

Government strategic framework for the sustainable control of bovine tuberculosis (bTB) in Great Britain

a sub-strategy of the Animal Health and Welfare
Strategy for Great Britain



Llywodraeth Cynulliad Cymru
Welsh Assembly Government



SCOTTISH EXECUTIVE



defra

Department for Environment
Food and Rural Affairs

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SW1A 2XX
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Published by the Department for Environment, Food and Rural Affairs. Printed in the UK, February 2005, on material containing 80% post-consumer waste and 20% Elemental Chlorine Free pulp.

Product code PB 10528

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Foreword



Margaret Beckett

This strategic framework for the control of bovine tuberculosis (bTB) has been developed for Great Britain recognising the land borders shared by England with Scotland and Wales. I am delighted that Ross and Carwyn are joining me in welcoming the launch of this important document which sets out a 10 year strategic framework for the control of the disease in cattle and farmed deer within Great Britain.

Bovine TB continues to be one of the most difficult animal health problems that we face. The Government has a role in leading and facilitating the changes required to reverse the long-term upward disease trend, but we can only move forward on a partnership basis. The farming industry must play their part, recognising the benefits to them of reduced disease incidence.

The aim of the framework is to develop a new partnership, applying the principles of the Animal Health and Welfare Strategy so that Government and stakeholders can work together constructively to reduce the economic impact of bTB and maintain public health protection and animal health and welfare.

This framework will ensure we have a good mechanism for co-ordinating our approaches to bTB in England, Scotland and Wales. It will also develop a regional approach, to recognise differences in disease incidence within the countries in GB so we can slow down and prevent the geographic spread of bTB to areas currently free of the disease, and achieve a sustained reduction in disease incidence in cattle in high incidence areas.

A key issue for Government has been to clarify the potential role of badgers and other wildlife in the spread of bTB in cattle and, with stakeholders, to devise management strategies. This is scientifically challenging and is an area where stakeholders hold strongly contending views. This document takes this issue forward by defining a transparent process for making decisions on whether badger culling may form part of future policy, in light of the results of the Randomised Badger Culling Trial and other relevant evidence including the results from the Republic of Ireland 'Four-areas Trial'. The Irish results add important evidence to the scientific position. Our analysis of the Irish trials and data from our own trials will help inform our policy. It is worth noting, however, that the Irish study describes the proactive culling used as *"not a viable strategy for the long term control of TB in the Irish cattle population."* The Irish Government has announced it intends to continue to pursue vaccination research and limited reactive badger culling in response to cattle TB.

I am encouraged by the extensive consultation involved in development of this strategic framework, including a core stakeholder group, comprising a small number of experts representing a wide range of views. This has helped Defra, the Welsh Assembly Government and the Scottish Executive to give appropriate weight and balance to the range of views expressed during the consultation.

A handwritten signature in black ink that reads "Margaret Beckett".

MARGARET BECKETT

Secretary of State for Environment, Food and Rural Affairs
Department for Environment, Food and Rural Affairs



Carwyn Jones

I welcome the launch of this strategic framework for the control of bovine TB in Great Britain. This strategy is complementary to the Animal Health and Welfare Strategy and the Assembly Government's strategy on Farming for the Future, in support of a sustainable environment.

I am grateful to farmers, animal welfare organisations, vets and others who have contributed constructively to the consultation process. Several successful meetings across Wales were held as part of this process. The main message from respondents highlighted the importance of protecting areas of low incidence of bovine TB and reducing incidence of disease in high incidence areas. It was acknowledged that a positive partnership approach is key to implementing the strategy and reversing the long-term disease trends.

The strategy builds upon the current '5 point plan' for tackling the disease, but recognises differences in risks and disease incidence in different regions within Great Britain. Delivering this strategy in Wales requires an approach that meets our particular needs. I have already responded positively to the recommendations of the Assembly's Environment, Planning and Countryside Committee's report on bovine tuberculosis in Wales by setting up a TB Action Group. The Group is enthusiastic and keen to press ahead with the challenges.

The increasing incidence of bovine TB has resulted in significant and increasing financial costs for both industry and Government. However, in line with the principles of the Animal Health and Welfare Strategy, it is not for Government alone to incur all the costs of implementing this strategy and tackling this disease. Farmers will benefit from the introduction of measures to reduce the spread of disease and so should share the overall costs.

My prime concern is to introduce measures that are practical, proportional and sustainable and I look forward to partnership working to achieve the long-term aims of this strategic framework for the control of bovine TB, which demands commitment, compromise and co-operation from all those involved.



CARWYN JONES
Minister for Environment, Planning and Countryside
Welsh Assembly Government



Ross Finnie

One of the major themes of the implementation in Scotland of the Animal Health and Welfare Strategy for Great Britain is the principle that prevention is better than cure. The Scottish livestock industry, working with the Scottish Executive, can make a real impact by raising animal health and welfare standards and consequently minimising the potential economic impact of TB outbreaks on farm businesses.

The development of a framework strategy for dealing with TB in cattle in Great Britain over the next 10 years is a welcome addition to the measures currently available to address this important disease. Our priority in Scotland, where TB breakdowns most commonly result from imported animals, is to keep bovine TB out. In working towards this we aim to minimise the number of new TB outbreaks in the short term, and to work in the longer term to reduce significantly, or even eradicate, the disease from Scotland.

Farmers should know the risks involved in buying new stock and also be aware of and implement improved biosecurity measures which would help to control, or keep TB out. Isolation from other stock on the farm when brought on and strict observance of timeous TB testing requirements play an important part in our defences. These, again, are key preventative measures, preferable to expensive cures.

At present the regional nature of the disease is very evident and the TB framework for the longer term facilitates regional approaches to specific regional issues. Whilst a number of the framework options will be irrelevant to the current disease situation in Scotland they provide the means to adapt to any future change of disease incidence.

I am, however, determined to ensure that a significant bovine TB problem does not develop in Scotland and this framework strategy, along with the short-term measures announced late last year, gives us the means to seek to achieve this. I am hopeful that new arrangements to test animals before they move from high TB incidence areas will reduce greatly the possibility of incursions of disease into Scotland. However, we can do more, and that is why I am introducing post-movement testing of cattle from high incidence areas after they arrive on Scottish farms.

Finally, I would like to acknowledge the valuable contribution to this issue made by stakeholders in Scotland. They have made informed, constructive inputs to the debate, both in response to consultations and as members of working groups. I look forward to the development and implementation of the policies necessary to overcome this serious threat to animal health and welfare. In the spirit of the Animal Health and Welfare Strategy, my Department will continue to work in partnership with all organisations with an interest in defeating bovine TB.

A handwritten signature in black ink, appearing to read 'Ross Finnie'.

ROSS FINNIE MSP
Minister for Environment and Rural Development
Scottish Executive

Executive Summary

The Government announced a review of its strategy for bovine tuberculosis (bTB) at the 2003 National Farmers Union AGM. A detailed consultation document '*Preparing for a new GB Strategy on bovine tuberculosis*' was published in February 2004 which opened the debate on the issues to be addressed in the new strategy and also set out the Government's plans for action in the short-term to tackle the spread of the disease.

This document is the outcome of that review. It sets out a ten-year Government strategic framework for the control of bTB in cattle and farmed deer within Great Britain. It is relevant to bTB in wildlife and other farmed animals only in so far as they pose a risk to cattle. It does not seek to define specific disease control policies, as different regional approaches will be required according to disease incidence and risk in particular areas of GB, though the cattle test and slaughter scheme will remain central to controlling the disease. New policies are dependent on scientific developments, including evidence on the effectiveness of badger culling and the value of the gamma interferon diagnostic test for example.

The significance to Great Britain of the results from the Four Areas Badger Culling Study in the Republic of Ireland is being considered. The treatments in the Randomised Badger Culling Trial (RBCT) are scheduled by the Independent Scientific Group (ISG) to be completed by the end of November 2005, with some surveying work continuing into 2006. The ISG will present its initial findings (the headline figure of the influence of proactive culling on the number of TB breakdowns in cattle) to Defra in spring 2006. This will trigger their initial policy analysis. The ISG will present its final report, including more detailed and further analyses, to Ministers in early 2007.

The consultation highlighted that disease control priorities of stakeholders differed according to incidence of disease in that particular country or region of it. Given this, there is a need to move towards tailoring policy solutions according to the disease risk.

Government is committed to action to control bTB. The short-term measures consulted on in February 2004 have been rolled out from autumn 2004 and aim to improve the effectiveness of cattle surveillance testing. Separately, an independently chaired stakeholder group has been developing a detailed proposal for a new statutory requirement for pre-movement testing of cattle (on the basis that costs would be shared with farmers) to reduce the risk of spread of disease through cattle movements. A separate stakeholder group is developing a proposal for post-movement testing, which it is intended will be introduced in Scotland in addition to pre-movement testing.

The strategic framework builds on and replaces the 5-point plan of action and applies the principles of the Animal Health and Welfare Strategy to bovine TB (Chapter 1). It sets out a vision for the future, defines strategic goals, new commitments, and the principles that will be applied in order to achieve these (Chapter 2).

Overall vision:

To develop a new partnership based on the Animal Health and Welfare Strategy so that Government and stakeholders can work together to reduce the economic impact of bTB and maintain public health protection and animal health and welfare. We aim to slow down and prevent the geographic spread of bTB to areas currently free of the disease, and achieve a sustained reduction in disease incidence in cattle in high incidence areas.

This document has been developed in consultation with stakeholders. A small core stakeholder group has helped steer the development of a strategic framework that gives appropriate weight and balance to the contending stakeholder views. Part of the challenge in tackling bTB is securing a common understanding of roles and responsibilities within the stakeholder community. The roles and responsibilities of the different groups are defined in Chapter 3, which also sets out the disease trends and forecasts and goes on to seek to define the scope for action on bTB. This highlights amongst other things, the degree of scientific uncertainty around bTB controls and societal concerns about wildlife management.

