slowly emerging disease that without control will continue to spread. It is not classified as a national emergency disease, nor is it an established endemic disease. This contributed to the delayed recognition of the extent of the disease and the implementation of a disease program, particularly the availability of financial and welfare assistance.

The OJD Program's failure to fit either emergency or endemic disease control models indicates that the consideration of a third model is required.

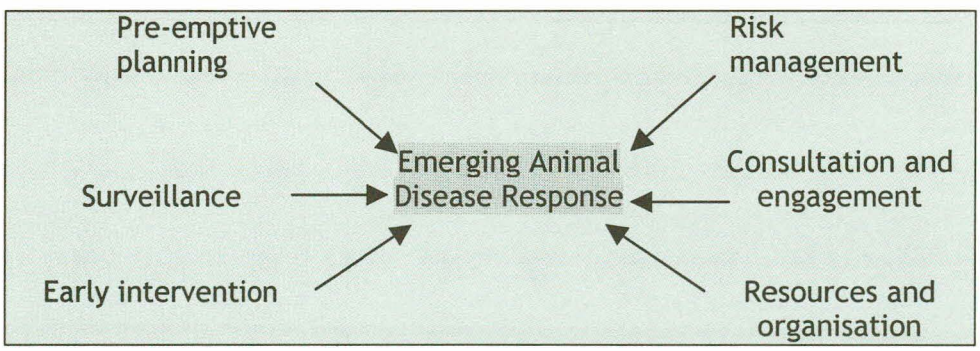
Emerging Animal Disease Framework

The following framework is suggested to improve animal disease planning and management.

It also draws on our earlier audit of May 2002, *NSW Agriculture - Managing Animal Disease Emergencies.*

In most cases diseases are likely to have national implications and require significant industry involvement. Responses are likely to involve both industry and government funding because of the likely benefits to be derived by industry and the public.

Key Elements and Actions in an Emerging Animal Disease Framework



Pre-emptive Planning

- awareness and assessment of diseases
- recognition by industry and government of the potential threats - for example, economic and social
- templates of structures for program direction, management and funding
- clear objectives, targets and outcomes

Early Intervention

- underlying approach encompasses principles of early intervention and preparedness
- actions taken and required articulated in clear and simple messages

Consultation and Direction

- use of advisory committee and working parties
- alignment of activities with strategies
- those reporting a disease to be treated equitably and fairly
- education programs

Surveillance

- capable of detecting and identifying diseases at the earliest possible time
- reporting systems
- diagnostic resources
- awareness of veterinarians and producers
- research and development

Risk Management

- can the disease be contained and eradicated?
- options and residual risks fully considered
- provision of support for those affected by intervention
- effectiveness of available controls
- program and socio-economic costs versus benefits

Resources and Organisation

- quick initiation of resources, structures and funding arrangements
- program secretariat in place for the management and monitoring of the program.

Appendices

Appendix A

BACKGROUND TO THE NATIONAL PROGRAM

Regulation and De-regulation?

The basis of regulation is that continuing spread would mean more harm and increase the costs of on-farm controls. The aim is to minimise both costs and mortalities. Containment is likely to be achieved with some harm to minorities in the interests of the majority.

Without disease regulation, individual producers would have greater responsibility for disease control and its cost. Control of the disease would require widespread commitment by producers to prevent spread because of the difficulty in confining OJD to individual properties. Conversely, the imposition of regulation brings with it the responsibility for government to balance both public and individual rights.

Whatever the approach, they highlight the responsibility of owners to neighbours or buyers. There is frequently a wide-gap between self-interest and the broader interests of the industry.

De-stocking Emphasis

The initial approach for dealing with OJD was eradication through de-stocking. It is a very costly method and its effectiveness remains under investigation.

De-stocking involves the slaughter of flocks, the passing of 15 months, including 2 summers, to cleanse pastures and re-stocking with uninfected sheep. Indications are that de-stocking is more effective in low prevalence areas because of the reduced risk of lateral spread.

Alternatively, the decision to live with and manage the disease means that restrictions on selling animals for re-stocking will remain in force. Management strategies include lambing on less contaminated pastures, mixed grazing strategies, replacing breeder ewes and vaccination.

Early OJD Strategies

During the 1980s and early 1990s the NSW Sheep Industry and NSW Agriculture maintained a low profile surveillance and advice strategy.