Chapter 4 sets out in more detail how the vision will be delivered and clarifies the reasons for Government intervention. An important aspect of delivering the vision is having a process for arriving at policy decisions in light of the results of the RBCT and any other evidence in relation to badger culling. The case is made for moving towards more regionally tailored policies. These will be defined and developed further under the auspices of this strategy document. Plans are set out for a new national TB advisory group and an annual conference for stakeholders, to replace and build on the work of the TB Forum. The core stakeholder group has agreed to continue to meet to help develop this new advisory group. Recognising the importance of developing a sound scientific evidence base on bTB, new arrangements for securing independent scientific advice are also proposed.

The need to ensure that costs are shared fairly between beneficiaries is a key strand of the Animal Health and Welfare Strategy. This is explored in relation to bTB in Chapter 4, which concludes that there is a strong case for industry, over time, bearing a progressively greater share of the costs of bTB controls.

As part of our review, Government commissioned a report summarising for the lay-reader the current scientific evidence base on bTB. This is published alongside the strategy and is on Defra's website (www.defra.gov.uk/animalh/tb/index.htm).

1. Introduction

1.1 Purpose

1.1.1 Bovine TB is one of the most difficult animal health problems that the farming industry faces in GB today. The scale of the challenge facing both Government and industry in seeking to reverse the long-term upward disease trend is significant. The Government recognises it has a role in leading and facilitating the changes required to make this happen.

1.1.2 In February 2003 Government announced its intention to review its TB strategy. In February 2004 Defra, the Scottish Executive and the Welsh Assembly Government launched separate but parallel consultation documents, 'Preparing for a new GB strategy on bovine tuberculosis' (ref PB 9066: www.defra.gov.uk/animalh/tb/index.htm).

1.1.3 This strategic framework, developed in line with the Animal Health and Welfare Strategy (AHWS) is the outcome of this review. It replaces the 5-point plan of action for bovine TB launched in 1998 as a result of the publication in 1997 of the report 'Bovine Tuberculosis in Cattle and Badgers' by Professor Sir John Krebs FRS and the Independent Scientific Review Group (the Krebs report).

1.1.4 The Department for Environment, Food and Rural Affairs, the Scottish Executive and the Welsh Assembly Government have worked closely with stakeholders over the past year to develop the strategic framework. It has been developed following extensive consultations, including regional and national workshops and a TB Strategy Development Core Stakeholder Group.

1.1.5 Throughout this document the use of 'Government' or 'we' refers to the UK Government and the devolved administrations in Scotland and Wales. A separate strategy is being developed in Northern Ireland.

1.2 Building on the 5-point plan of action

1.2.1 In response to the publication of the Krebs report, the Government in 1998 set out the following 5-point plan of action:

1. Public health protection measures including milk heat treatment, meat inspection at abattoirs and improved liaison with the Department of Health to monitor the incidence of *Mycobacterium bovis* (*M. bovis*) infection in humans.
2. Research to develop an *M. bovis* TB vaccine.
3. Other research to improve knowledge of the disease and its transmission to and between cattle and other species.
4. Continued regular testing of cattle herds for TB and slaughter of suspect animals, and where possible strengthening of these controls.
5. A randomised badger culling trial (RBCT) to test the effectiveness of badger culling in reducing TB in cattle.

1.2.2 In February 1998 the Independent Scientific Group (ISG) on Cattle TB was set up to advise on implementation of the Krebs report. Reports of the ISG can be found on Defra's website (www.defra.gov.uk/animalh/tb/isg/) The Terms of Reference given to the Group were:

'To advise Ministers on implementation of the Krebs report on bovine TB in cattle and badgers by:

- *overseeing the design and analysis of the RBCT to test the effectiveness of badger culling as a means of controlling bovine TB;*
- *regularly monitoring progress and outputs from the trial and assessing any important differences in results between treatments;*
- *monitoring data on the M.bovis situation in areas and species outside the trial;*
- *reporting to Ministers on progress;*
- *advising, as requested, on related issues.'*

1.2.3 Reports of action taken under each of the 5-points is set out in the 2004 consultation document, *'Preparing for a new GB strategy on bovine TB'* (www.defra.gov.uk/animalh/tb/index.htm).

1.2.4 As well as opening debate on the review of the TB strategy, in *'Preparing for a new GB strategy on bovine TB'*, Government recognised the need for short-term action to tackle the spread of bTB. In November 2004 Government announced the roll-out of a number of cattle based measures to tighten surveillance and reduce the risk of TB spreading to new areas. These measures comprise:

- a recalculation of routine testing intervals to ensure TB testing complies with EU legislation while offering robust protection. This will be reviewed annually;
- livestock movement restrictions to be imposed immediately a herd's routine test becomes overdue;
- a more rigorous and systematic approach to identifying and dealing with potential new TB hotspots in England and Wales; and
- the introduction of rigorous testing schedules for new and re-formed herds.

1.2.5 A leaflet detailing these changes went to all cattle farmers.

1.2.6 The consultation document also set out options for action to reduce the risk of spread of disease through cattle movements, one of which was the introduction of pre-movement testing. An independently chaired stakeholder group (a sub-group of the TB strategy development core stakeholder group) has therefore been set up to develop a detailed proposal for a new statutory requirement for **pre-movement testing in GB** (on the basis that costs would be shared with farmers). While our intention to introduce pre-movement testing is clear, there will be further consultation on the details, including the draft legislation that will be needed to implement it. A separate stakeholder group has been established in Scotland to develop proposals for **post-movement testing**, in addition to pre-movement testing.

1.2.7 All of the 5 points set out in 1998 have been reviewed with stakeholders and are believed to remain valid in tackling the disease. These can be built on, using emerging evidence to develop policy options and awaiting the final analysis on the RBCT, which is expected to be presented to Ministers by early 2007. However, despite the introduction of the 5-point plan of action, the incidence and spread of bTB across GB and associated costs to taxpayers and industry continue to increase. This framework sets goals in relation to control of the disease. It also aims to improve stakeholder buy-in, encourage a shared vision and ownership of the problems, and develop clear governance arrangements.

1.3 Guiding principles

1.3.1 Government's overall approach to bTB is guided by Government policy on sustainable development, and under that umbrella, strategies to support a sustainable agriculture sector, and the vision and strategic outcomes detailed in the AHWS for GB.

1.3.2 Government is committed to establishing stronger **partnership** working with key stakeholders on bTB. It is important to recognise the strength of views of stakeholder groups, including those farmers in areas of GB which currently have a high incidence of TB. The need to understand and manage the risks to their businesses from a wildlife reservoir of bTB is a key priority for them. But they also need to recognise the disease risks associated with cattle movements and act to mitigate these. A healthy wildlife population is highly valued by farmers, other stakeholder groups as well as the general public. There are also strongly held views about the protection of badgers from cruelty, which are reflected in the legislative framework that applies to them. In devising a framework for decision making on bTB, the needs and interests of all farmers, including those in low incidence areas, as well as wider stakeholder interests must also be addressed.

1.3.3 The strategic theme **prevention is better than cure** will underpin our new approach to promote animal health and welfare. All interested parties must play their part in preventing spread of bTB. Where possible we will look to promote regionally focussed policies in the light of major regional differences in prevalence of bTB.

1.3.4 Government recognises that there are costs associated with protection of public and animal health and welfare conservation interests. Ensuring a **clearer understanding of costs and benefits** of bTB controls and that costs are shared fairly is therefore a long-term aim. This is being pursued in the context of wider Government policy on regulation and charging in agriculture and assessment of the cumulative burdens on the farming industry.

1.3.5 Understanding and accepting roles and responsibilities will be key to this strategic framework. The AHWS sets out roles and responsibilities for all interested parties in animal health and welfare. These need to be applied to the prevention and control of bTB. In particular, all animal owners have a responsibility to be vigilant, report any suspicion of notifiable disease and maintain good disease prevention and control practices, including compliance with regulations.

1.3.6 Controlling bTB is not just a matter for Government. It requires continuing commitment from herd owners, veterinarians, wildlife conservation interests and food businesses, as well as Government and its agencies and local authorities. All involved need to understand the need for controls and play their part in **delivering and enforcing standards effectively**.

1.3.7 In developing and making decisions on specific policies on bTB, Government will apply the **principles of good policy making** as introduced in the Cabinet Office Report on Professional Policy Making for the 21st Century, 1999 (www.policyhub.gov.uk/docs/profpolicymaking.pdf). The report introduced 9 principles of modern policy making.

1.3.8 One of the principles is a commitment to evidence based policy development. Government has an ongoing research programme to improve our scientific understanding of bTB. Other key strands of evidence in relation to policy development are economic aspects, environmental impact assessments, societal issues and practicality of delivery.

1.3.9 Government will also take into account the 5 **principles of good regulation** developed by The Better Regulation Task Force:

- Transparent – open, simple and user friendly;
- Accountable – to Ministers and Parliament, to users and the public;
- Proportionate – to the risk;
- Consistent – predictable, so that people know where they stand;
- Targeted – focused on the problem, with minimal side-effects.

2. Defining a vision for the future

2.1 A 10 year vision for control of bTB

2.1.1 The purpose of a vision is to inspire and direct decision making and to set out where we want to be in 10 years time in relation to bTB. The vision set out below attempts to encompass Government objectives and take account of stakeholder perspectives:

Overall vision:

To develop a new partnership based on the Animal Health and Welfare Strategy so that Government and stakeholders can work together to reduce the economic impact of bTB and maintain public health protection and animal health and welfare. We aim to slow down and prevent the geographic spread of bTB to areas currently free of the disease, and achieve a sustained reduction in disease incidence in cattle in high incidence areas.

2.1.2 The range of policy mechanisms available for controlling bTB depends largely on achieving a better understanding of the disease, how it is spread, and the effectiveness and practicality of interventions. The vision also concerns how decisions are made, and how government and stakeholders work together in partnership.

2.1.3 We are clear on what we want to achieve. However, in view of the need to acquire a better understanding of the disease, our disease control goals are aspirational. We have identified below **12 strategic goals** which together will help to bring about our vision. How these will be achieved is set out in more detail in Chapter 4, except where the goals reflect continuing activity and no additional further action has been identified at the present time.

1. To ensure minimal risks to **public health** from exposure to bTB through continuing cattle surveillance and control, slaughterhouse inspections and heat treatment of milk, occupational health controls and monitoring for human cases of bTB.
2. To have a **regional approach** to the control of bTB which will slow down and stop the geographic spread of the disease and achieve a sustained and steady reduction in disease incidence in current high incidence areas.
3. In line with the AHWS, Government, delivery agents and stakeholders work in **partnership**, in full recognition of their roles and responsibilities, sharing ownership of disease control and prevention.
4. To have a **transparent process** for making decisions on whether badger culling may form part of future policy, and what form (if any) such culling would take, in light of the results of the RBCT and/or any other relevant scientific evidence.
5. **Cattle surveillance and control** is effective, delivered efficiently, and provides good value for money. Cattle welfare continues not to be compromised by bTB, and more effective controls offer scope to improve the welfare of wildlife. Disease incidents in new areas are dealt with promptly and efficiently to prevent the establishment of new

potential hotspots. Surveillance information is published regularly and is up to date, providing a reliable information base for those advising and enabling local risk-based decision making.

6. Government will continue to develop a **sound scientific evidence base** by supporting research to improve our understanding of the disease and generate new tools, particularly in relation to diagnostics and vaccines. It is hoped that these will deliver the prospect of eventual eradication of bTB in cattle. The research outputs will be available and accessible to all interested parties to help improve understanding of risks and risk management.
7. To have arrangements consistent with Government guidelines and policy for securing **independent scientific advice**.
8. There is a wider understanding of the disease and possible control strategies, aided by **effective communications** through national, regional and local networks.
9. In line with the AHWS, the reasons for **Government intervention** are clear and costs of bTB controls are shared fairly between beneficiaries.
10. Standards are **delivered and enforced** effectively.
11. To continue to influence and comply with **EU and international rules** relating to bTB and learn from what has been achieved in other countries.
12. Achieving a common understanding of, and widespread adoption of **herd health planning** both within the cattle industry and the veterinary profession that advises it, with a strong emphasis on disease prevention. This is a commitment from the AHWS.

2.2 Existing commitments and their delivery

2.2.1 In order to help achieve this vision, the Government undertakes to maintain the policies already in place to control bTB in cattle and protect public health, and to put in place measures that have been announced but not yet implemented.

2.2.2 The 1998 5-point plan of action (paragraph 1.2.1) will be subsumed within the 12 strategic goals. Key elements will be continued, including effective public health protection, research to develop effective vaccines as part of the wider substantial research programme, regular testing of cattle herds, and the RBCT.

2.2.3 Cattle to cattle transmission is a serious cause of spread of bTB. The roll out in November 2004 of new cattle based measures (paragraph 1.2.4) will strengthen cattle surveillance and control. Government is also working with stakeholders to develop proposals for pre-movement testing in cattle (and post-movement testing in Scotland) to reduce the risk of spread of disease through cattle movements. These measures do not address the possible spread of bTB due to badgers, where scientific evidence to support effective interventions in Great Britain is currently lacking.

2.3 New commitments and their delivery

2.3.1 In addition to continuing commitments, this strategic framework introduces a number of **new** government commitments. These are set out below along with delivery timescales where appropriate:

- Develop a transparent process for making policy decisions on whether badger culling may form part of future policy in light of existing evidence and new evidence as it emerges. This will take into account modelling and cost-benefit analysis where work is under development. We expect to have a validated model **in 2006**, although analysis of the significance of the Irish trial results to the GB situation has commenced. This process will also take account of welfare and conservation issues. (paragraph 4.3.4)
- Build into the policy making process a better understanding of public opinion on bTB policies. We are considering how this can best be achieved. **Ongoing**. (paragraph 4.7.5)
- Establish **by the end of 2005** a new national bTB stakeholder body to advise on the development of bTB policies including how best to ensure regional focus. (paragraph 4.2.3)
- Improve communications with stakeholders, replacing the existing TB Forum with an annual conference, and maintaining direct contact with stakeholders on specific issues (paragraph 4.7.4). **We envisage the first conference being held in late 2005**. We will also keep a research delivery plan on Defra's website. (paragraph 4.5.5)
- Review and publish on an annual basis the evidence base for bTB, to help inform policy development. The first review is likely to be in **mid-2006**. (paragraph 4.6.5)
- Review and establish **by the end of 2006** new arrangements for securing independent scientific advice that are consistent with wider Government policy on scientific advice and the establishment of advisory groups. (paragraph 4.6.4)
- Improve availability of information on bTB; raise awareness and understanding of bTB issues amongst all stakeholders. **Ongoing**. (paragraph 4.7.6)

2.3.2 We seek the full backing and co-operation of key stakeholders as all parties need to accept that they have a role in tackling this disease.

3. Defining the scale of the challenge

3.1 Why is there a need to review our approach to bTB?

3.1.1 There were a number of drivers for the review of the 5-point plan of action:

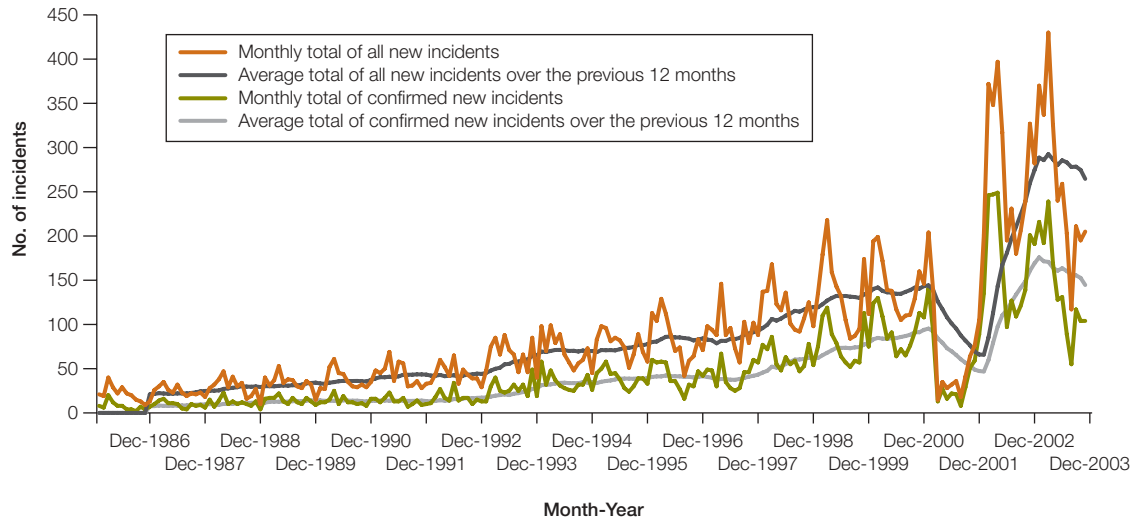
- increasing incidence and geographic spread of bTB;
- taxpayer expenditure, including research, of £88 million in 2003/04 – rising annually;
- increased costs and hardship to farmers in bTB hotspot areas and potential trade implications;
- with the final report of the RBCT expected by early 2007 there was a need to develop policy options;
- need to apply to bTB, the AHWS, wider agriculture strategies and the principles of sustainable development; and
- it is good practice to review policies every 5 years.

Disease trends

3.1.2 Bovine TB is a serious infectious and zoonotic disease of humans and animals. It is a significant problem in cattle in some areas of GB, though it currently affects a small proportion of the national herd. Around 6% of cattle herds sustained a TB breakdown at some point in 2003, though the percentage is much higher in hotspot areas; 95% of confirmed new incidents took place in the South West of England, West Midlands-Powys-Monmouthshire, Staffordshire-Derbyshire and South West Wales. Despite a recent possible slow-down the long-term trend has been for an increase in numbers of new herd breakdowns at an average rate of 18% per annum. A detailed account of disease trends is set out below.