In 1995 concerns about the effects of the disease led to the formation of the Johne's Disease Sheep Industry Steering Committee. The Committee included NSW sheep industry representatives, and also representation from NSW Agriculture and the RLPBs, the Victorian Farmers' Federation and national sheep bodies.

In August 1996 the Steering Committee produced a NSW Sheep Johne's Disease Strategic Plan. Stage 1 would confirm the spread of the disease and Stage 2 would pursue eradication if practicable.

The Steering Committee believed that the best mechanism for the implementation for the Strategic Plan was the establishment of a National Program. The Plan indicated that financial assistance would not be made as compensation to affected producers for losses experienced as a result of the disease. When making financial assistance, affected producers should not be financially disadvantaged by adoption of eradication programs undertaken in the interests of the majority of sheep producers.

Emerging National Focus

In 1997 the Australian Animal Health Council (now called Animal Health Australia) and national and state organisations developed a proposal for a nationally funded program. However, it was not supported because of concerns over compensation, funding and the extent of spread of OJD.

This led in early 1998 to the Commonwealth sponsoring an inquiry resulting in the Hussey-Morris Report. The peak government and industry bodies accepted the recommendations of the Report. The Report concluded that greater knowledge of the disease was required and that in the interim the spread of the disease should be minimised.

An Interim Surveillance and Research Program was conducted between April and September 1998 at a cost of $2.5 million. Its aim was to investigate the extent of the disease in New South Wales and identify control issues. During the Interim Program the National OJD Program Agreement was prepared.

Appendix B

FURTHER DETAILS OF THE NATIONAL PROGRAM

National Program's Sub-Programs

The National OJD Program Agreement, which runs to June 2004, has two purposes:

1. research and evaluation in support of eradication
2. control to minimise the disease's spread.

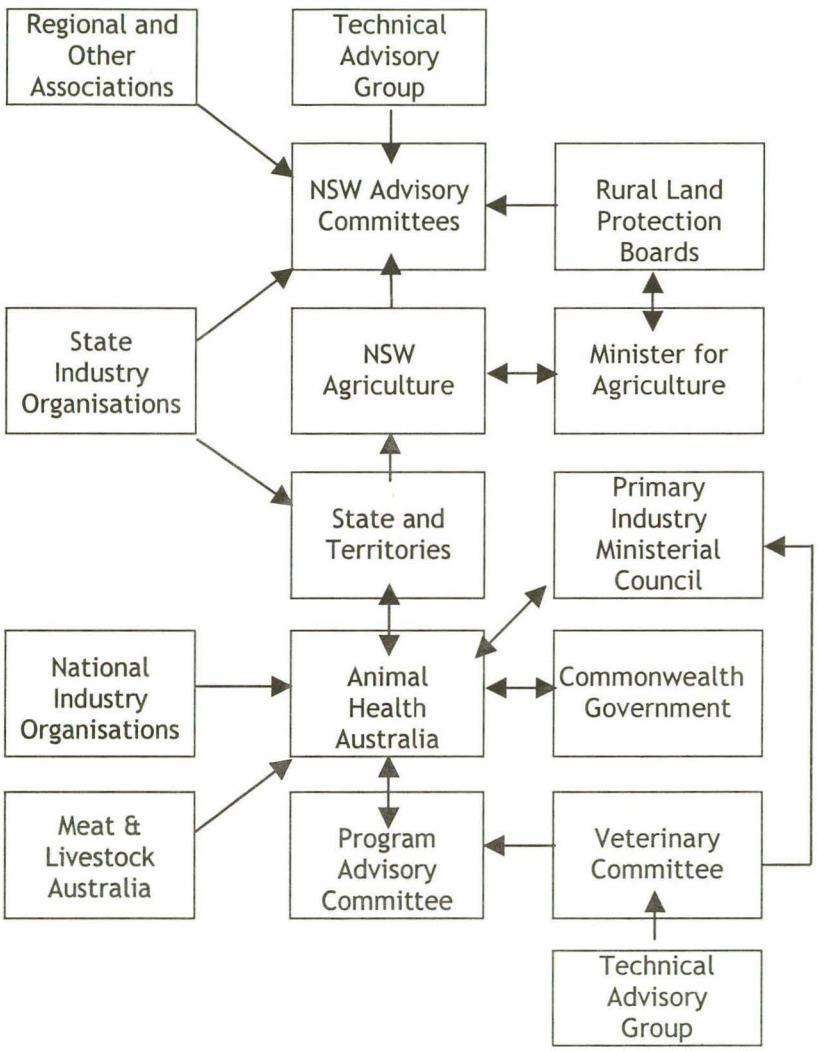
These aims are achieved via six sub-programs:

- Research and Development - The focus of further research is to enhance the diagnosis and management of the disease, including improved diagnostic tests and vaccine, and better understanding of the survival of disease in the environment and individual sheep. Australia is at the forefront of OJD research. Research and development is controlled by Animal Health Australia and largely funded by the Commonwealth and National Industry.
- Surveillance - Supports the collection of information on the distribution and prevalence of the disease, and is focusing on low risk areas and infected flocks. Funding is 35 per cent by the Commonwealth and National Industry, and 65 per cent by the States and State Industry.
- Communications - To deliver co-ordinated and effective information to all stakeholders. Funding is 50 per cent National Industry and 50 per cent States.
- Management - Provision of structural arrangements to ensure cost-effective management and co-ordination. The Commonwealth, National Industry and States share cost of national management activities equally. State co-ordination is funded entirely by the States.
- Control - Delivers strategies to achieve disease control, including zoning and on-farm and group strategies. 75 per cent of funding is from State and State Industry. The disease control practices are now consistent with international best practice.
- Transitional - This new sub-program for the last two years of the Program is aimed at assisting producers to maintain their normal trading activities. It will support on-farm testing and disease management planning. Funds are sourced from under spending in other sub-programs and additional minor funding to support on-farm testing.

Stakeholders at the National and State Levels

The program structure presents significant co-ordination challenges, as there are many stakeholders at both the national and state levels. The following diagram illustrates the Program's main stakeholders and their relationships.

OJD Program Stakeholders



Within NSW Agriculture the responsibility for the OJD Program is with the Program Manager, Wool and Sheepmeat Services, who is based in Orange. The Program Leader OJD is located in Wagga Wagga. The National Program directly funds the position.

State Industry Levies

NSW Agriculture supports a transaction based levy for OJD because of constitutional limitations and possible challenge in the courts. However, transaction based levy systems are used by Victoria, South Australia and Western Australia for OJD purposes.

There are two OJD levies in New South Wales. Voluntary contributions vary between $100 and $350 depending on sheep numbers. The compulsory levy is based on the property's carrying capacity, generally a greater amount than the voluntary contribution. Sheep producers with flocks greater than 50 animals and who choose not to make the voluntary contribution are charged the compulsory levy. It is an expensive scheme to administer.

During 2000-01, 96 per cent of sheep producers paid the then flat voluntary levy of $100.

It is expected that, between 2000-01 and 2004-05, $11.7 million will be raised through the voluntary levy and $2.4 million via the compulsory fund.

Testing and Surveillance

Testing is an indicator of disease status at a point in time. It assists the on-going flock and farm management required to contain infection.

Faeces and intestine samples are taken at farms and abattoirs. Diagnostic tests are then conducted at NSW Agriculture laboratories.

Abattoir surveillance, a National Program initiative since November 1999, is improving knowledge of the incidence of the disease.

Flock testing and abattoir surveillance provide important information about the spread of OJD, but only to the extent that it occurred several years earlier.

Vaccination

Vaccination against the disease is used overseas and is being supported by the National Program.

Research and trials in New South Wales are indicating that vaccination is likely to minimise infection rates. It is most successful when used with testing and management strategies.

Program Rules

Consistency across the National Program is sought through the use of Standard Definitions and Rules (SDRs) maintained by the national Veterinary Committee. They include the criteria for movement between OJD zones and the basis for assurance programs. NSW Agriculture translates and extends the SDRs through the OJD Policy Manual.

Appendix C

IMPLEMENTING DISEASE CONTROLS

Managing OJD

Outlined below are the main methods used to contain the spread of the disease and provide assurance about the distribution of the disease. They rely on implementation by the States.