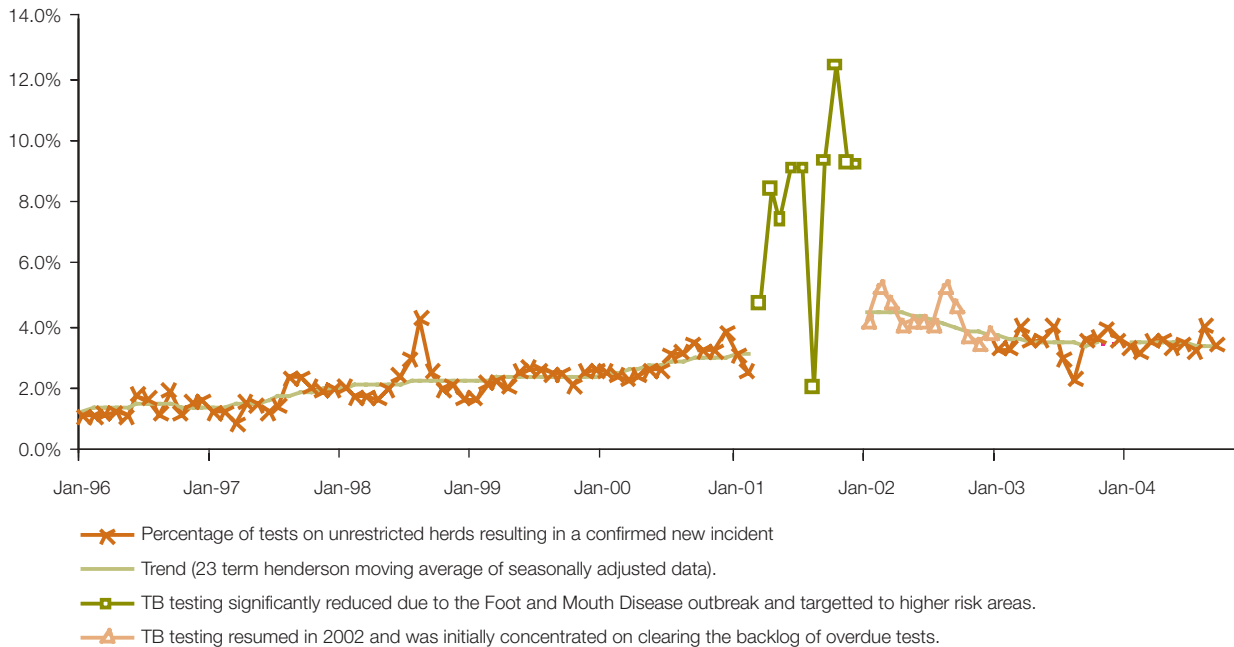
3.1.3 In 2003, approximately 45,100 herd TB tests were carried out in GB involving just over 4.5 million animal tests, both figures representing slight increases over 2002. Detailed TB statistics can be found on Defra's website. These tests disclosed 3,218 new herd TB breakdowns, down 3.5% on the 3,320 breakdowns disclosed during 2002. The indications from provisional TB statistics as at October 2004 are that the number of new TB breakdowns in 2004 should be similar to 2003. The proportion of those breakdowns confirmed by post-mortem examination and/or bacteriology was also down by comparison with 2002 (50% against 57%). **Figure 1** shows the evolution in the numbers of total and confirmed new TB incidents reported each month in GB between December 1996 and December 2003. The disruption of the TB testing programme during the Foot and Mouth Disease (FMD) outbreak of 2001 resulted in a marked fall in the number of breakdowns detected through routine on-farm TB surveillance.

Figure 1: Number and 12-month rolling mean of total and confirmed new incidents of bovine TB in Great Britain per month, 1986-2003



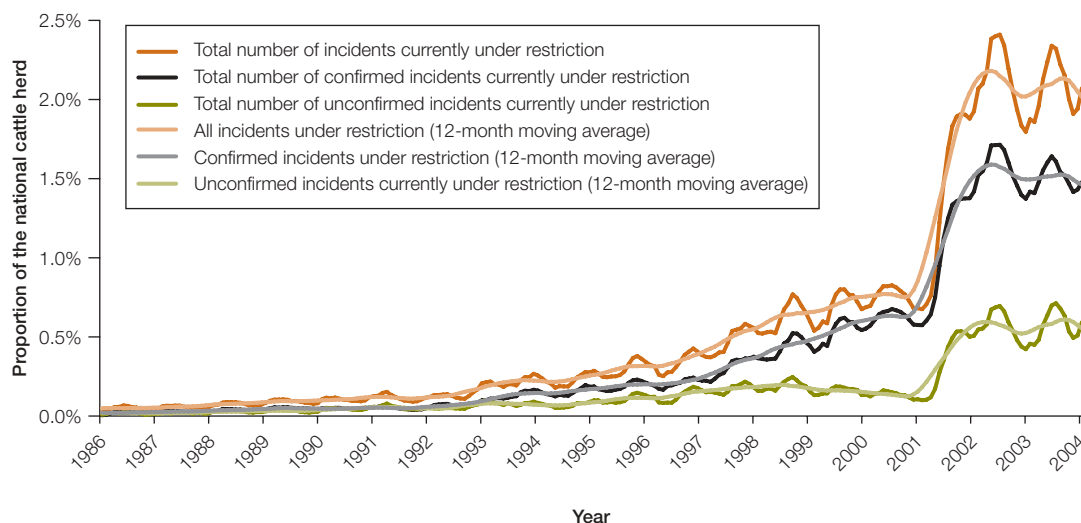
3.1.4 **Figure 2** shows confirmed TB incidents as a percentage of tests carried out in herds that were not subjected to TB restrictions when the tests were done. In this chart, the monthly number of TB incidents is adjusted by the number of TB tests actually carried out each month in order to control for seasonal effects. For every 100 tests carried out in unrestricted cattle herds in 2002, an average of 4.3 new confirmed incidents were found. The equivalent rate for 2003 was 3.5. This is similar to the provisional average incidence rate observed for January-August 2004. The herd incidence rate for 2003 is similar to that seen in the six months preceding the FMD outbreak and substantially lower than in 2002, when TB testing resumed fully but the majority of tests were carried out on herds with overdue TB tests.

Figure 2: Confirmed new incidents of bovine TB in Great Britain expressed as a percentage of unrestricted cattle herds tested during the period January 1996-January 2004



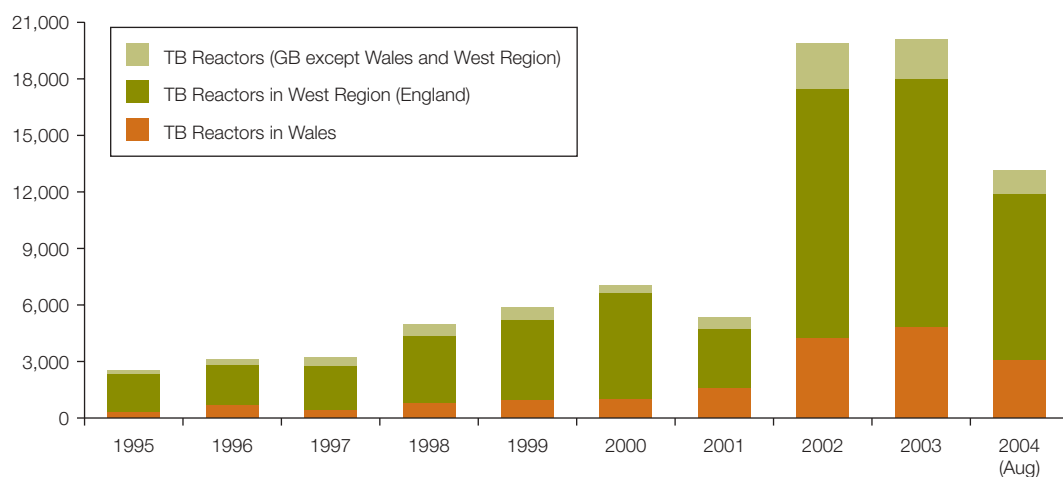
3.1.5 Around 6% (5,506) of cattle herds sustained a TB breakdown at some point in 2003, compared to just over 4% (4,192) in 2002. These are cumulative percentages for the year, which include new herd breakdowns plus any unresolved herd breakdowns that started the previous year. At any given time, however, less than 1% of all herds in GB are subjected to movement restrictions due to TB breakdowns, although there are seasonal and regional variations. This national percentage increased dramatically (up to 1.6%) during 2002, after the resumption of TB testing post-FMD (**Figure 3**).

Figure 3: Proportion of GB herds under TB movement restrictions, averaged for each month (source: Veterinary Laboratories Agency, based on data recorded on VetNet)



3.1.6 From 1986, and including the sudden temporary rise in TB incidence observed after the FMD outbreak, the long-term trend has been for an increase in numbers of new herd breakdowns at an average rate of 18% per annum (**Figure 1**) and numbers of reactors culled at 20% per annum (**Figure 4**). It is too early to say whether these long-term increasing trends have been curbed by the elimination of the testing backlog and the introduction of short-term control measures in the autumn of 2004.

Figure 4: The number of tuberculin test reactors slaughtered in GB, West of England and Wales has been increasing since 1995



3.1.7 The distribution of TB herd breakdowns in 2003 continued to show a high degree of geographical clustering compared with 2000, as illustrated in **Figure 5**. The traditional 'hotspots' in the South West of England, West Midlands-Powys-Monmouthshire, Stafford-Derbyshire and South West Wales accounted for 95% of confirmed new incidents and 94% of reactors in 2003. Cumbria sustained 70 new TB breakdowns in 2003 compared with 33 in 2002. The vast majority of confirmed TB incidents in Cumbria and the Northeast of England since the end of 2001 have occurred in cattle herds restocked after FMD or could be attributed to bought-in infected cattle. **Figure 6** illustrates the phenomenon of the widening geographical distribution of TB in cattle, as assessed by the gradually increasing number of parishes in GB sustaining new confirmed TB breakdowns year on year.