Zones

Zoning for OJD commenced in July 1999. There are four types of zones: free, protected, control and residual. Free, protected and control zones require on-going surveillance to maintain their status. The only free zone is Western Australia. Movements from zones of high incidence to zones of lower prevalence are controlled according to risk of infection assessed by testing. Greater restrictions are placed on the movement of sheep from known, or suspected infected flocks. In control and residual zones movements of sheep from all flocks is more severely restricted, however, testing and vaccination is now providing additional trading opportunities.

On balance, the level of support for zoning is increasing. More farmers are co-operating as they see advantages of the Program, largely driven by the availability of vaccine.

A third zone, the control zone, was introduced in New South Wales on 1 October 2002. It provides a buffer around a slightly increased residual zone. The introduction of the control zone is recognition of the disease's spread. (See the map on page 8 of zone boundaries introduced in October 2002.)

NSW Flocks Infected by Zone

	Infected Flocks	Flocks in NSW
Residual	70%	16.6%
Control	28%	28.0%
Protected	2%	55.4%

Source: NSW Agriculture *OJD Quarterly Disease Surveillance Report* July-September 2002

It is proposed that the residual zone become a management zone. All sheep producers in the management zone would have the same 'infected' status and be able to trade more freely within the zone. The proposal is also aimed at increasing the use of vaccination and testing to provide greater trading opportunities outside the management zone.

Testing and Surveillance

Flock testing is conducted for three purposes:

- surveillance
- market assurance
- diagnosis of suspect infection.

Testing of flocks is biased towards adult sheep which are most likely to be infected. Results of tests, combined with management regimes, can be used to provide a higher level of assurance under the market assurance program.

Some producers are reluctant to conduct tests due to the fear of disease detection and consequent quarantine restrictions that impact negatively on farm income. A further factor has been the number of infected sheep identified in the market assurance program. A breakdown of 25 per cent in monitored negative flocks in the residual zone has been demonstrated. (See next section on the market assurance program.)

The best available test is the Pooled Faecal Culture (PFC) test, and like all laboratory tests, its sensitivity varies with disease prevalence. Samples of between 50 to 350 are taken depending on the size of flocks. While an improvement over alternatives, PFC is slow. It is less costly than other tests. The PFC test for OJD was developed at NSW Agriculture's Camden laboratory.

Between April 2000 and September 2002, 2,161 flock investigations were submitted to NSW Agriculture laboratories. On average 15 per cent were positive. The submissions contained 473,000 faeces samples.[11]

Flock surveillance testing is largely funded through the National Program. The testing accounts for 18 per cent of NSW Agriculture's veterinary laboratory revenue. The OJD Program is a significant help in maintaining laboratories' processing capacity. This capacity is particularly important when dealing with the outbreak of an exotic disease.

Market Assurance

The OJD Market Assurance Program (MAP) or SheepMAP is a voluntary program for producers, to identify and promote their negative OJD status to clients. Flocks in MAP are not accredited as free of OJD, but have a lower risk of being infected compared to non-assessed flocks in the same area. MAP was introduced in mid-1997. Studs farms are the main users. Costs of enrolling in the assurance program can be up to $5,000.

The level of assurance provided under MAP depends on the number of sheep tested and period of testing. There are three levels of Monitored Negative or MN. As of 30 September 2002, only 17 properties in New South Wales had reached MN3 (the highest level). MN1 had recorded 155 properties and MN2 112 properties.[12]

Abattoir Surveillance

Abattoir surveillance has been running in New South Wales since the end of November 1999. It is resulting in a more accurate picture of the prevalence and distribution of the disease.

Monitoring occurs at 11 abattoirs across New South Wales. It is estimated that 80 per cent of adult sheep killed in New South Wales are being sampled. For example, during July-September 2002 2,738 lines comprising 924,350 sheep were sampled, and samples of intestine from 315 of those lines sent for laboratory diagnosis.[13]

[11] NSW Agriculture *OJD in NSW: Quarterly Surveillance Report July-September 2002* page 9
[12] *ibid* page 10
[13] *ibid* page 11

Only positive results of abattoir testing are forwarded to producers. The scheme would provide greater assurance if both negative and positive results were provided to producers.

The effectiveness or sensitivity of abattoir surveillance to detect OJD is being evaluated. It is considered to be less sensitive in low prevalence disease conditions.

The tracing of abattoir detected sheep should improve in the coming years with the introduction of flock identification.