Figure 5: Geographical distribution of new TB breakdowns confirmed in 2000 and 2003
(source: VLA)

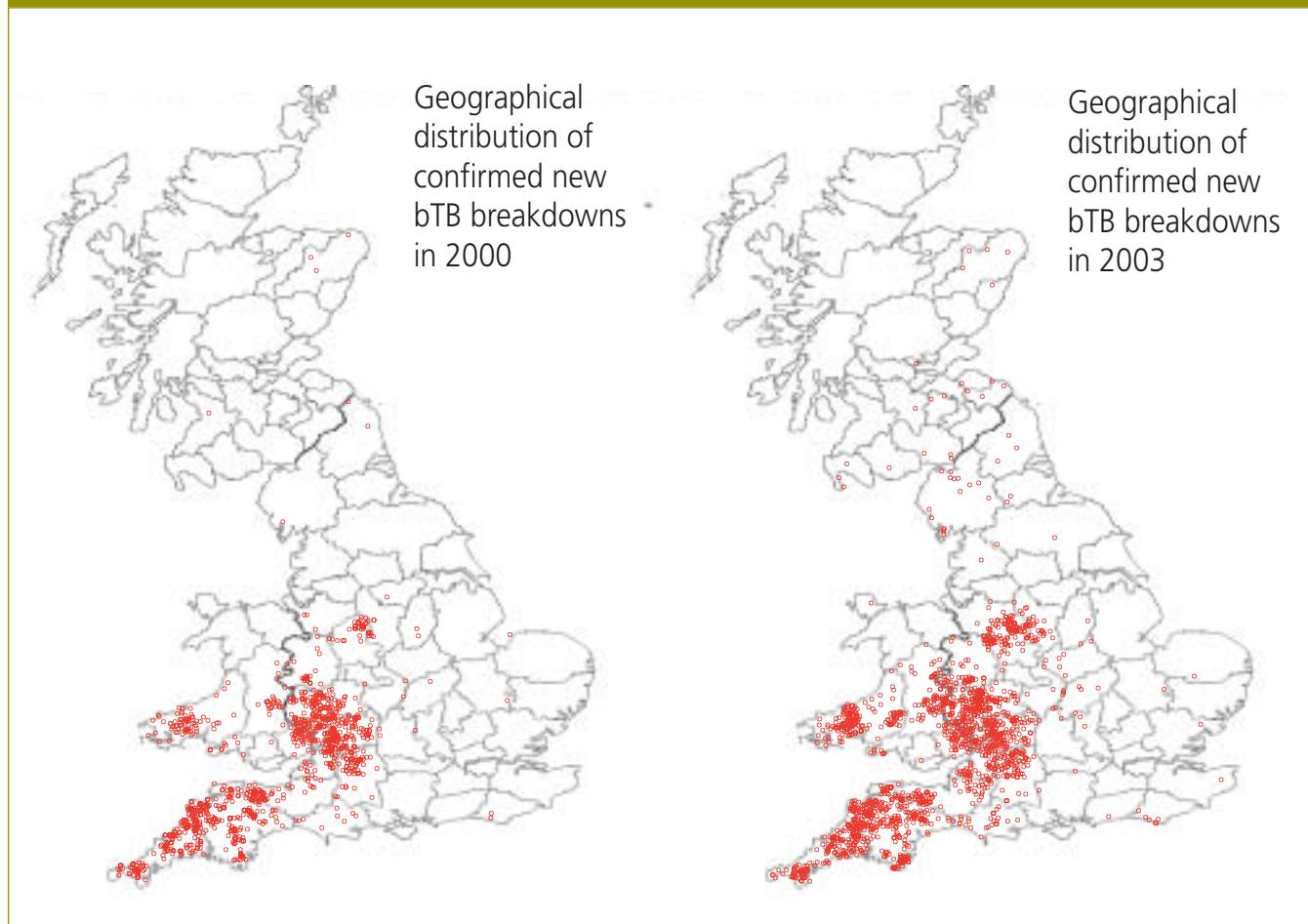
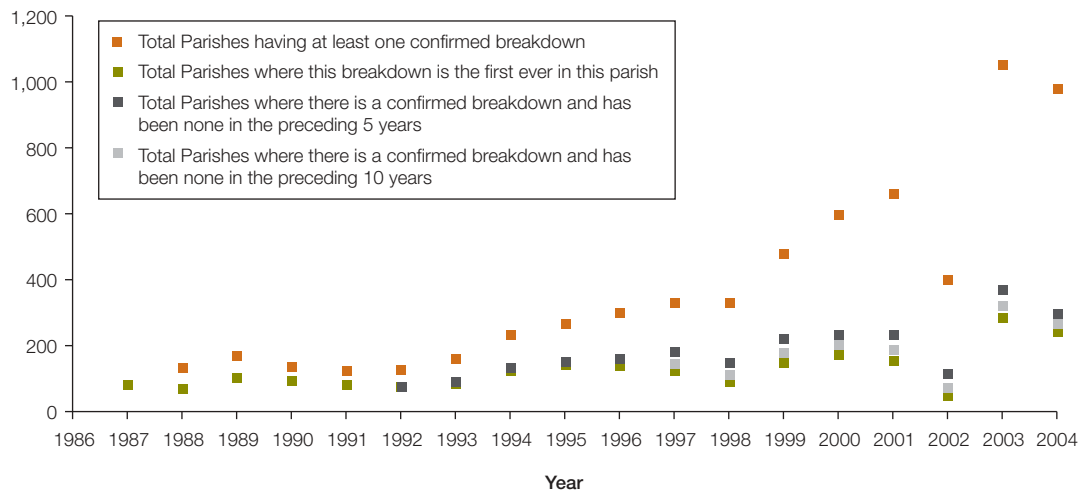


Figure 6: The number of parishes having at least one confirmed breakdown in any given year. In red, green and black, parishes with no recorded or recent history of confirmed TB (source: VLA, using TB data extracted from Vetnet)



3.1.8 The causes of the long-term increase in bovine TB are not well understood as there are likely to be many factors involved. There is speculation about the relative contribution of infected cattle and badgers to the incidence of TB, but no sound understanding. A key priority in Government-funded research is to gain a better understanding of the causes and the relative contribution that they make to the spread of disease.

Forecast costs

3.1.9 Government expenditure is set out in Table 1. It is not possible at this time to forecast with any degree of precision what the effect the increasing incidence of disease will have on costs. Since the FMD outbreak in 2001, the costs have risen sharply, the main cost factors being cattle testing and compensation for animals slaughtered. In general it is estimated that the compensation element of the total cost could increase by around 10% per annum.

Table 1: Breakdown of Government expenditure on tackling TB in cattle (£ million)

Activity	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05 forecast
Cattle Testing	17.6	13.3	5.4	24.7	33.2	36.4
Compensation	5.3	6.6	9.2	31.9	34.4	36.2
RBCT	4.6	6.6	6.0	6.6	7.3	7.4
Other Research	3.8	5.3	6.1	6.5	7.0	5.9
VLA	2.4	3.5	3.7	4.1	5.3	4.9
HQ/Overheads	4.5	0.9	0.1	0.7	1.0	1.3
TOTALS	38.2	36.2	30.5	74.5	88.2	92.0

3.1.10 Economic research carried out at the University of Reading on behalf of Defra in 2003/4 examined the direct costs to farmers of bTB breakdowns. The results showed that whilst most farmers surveyed suffered a net financial loss due to bTB, as a result of the current valuation and compensation arrangements, a small number had a net financial gain. Of 151 surveyed, 79% of dairy farmers and 65% of beef producers suffered net losses within the range £37-£17,000 per farm. The full economic cost of a bTB incident is much higher than that measured at the farm level as all the public sector costs of compensation, additional testing and administration of the breakdown have to be included. Farm businesses also need to adjust to operating under movement restrictions.

Results of the Randomised Badger Culling Trial due to go to Ministers by early 2007

3.1.11 We need to plan for the outcomes of the RBCT in order to develop policy options. As results are made available they will inform our regular reviews of the evidence base, taking into account all the available scientific evidence and economic and practical considerations.

3.1.12 On 4 November 2003 Ministers announced the suspension of badger culling in reactive areas of the RBCT. The decision was taken on the basis of interim scientific findings from the ISG. The ISG advised Ministers that its interim analysis of trial data accumulated up to 31 August 2003 indicated that there was a 27 per cent increase in the number of cases of bTB (breakdowns) occurring in reactive culling areas compared with the related survey-only areas where no badger culling took place (with 95% standard confidence intervals (CI) of 4.8-53%).

3.1.13 Since this primary analysis was completed, further analyses have been carried out by the ISG. These used all the data collected before 15 February 2004. It had been originally intended that within each triplet reactive culling would follow on soon after the initial proactive cull had been completed. In reality a number of factors, not least the FMD outbreak which led to the loss of 9 months of culling activity, led to delays. Once the initial proactive culls are completed, each year of data is called a triplet year and the number of triplet years across the ten triplets can be calculated.

3.1.14 Of the 26.5 triplet years of data collected before 15 February 2004, 12.2 years represented data accrued before any reactive culling operations had started and 18.9 years after.

3.1.15 The ISG reported that the 11.9 years of data before reactive culling took place indicated a 30% difference (interpreted as an increase) of disease in the reactive areas compared to the survey only areas (with 95% CI corrected for over dispersion: 13% decrease to 99% increase). For the period after reactive culling had commenced until 15 February the difference was 26% (with 95% CI: 1.3% decrease to 61% increase).

3.1.16 Caution is required when attempting to extrapolate data from the reactive cull as carried out in the trial to other types of culling operations. We will be better informed by the outcome of the proactive trial analysis. Further analysis of the reactive cull data is being undertaken by ISG and the Veterinary Laboratories Agency (VLA) researchers in order to provide additional insights into these results. This will include temporal-spatial analyses to see if the cattle breakdowns in reactive areas were associated, in a biologically significant way, with reactive culling activities.

Sustainable development

3.1.17 As previously stated, this strategy complements other strategies to support a sustainable agriculture sector, notably the AHWS, the Strategy for Sustainable Food and Farming (Defra), Forward Strategy for Scottish Agriculture (Scottish Executive), and the Farming for the Future (Welsh Assembly Government). The strategy is also important in relation to the protection of public health and food safety. The health and welfare of farmed animals makes a major contribution to the sustainability of the livestock sector, the wider farming and food industry, and more broadly to the countryside, rural communities and the rural economy. Achieving sustainability requires Government and industry to examine economic, environmental and social impacts and risks, and to look for solutions which deliver long-term benefits in an integrated way across all three areas.

3.2 Stakeholders, their perspectives, roles and responsibilities

3.2.1 Representative organisations and individuals have already made valuable contributions to developing this Strategy. They will continue to have an even more important role in delivering it.

3.2.2 During the consultation in February 2004 Defra, the Welsh Assembly Government and the Scottish Executive organised a series of regional workshops around GB where regional representatives of all stakeholder organisations and others were invited to discuss the issues.

3.2.3 As a result of the consultation, Government has developed its understanding of the current perspectives of the key stakeholder groups, though these are clearly generalised views. Setting these against the roles and responsibilities of key groups, based on the AHWS, shows the scale of the challenge which this framework needs to address in order to achieve its goals.

Cattle farming industry

3.2.4 Assessment of current perspective: Farmers tend to believe that control of bTB is primarily the responsibility of Government given that bTB is a zoonotic and infectious disease. Farmers want to see a sustained reduction in incidence of the disease with ultimate eradication, although most farmers recognise eradication is not possible within the 10 year time frame of this strategy. In low incidence areas farmers want protection from the disease. In high incidence areas farmers are reluctant to accept the need for, and particularly bear the cost of, tighter cattle controls unless they see action taken to better control wildlife reservoirs of infection. Most farmers consider this to be essential pending a cattle or badger vaccine.

3.2.5 Government's view on roles and responsibilities: All farmers are responsible for the health and welfare of the animals in their care and need to understand and provide for their physical and welfare needs. They have a responsibility to maintain good disease prevention and control (biosecurity) practices, including compliance with regulations. It is a statutory obligation that any person who keeps animals shall not attend to them unless he has access to all relevant statutory welfare codes relating to the animals and is acquainted with the provisions of those codes. The Codes of Recommendations for the Welfare of Cattle state that the stock-keeper should draw up a written health and welfare plan with the herd's veterinary surgeon and, where necessary, other technical advisors, which should be reviewed and updated each year. The plans should set out health and husbandry activities that cover the whole year's cycle of production, and include strategies to prevent, treat or limit existing disease problems. There are initiatives to encourage herd health planning under the AHWS. We will ensure that relevant work contributing to the prevention and control of bTB will be joined up with the work taken forward under this Strategy.

Veterinary surgeons

3.2.6 Assessment of current perspective: Large animal vets have a key role in delivering effective bTB surveillance and control testing for Government as well as offering essential advice to farmers. They want to see a sustained reduction in incidence of the disease and generally believe this requires addressing bTB in wildlife as well as cattle. In some areas of the country, bTB testing plays a significant role in maintaining the presence of large-animal practices. There is general support for improved cattle based measures, including pre-movement testing, although there is also concern about availability of veterinary resources and the limitations of the diagnostic skin test. Vets have a key role in advising farmers on disease prevention and control. The Government facilitates herd health planning, whilst vets support and promote adoption of the concept.

3.2.7 Government's view on roles and responsibilities: Local Veterinary Inspectors (LVI's) have a key role in continuing to deliver effective bTB surveillance testing on behalf of the Government. Veterinarians are trusted by animal owners as a source of practical and reliable advice. This means they are uniquely placed to advise farmers on disease prevention. As identified in the AHWS, veterinarians can play a crucial role in disease prevention by providing professional advisory service to farmers, for example through farm health planning. Although the profession is opposed to lay testing, the Government is of the view that legal recognition of lay testers may provide a more flexible and larger pool of testing personnel. It is therefore working with BVA and RCVS to develop an Action Plan to address concerns about large animal practices and the provision of services to livestock farmers.

Wildlife conservation and animal welfare groups

3.2.8 Assessment of current perspective: These groups want to see strengthened cattle-based control measures including movement restrictions, improved cattle diagnostic tests, increased use of the gamma interferon blood test and more research into the transmission of bTB between cattle. They want policies to respect and recognise wildlife conservation and welfare issues, and to be based on firm scientific evidence. They believe bTB may be an animal welfare issue in wildlife and support the development of vaccines. At the regional meetings held during the 2004 consultation representatives of badger conservation groups said that they wanted to see a badger population that was clear of bTB. They would consider the culling of badgers as a way of controlling the disease in both badgers and cattle if the case for intervention was supported by scientific research (see Keystone's report to Defra – (www.defra.gov.uk/animalh/tb/strategy/newstrategy.htm))

3.2.9 Government's view on roles and responsibilities: These groups have an important role to play in developing bTB policies, helping to ensure a fair balance of priorities between cattle and wildlife controls, education and advice to farmers and others.

Consumers

3.2.10 Assessment of current perspective: Consumers have fundamental expectations about the acceptable levels of animal health and the safety of the food they eat. Consistent with the minimal risks to consumers and countryside users from bTB, awareness of the issues is very low. Badgers and other wildlife are cherished. Taxpayers however expect that public funds are used to secure best value for money.

3.2.11 Government's view on roles and responsibilities: Government needs to take account the views of the general public around the benefits of controlling bTB. Food chain businesses have a role to play in ensuring food safety for consumers and raising awareness of standards.

3.3 What is the scope for action on bTB?

3.3.1 It is necessary to define the constraints within which action on bTB is possible. Consideration of these should help to identify where more evidence or action is needed:

- **scientific:** Bovine TB is a scientifically challenging disease to study and understand. In the presence of a wildlife reservoir of infection there is no single point of intervention for controlling the disease and there are many as yet undeveloped scientific tools that would benefit disease control, in particular significant advances in both effective vaccines and highly sensitive and specific diagnostics. In some other countries with bTB, cattle control measures similar to those in place in GB seem to be effective in managing the disease in the absence of a wildlife reservoir. How we tackle the threat from the wildlife reservoir, particularly badgers, is difficult to resolve scientifically. Scientific certainty and consensus are not always achievable. We need to find the means of interpreting science where there is conflicting advice. Sometimes decisions need to be made on the basis of the best available scientific evidence and in light of outstanding uncertainty. Government is nevertheless committed to developing policy on the best available scientific evidence (from UK and beyond). It is important not to exclude the possibility of continuing to seek to control bTB through cattle based measures alone.

- **societal:** The views of the general public around the benefits of controlling bTB and potential wildlife controls for the purpose of reducing overall incidence of the disease in both cattle and wildlife need to be better understood. Wildlife management policies for any purpose are not necessarily supported across the whole of society. Whilst we believe that society ascribes a high value to our wildlife populations, this must be set against the consequences which that can bring to the control of disease. In the case of bTB around 24,000 cattle are slaughtered each year to help control the disease, causing hardship to farmers and economic costs to Government and industry. We would not expect a limited/localised badger culling policy to be popular across the whole of society but there is a need to know more about the views of the wider population. We have commissioned research in this area.
- **policy:** Policy options on bTB are bound and directed by wider Government policies in particular in relation to sustainable development, food safety, farming generally, wildlife management, the AHWS, cost-sharing, and the principles of good policy making.
- **legal:** Government is bound to comply with EU and domestic legislation relating to bTB, but will seek to influence or amend legislation as appropriate. Details of the main legislation relevant to bTB controls were set out in Annex C of *'Preparing for a new GB strategy on bovine TB'*, February 2004. Government will apply the principles of better regulation in developing regulatory solutions.
- **cost:** The AHWS clearly states that there needs to be a better sharing of the risks and costs associated with animal health with a more appropriate balance between the taxpayer and the industry for the costs of animal health and welfare. Government also recognises that additional costs for industry will have an impact and there needs to be a strategic view of what is affordable and sustainable by taking account of the other costs which farming businesses have to bear. To develop this partnership approach Government is reviewing the basis of cost-sharing, including charging for services across the whole of animal health and welfare. This will help to establish a clear understanding of where the costs and benefits correctly lie to govern the decision on whether a service should, in principle, be paid by industry or by taxpayers or should be shared between the two parties. This review will establish and agree a number of guiding principles to ensure a consistent approach including how incentives, such as rewarding best practice, can be used in schemes.
- **burden on stakeholders:** Government is committed to completing Regulatory Impact Assessments (RIA's) for all policy proposals which are likely to have a direct, or indirect, impact on business, charities or the voluntary sector. We are committed to ensuring that the approach is risk based, proportionate and any new burdens on the sector are minimised. We will carry out robust impact analysis of the individual policy options to help us do this. When completing RIA's we will explicitly identify any significant environmental and social costs and benefits, as well as economic costs and benefits.
- **equity:** Government must ensure that costs of controls are fairly distributed amongst beneficiaries. This is particularly sensitive given the existence of a wildlife reservoir of disease that is not currently controlled by Government (due to the uncertainty of the evidence) and that farmers are not permitted to control themselves.

- **wildlife conservation:** The Bern Convention (Convention on the Conservation of European Wildlife and Natural Habitats 1979) is an international conservation agreement, which, in accordance with Article 26 of the Vienna Convention on the Law of Treaties, is binding upon the parties to it (including the UK) and must be performed by them in good faith. It is not strictly part of our national law and so is not enforced by our national courts. The UK government is bound to comply with it in accordance with its obligations in international law. The Convention, amongst other things, prohibits causing local disappearance or serious disturbance to certain species, including badgers. The Convention Secretariat in 1998 considered the RBCT to be consistent with the Convention. Also, the spirit of the Convention is reflected in domestic legislation. English Nature, the Countryside Council for Wales and Scottish Natural Heritage are Government's statutory conservation advisors on wildlife conservation. Government will consider carefully any advice from these bodies.
- **animal welfare:** Current cattle surveillance and controls aim to detect bTB very early so animals do not suffer. Whilst not strictly an animal welfare concern, this policy does lead to approximately 24,000 animals each year being humanely slaughtered for disease control purposes. The welfare of badgers in relation to protection from persecution, is managed through the Protection of Badgers Act 1992. Cases of unlawful persecution are dealt with by the Police. In considering future policy options, any culling of badgers would have to be carried out in an acceptably humane manner.

4. Delivering the vision

4.1 Developing within GB a regional approach for bTB control

4.1.1 We want to develop a stronger regional approach to the control of bTB which will slow down and stop the geographic spread of bTB to areas currently free of the disease and achieve a sustained and steady reduction in disease incidence in current high incidence areas.