Flock Identification

Generally, animals should not be sold without some form of identification and documentation.

The introduction of the National Flock Identification Scheme (NFIS) will provide a more effective monitoring of movements.

The Scheme is voluntary and success will depend on its widespread acceptance. The NFIS will identify sheep and lambs by an ear tag with the property identification number printed on it. It is supported by a vendor declaration form to accompany the flock, detailing the property of birth and, if required the last property of residency. Birth tags will be of a 'colour of the year'. Sheep moving to a new property will have a pink identification tag.

In addition to the NFIS ear tag, vaccinated flocks must also be accompanied by Animal Health Statements and be identified by a 3-hole ear punch.

Movement of Sheep

Saleyards and transporters have responsibilities to handle flock dependent on their OJD status. This involves using allocated areas at saleyards and cleaning trucks before and after transporting stock. Sheep shows and exhibitions have similar preventative requirements.

Property Disease Management Strategies

On-farm approaches are supported by property disease eradication or management plans, which are approved by an approved veterinarian.

Decisions on management strategies will be influenced by such factors as:

- zone status and extent of disease
- availability of financial assistance
- status of neighbours
- source of replacement stock
- use of vaccination
- quality of farm management practices and infrastructure.

There have been 548 property disease management and eradication plans approved to September 2002. 197 plans were approved during July-September 2002, 93 per cent of these were management plans.[14]

[14] *ibid* page 10

Vaccination

Vaccination has the potential to help the producer to better manage risks and to facilitate trade.

Vaccination will not stop infection but should lessen mortalities and pasture contamination. Research indicates that the vaccine delays and restricts the shedding of bacteria in about 90 per cent of sheep injected.

The vaccine's use is currently restricted to the residual zone or properties elsewhere declared infected or at risk of being infected.

To be successful in the residual zone it is likely that at least 3 generations of lambs will need to be vaccinated. This will require the continuation of an active program for some 20 years. Experience in Iceland indicates that control through vaccination will require a protracted campaign because of re-occurrence.

A new market assurance scheme incorporating the use of vaccination is being introduced to facilitate trade and support the greater use of vaccination in infected areas.

There is some concern about whether the vaccine will mask low levels of infection, under current flock test sampling procedures, thus unwittingly leading to disease transmission to uninfected flocks. This is being investigated. There is also some concern that trade in vaccinated sheep from high incidence areas not subject to on-going testing will lead to an increase in the spread of the disease.

Epidemiological studies of August 2002 project, based on a 1 per cent infection rate in flocks, that vaccination, both with and without testing, will support trading with very low incidences of OJD resulting. It is indication that vaccination and epidemiology is opening up the acceptable risk trading debate.

Appendix D

AUDIT PLAN

This audit complemented our May 2002 Performance Audit Report: *NSW Agriculture - Managing Animal Disease Emergencies*.

Audit Objective

The audit assessed the efficiency and effectiveness of NSW Agriculture's management of the OJD Program.

Audit Focus and Scope

The audit focus was the non-emergency animal disease regulatory and extension activities of NSW Agriculture.

The audit's scope is the Ovine Johne's Disease Program.

Audit Criteria

The following criteria were applied to the assessment of the management of the Program, whether:

- strategic planning is based on comprehensive risk assessment and consultation with stakeholders, and is consistent with legislation and policies
- surveillance and control activities are co-ordinated to achieve the best use of resources and the Program's objectives
- monitoring and evaluation keeps the Program on target.

Audit Approach

The aims were to gain an understanding of the Program's management and the technical and industry issues. It included:

- a case study approach to the analysis of the OJD Program and its management
- on-going consultation with key program personnel in NSW Agriculture and review of documentation
- review of national and state reports on the management of the disease
- consultation with a wide range of OJD stakeholders, including delivery agencies and veterinarians, advisory committees, producers, industry associations, academics and Members of Parliament.

Audit Team

Chris Bowdler and Stephen Horne.

Acknowledgements

We gratefully acknowledge the co-operation and assistance provided by NSW Agriculture, particularly staff of the Division of Animal Industries.

We also gratefully acknowledge the time and effort taken by many producers, members and staff of the OJD advisory committees and the Rural Land Protection Boards, who were frank and forthcoming.