4.1.2 We need to achieve agreement both on the definition of 'regions' in the context of this approach, considering both administrative boundaries and disease incidence, and on what should happen within them. England, Scotland and Wales are countries within Great Britain which already have scope for different approaches to bTB. The pursuance of post-movement testing in Scotland and the setting up of a TB Action Group in Wales are examples of this being put into effect. A GB strategy framework will ensure that policy development within England, Scotland and Wales is effectively co-ordinated.

4.1.3 Recognising the differences in disease incidence within the countries of GB, in particular within both England and Wales, we want to explore the scope for consultation on developing disease control policies that are tailored according to disease incidence and risk.

4.1.4 Further thought needs to be given to how we achieve an effective regional approach. We need to reach agreement on how decisions are made and what decisions are appropriate for making at GB, country and, within that, at regional level. We also need to agree the extent to which delivery of this strategic framework is taken forward on a GB, country or regional basis. These will be matters for the new advisory body (see 4.2.3) to consider.

4.1.5 In summary, this is a risk-based approach that:

- recognises that governance of TB is devolved to Wales and Scotland;
- is consistent with wider Government policy on regional development; and
- aims to allow policies to be developed with stakeholders to reflect the differences in risks and incidence in different regions.

4.2 New governance arrangements

4.2.1 Consistent with the AHWS, Government intends to work in partnership with stakeholders. This will help us arrive at policy decisions that reflect a robust, fair and cost-effective approach taking into account and balancing stakeholder perspectives. New governance arrangements for bTB will take account of the remit of the AHWS Implementation Group.

4.2.2 The TB Forum was established in 1999 with a membership that represents the farming industry, wildlife and animal welfare groups, the veterinary profession and the ISG. The remit of the Forum is *"to consider new measures which might be taken to control TB in cattle"*. The Forum was intended to ensure that views of stakeholders were taken into account in developing policy options. The Forum has met three times a year and papers and notes of the meetings are available on Defra's website (www.defra.gov.uk). We have reviewed the TB Forum and considered comments from the House of Commons Environment, Food and Rural Affairs Select Committee

(EFRAC). We have concluded that, while the Forum has been reasonably effective as a means of communicating developments, it has been less effective in securing from all partners a commitment to active and positive contributions to achieve better control of bTB. There are also key stakeholder interests not represented on the Forum, such as deer organisations and consumer interests. New governance arrangements are needed and 2005 will be the last year that we expect the existing TB Forum to operate (new arrangements for more effective communications are set out in 4.7). We are grateful for all the contributions made by group members.

4.2.3 We are committed to establishing **a new national (GB) advisory group on bTB**.

This would need to be set up as a Non-Departmental Public Body (NDPB) to advise the Chief Veterinary Officer (CVO) and Ministers on policy options and delivery developments, to co-ordinate action taken in England, Wales and Scotland and ensure that decisions at national or regional level are made in accordance with the principles set out in this framework.

4.2.4 This arrangement would not preclude the ongoing dialogue and discussions between Government and stakeholder organisations or individuals. We would wish, in the longer term, to move towards such a group becoming a decision-making body, where shared decisions or those not requiring Ministerial involvement can properly be taken. The scope of any decision-making responsibilities would need to be agreed by ministers.

4.2.5 We envisage the new group will be in place by the end of 2005. Meanwhile we have asked the bTB strategy development core stakeholder group to act as an interim body to steer development of this new group including how a regional approach can be best developed in relation to bTB and what decisions might be devolved to regional level (within England, Wales or Scotland).

4.2.6 As specific policies are developed, all interest groups will be consulted.

4.3 Wildlife controls: how policy decisions will be reached

4.3.1 Making progress on quantifying the risks to cattle posed by badgers, wild deer and other wildlife and assessing the effectiveness of control options is the single most contentious and scientifically uncertain issue for both Government and stakeholders, particularly those in areas suffering high incidence of bTB.

Badgers

4.3.2 In his report to Ministers in 1997, Professor Sir John Krebs said *'The sum of evidence strongly supports the view that, in Britain, badgers are a significant source of infection in cattle.....in total the available evidence including the effects of completely removing badgers from certain areas is compelling'*. The recent important Irish Four Area Badger Study has shown that, in the four areas examined, the removal of badgers has resulted in a significant decline in the incidence of cattle TB there. The significance of these results to the GB situation is being considered. There are some important questions that need to be addressed before these results can be translated into policy action, for example, consideration of practicability, cost effectiveness and acceptability.

4.3.3 The Randomised Badger Culling Trial was one of the actions in the 5-point plan, reflecting Government's commitment to evidence based policy development in this difficult and contentious area (see 4.5). The proactive treatment in the RBCT is scheduled by the ISG to be completed by the end of November 2005, with some surveying work continuing into 2006. The ISG will present its initial findings (the headline figure of the influence of proactive culling on the number of TB breakdowns in cattle) to Defra in spring 2006. The ISG will present its final report, including detailed and further analyses, to Ministers in early 2007. The independent scientific review of the RBCT and associated epidemiological work by Professor Godfray and his team in 2004 [www.defra.gov.uk/animalh/tb/default.htm], and the ISG's response, highlight the inherent risks in attempting to achieve scientific certainty to make policy decisions.

4.3.4 In this area, scientific results are always likely to be subject to debate and variable interpretation. It is important to recognise that, without undermining the commitment to policy development based on sound science, decisions may have to be made taking account of scientific uncertainty. In considering the evidence on badger controls, we will, as well as assessing the scientific merits of options, need to focus on costs, practicality of delivery, conservation implications and take into account wider public opinion in informing policy decisions on badger or other wildlife controls. This is consistent with seeking to adopt a more sustainable approach. Analysis of the evidence from the trial in the Republic of Ireland is already underway. Evidence from the RBCT is being analysed as it emerges. We have set out below the points to be considered in developing policy decisions on badger management or other wildlife controls. All points are equally important and will be reviewed regularly in light of developments in the evidence base.

Point 1 – Efficacy: policy must take account of the costs (including the welfare costs) and benefits

- we have conducted a preliminary study which integrates scientific models developed at the Central Science Laboratory and Reading University to establish the overall costs and benefits of various badger culling options. This incorporates the results of research on assessing the impact of reducing badger populations. The assumptions used within the model are based on current knowledge but are uncertain to varying degrees. This means that there is always some uncertainty (confidence limits) associated with the results. A paper for publication in a peer reviewed journal will be prepared from the first phase of the study (model development). Further work is needed on the model before we can draw conclusions on policy options. The model will be validated and developed over the next 1-2 years. As scientific information is generated from the RBCT and other studies, it will be used to inform the assumptions used in the model and so reduce the uncertainty surrounding the results. The model will help inform policy decisions and areas for future research. We plan to formally review the model each year so gaps in knowledge can be identified and the policy position in relation to badger culling can be reconsidered.

Point 2 – Conservation: policy must take account of wildlife conservation objectives

- research is in progress to measure the ecological consequences of badger removal. We will consider the evidence from this. We will also seek and take account of advice from statutory conservation advisers and ensure a better scientific understanding of badger conservation issues, commissioning research if any gaps in our evidence base are identified and resources permit. This includes understanding the wider implications of badger population expansion as well as the impacts of any action to control or reduce badger populations.

- we will take account of the Bern Convention (see paragraph 3.3.1).

Point 3 – Welfare: policy will take account of legislation protecting the welfare of badgers, and any necessary culling would be carried out with due regard to welfare considerations

- Badger culling under the RBCT is carried out under Crown Immunity and must remain an option open to Ministers to consider. The Protection of Badgers Act 1992 protects badgers from killing, injuring or taking and their setts from interference. However, under Section 10 of the Act, provision is made for carrying out these otherwise unlawful actions under licence for certain purposes. Two of these purposes are: preventing the spread of disease and preventing serious damage to livestock or other forms of property. Cruel ill-treatment of a badger is an offence under the Act.
- Badgers are listed on Schedule 6 of the Wildlife and Countryside Act 1981 which means they may not be killed or taken by certain methods. This listing is to prevent the use of methods that could lead to indiscriminate killing of badgers and other wildlife such as the use of self-locking snares, which are illegal under Section 11 of the Act.
- Badger welfare is a contentious issue. A methodology will be developed that will make clear how humaneness of different culling options could be assessed and inform policy options and research priorities;
- Although management of diseases in wildlife for its own sake is not currently a Government objective, any policy decision will recognise that culling of diseased badgers has potential to reduce animal suffering.

Point 4 – Wider society: policy must take into account the views of wider society on bTB controls and wildlife culling in particular

- Government commissioned research at Reading University will give some assessment of societal values ascribed to changes in badger populations. We will consider the report of this work, expected early 2005, and undertake further work on informing and assessing public opinion.

Point 5 – Overall approach: any wildlife management policy must form part of a holistic approach to bTB that balances cattle and wildlife controls

- Local policies on wildlife management would require clear commitment that the farming industry will take all reasonable steps to reduce all the other risks of introducing bTB into their herd.

Wild deer and other wildlife

4.3.5 Research has identified the presence of bTB in a range of British wildlife species including most species of wild deer. We will continue to monitor wildlife populations and will commission risk assessments to inform us on what policy action might be called for.

4.3.6 In relation to wild deer, Defra's most recent research requirements invited proposals for a quantitative risk assessment into the role that deer play in the perpetuation of bTB, to be commissioned during 2005/6. Any policy decision will be taken in the wider context of the Deer Management Strategy, published at the end of 2004. Defra will also provide funds for the recruitment of an additional Deer Liaison Officer within the South West. One of their duties will be to have a national remit for disease surveillance in deer, particularly with regard to bTB.