In addition, a number of organisations must be acknowledged for their valuable assistance: Commonwealth Department of Agriculture, Fisheries and Forestry, Animal Health Australia, NSW Farmers' Association, Sheepmeat Council of Australia, Sydney University School of Veterinary Science and Meat & Livestock Australia.

Costs of the Audit

The cost of the audit was $169,000. This includes report printing of around $5,500.

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Performance Audits By The Audit Office Of New South Wales

Performance Auditing

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Performance audits are reviews designed to determine how efficiently and effectively an agency is carrying out its functions.

Performance audits may review a government program, all or part of a government agency or consider particular issues which affect the whole public sector.

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Performance audits provide independent assurance to Parliament and the public that government funds are being spent efficiently and effectively, and in accordance with the law.

They seek to improve the efficiency and effectiveness of government agencies and ensure that the community receives value for money from government services.

Performance audits also assist the accountability process by holding agencies accountable for their performance.

What is the legislative basis for Performance Audits?

The legislative basis for performance audits is contained within the *Public Finance and Audit Act 1983, Part 3 Division 2A,* (the Act) which differentiates such work from the Office's financial statements audit function.

Performance audits are not entitled to question the merits of policy objectives of the Government.

Who conducts performance audits?

Performance audits are conducted by specialist performance auditors who are drawn from a wide range of professional disciplines.

How do we choose our topics?

Topics for a performance audits are chosen from a variety of sources including:

- our own research on emerging issues
- suggestions from Parliamentarians, agency Chief Executive Officers (CEO) and members of the public
- complaints about waste of public money
- referrals from Parliament.

Each potential audit topic is considered and evaluated in terms of possible benefits including cost savings, impact and improvements in public administration.

The Audit Office has no jurisdiction over local government and cannot review issues relating to council activities.

If you wish to find out what performance audits are currently in progress just visit our website at www.audit@nsw.gov.au.

How do we conduct performance audits?

Performance audits are conducted in compliance with relevant Australian standards for performance auditing and our procedures are certified under international quality standard ISO 9001.

Our policy is to conduct these audits on a "no surprise" basis.

Operational managers, and where necessary executive officers, are informed of the progress with the audit on a continuous basis.

What are the phases in performance auditing?

Performance audits have three key phases: planning, fieldwork and report writing.

During the planning phase, the audit team will develop audit criteria and define the audit field work.

At the completion of field work an exit interview is held with agency management to discuss all significant matters arising out of the audit. The basis for the exit interview is generally a draft performance audit report.

The exit interview serves to ensure that facts presented in the report are accurate and that recommendations are appropriate. Following the exit interview, a formal draft report is provided to the CEO for comment. The relevant Minister is also provided with a copy of the draft report. The final report, which is tabled in Parliament, includes any comment made by the CEO on the conclusion and the recommendations of the audit.

Depending on the scope of an audit, performance audits can take from several months to a year to complete.

Copies of our performance audit reports can be obtained from our website or by contacting our publications unit.

How do we measure an agency's performance?

During the planning stage of an audit the team develops the audit criteria. These are standards of performance against which an agency is assessed. Criteria may be based on government targets or benchmarks, comparative data, published guidelines, agencies corporate objectives or examples of best practice.

Performance audits look at:

- processes
- results
- costs
- due process and accountability.

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Every few years we conduct a follow-up audit of past performance audit reports. These follow-up audits look at the extent to which recommendations have been implemented and whether problems have been addressed.

The Public Accounts Committee (PAC) may also conduct reviews or hold inquiries into matters raised in performance audit reports.

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To assist agencies to monitor and report on the implementation of recommendations, the Audit Office has prepared a Guide for that purpose. The Guide, *Monitoring and Reporting on Performance Audits Recommendations*, is on the Internet at www.audit.nsw.gov.au/guides-bp/bpglist.htm

Who audits the auditors?

Our performance audits are subject to internal and external quality reviews against relevant Australian and international standards.

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Who pays for performance audits?

No fee is charged for performance audits. Our performance audit services are funded by the NSW Parliament and from internal sources.

For further information relating to performance auditing contact:

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96	NSW Agriculture	*Managing Animal Disease Emergencies*	8 May 2002
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106	State Rail Authority	*CityRail Passenger Security*	12 February 2003
107	NSW Agriculture	*Implementing the Ovine Johne's Disease Program*	February 2003

* Better Practice Guides

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