4.4 Effective cattle surveillance and control

4.4.1 The cattle test and slaughter scheme will remain central to controlling spread of disease. In the absence of a wildlife reservoir of disease, similar cattle controls in other countries have been effective in controlling the disease. Details of the minimum testing regime are determined by Council Directive 64/432 (as amended). We will continue to explore scope for maximising the effectiveness of existing tests and developing improved diagnostic tests.

4.4.2 As set out in paragraph 1.2.4 new cattle surveillance measures were implemented across GB from autumn 2004. These aim to tighten and improve the effectiveness of cattle surveillance and control.

4.4.3 Government is working with stakeholders to develop a detailed practical proposal for the introduction of statutory pre-movement testing of cattle to reduce the risk of spread of disease due to cattle movements. In Scotland, the intention is to introduce both pre- and post-movement testing. The wider introduction of post-movement testing will be kept under review.

4.4.4 It is the responsibility of the farmer to reduce the risk of introducing diseases to a herd. We expect farmers to take all reasonable precautions, by implementing strict biosecurity measures on the farm, and purchasing replacement cattle from herds which have been tested and shown to be disease-free. We also expect farmers to adopt herd health planning and seek veterinary advice to address the health and welfare needs of the herd. This not only helps prevent and control disease, but helps to boost productivity, reduce financial losses in the production cycle, and saves time through forward planning.

4.4.5 As further scientific evidence emerges, including areas such as risk factors, (through epidemiological investigations), and the results of a pilot study on the use of the gamma interferon blood test, the policy implications will be assessed. Any new cattle based policy will be subject to cost-benefit analysis and consultation prior to decisions about implementation. We will monitor the disease trends so we can assess if new policies are effective.

4.5 Commitment to developing a sound scientific evidence base for bTB

4.5.1 Government is committed to ensuring its policies on bTB are recognised as being soundly based on scientific evidence. Science funded by Government needs to be demonstrated as being of high quality. Any new arrangements in relation to bTB will be informed by, amongst other things, Defra's wider Strategy for Science and Innovation.

4.5.2 The Defra research programme supports GB as a whole. Total expenditure on research associated with bTB (including the RBCT, TB 99 and Road Traffic Accident (RTA) studies) amounted to £19.6million in 2003/4. Three of the five points in the 5-point plan of action related to research, namely developing a vaccine, carrying out research on how bTB is spread and the RBCT. These have been carried forward in our research programme which is focussed on improving our understanding of bTB in cattle and wildlife, trialling disease control options and development of new tools to fight the disease. The ISG has had a key role in advising on the programme.

4.5.3 As part of our review of the 5-point plan of action, Government commissioned a report summarising for the lay-reader the current scientific evidence base on bTB. This is published alongside the strategy and is on Defra's website. It provides a benchmark for future reviews.

4.5.4 Wherever possible, research programmes are carried out in collaboration with researchers in other countries. This has been particularly important in carrying forward research on possible vaccines against bTB in cattle and badgers, where collaboration with researchers in the Republic of Ireland and New Zealand has been established.

4.5.5 Stakeholders want us to be clearer about when results from research in key areas can be expected and how results will be communicated. We agree this is important. The delivery plan for the current Government funded research programme on bTB is shown at Annex B. This will be put on the Defra website and updated regularly.

4.5.6 Stakeholders also want clear statements of **research priorities**. Research priorities for the next 10 years can be considered under the following headings:

- **Diagnostics:** Government will continue to develop improved diagnostics through both research and the review of epidemiological information to maximise the use of all available tests. New tests may be required which can differentiate vaccinated from infected animals.
- **Vaccines:** Developing new vaccines is a long-term programme and we are not anticipating that a new vaccine will be developed and licensed within the time frame of this Strategy. We will do all we can to make sure that vaccines may be available to be used in subsequent strategies. We will actively continue with vaccine research looking at options for both badger and cattle vaccines. This may involve trials of existing vaccines as well as continuing searching for new vaccines. We will ensure close links to research on human TB vaccines in order to exploit any advances in that field for use in animals.
- **Epidemiology, including modelling:** We will use existing models, and develop new models to reflect the spread of disease and impact of control measures, such as vaccine strategies. We will ensure that the data from the RBCT is made available to the research community for further studies.
- **Wildlife ecology:** Although we will continue with studies of the ecology of badgers we will also research the incidence of disease in other wildlife species and assess risks from other wildlife to cattle.
- **Husbandry:** Research to identify cattle husbandry options which reduce the risk of TB – perhaps by limiting contact with wildlife.

- **Economics/Socio-economics:** Research to assess the cost of bTB control and the costs of various policy options, taking account of the need for any wildlife culling to be carried out humanely.

4.5.7 We will work with various groups involving independent experts, industry representatives and officials, to develop detailed proposals in each area and research will be commissioned as funds become available. If a decision is made to establish a new Scientific Advisory group (see paragraph 4.6.5) we would look to them to provide advice on research priorities.

4.6 New arrangements for securing independent scientific advice

4.6.1 Provision of independent scientific advice is an important element of the policy development process. **The ISG** was set up in 1998 to advise the Ministry of Agriculture, Fisheries and Food, now Defra – Ministers on implementation of the Krebs Report on bTB in cattle and badgers. The Terms of Reference given to the Group are in paragraph 1.2.2.

4.6.2 The RBCT started in 1998. The cost of the trial and associated epidemiological research to the end of March 2004 is estimated to be £33.9 million. An independent scientific review of the RBCT (and associated epidemiological research) was conducted in 2003 at the request of Defra's Chief Scientific Advisor, as part of Defra's commitment to review its research programme every 3-5 years. The report of this review, and the ISG's response were published in April 2004. On most areas of the science the two scientific groups were in agreement.

4.6.3 The timetable for completion of the RBCT is set out in paragraph 4.3.3. Government will continue to require a means of securing independent scientific advice on TB once the RBCT has been completed.

4.6.4 In February 2004 Ministers announced establishment of a new Science Advisory Council (SAC) to give expert and independent advice on science policy and strategy to Defra. In relation to future arrangements for securing scientific advice on bTB, a sub-group of the SAC is helping Defra's Chief Scientific Advisor (CSA) to consider options on the way forward. If it is agreed that a new scientific advisory body is needed then the SAC will provide advice on reporting channels, advisory body composition, and Terms of Reference. Any new group would need to meet the tests set by the Phillips (BSE) Inquiry on scientific committees, and the Office of Science and Technology (OST) Code of conduct for Scientific committees. It would also need to report jointly to the CSA and the CVO and have close links to the proposed new National TB Advisory Group (see 4.2.3).

4.6.5 Government envisages that one of the tasks of the new group would be to carry out an annual review of scientific evidence. It may also advise on research requirements and risk assessments. As we envisage the first review taking place by the end of 2005, we hope to have established new arrangements by then.

4.6.6 The results of reviews of the science evidence will feed into a wider annual review of evidence to help inform policy developments.

4.7 More effective communications

4.7.1 Government's review of TB Forum demonstrated the value put by stakeholders on opportunities for sharing and exchange of information on bTB, particularly in relation to research

and policy developments. Forum meetings helped members gain a better understanding of the contesting stakeholder perspectives. However, the Forum has necessitated a good deal of effort from stakeholders and Defra with only limited discernible practical benefits. It also does not include representation of the full range of stakeholder interests and the frequency of meetings (3 times a year) has sometimes meant there has been little of real substance to discuss.

4.7.2 In the 2004 consultation exercise stakeholders also expressed a desire for better communication of developments on bTB, particularly in relation to the research programme.

4.7.3 Although the existing TB Forum will be disbanded (see 4.2.2), we want to build on the positive attributes of the group. We also want to ensure research and other developments are disseminated in a way that is accessible to, and understood by, a wider range of stakeholder interests.

4.7.4 Government intends to continually enhance its websites so these are focussed on customer requirements. We shall also be arranging an **annual conference** for stakeholders on bTB with a clear focus on exchange of information on bTB developments, in particular the research programme, and providing opportunities for discussion. We propose the first annual conference in late 2005. These developments will involve a much wider audience than the TB Forum. We will be seeking ideas from stakeholders before finalising details.

4.7.5 Government also wants to achieve a better understanding of the views of the wider public so these can be better reflected in policy development. Public opinion around badger culling and the issue of wildlife controls is one area of interest, but other issues such as cost-sharing are also relevant. **We are committed to exploring the scope for better informing and monitoring views of the wider public, and putting in place arrangements for easier access to information.**

4.7.6 We also recognise the importance of consumer confidence and will seek to involve consumer organisations in governance arrangements.

4.8 Understanding the reasons for Government intervention

4.8.1 The AHWS sets out four reasons for Government intervention when the market on its own cannot deliver the desired objectives. These reasons, set out below, are the starting point for considerations as to whether intervention should take place, not who should fund the intervention.

- **Protection of public health** – historically this has been the main reason for Government intervention on bTB, based on risks to consumers from milk and meat. Current controls (cattle surveillance and control, slaughterhouse inspections and heat treatment of milk) are considered to be effective, and these minimise these risks and justify continued intervention. There are also minimal occupational health risks (regulated by the Health and Safety Executive) and potential risks to the general public from exposure to wildlife (and potentially companion animals). We must remain vigilant as bTB is an infectious and zoonotic disease which has increased in the GB cattle population and there is a wildlife reservoir of disease. The increase in bTB in cattle has not, to date, been coupled with an increase in the incidence of human disease in the UK caused by *M.bovis*. Nevertheless, there remains a need for stringent and continued monitoring and action if the risks increase.

- **International trade** – the presence of bTB on a farm is potentially an impediment to EU trade in live cattle. This is governed by EU rules which Government implements and seeks to influence. Under EU Directive 64/432 EEC (as amended) live animals may only be exported to other EU countries if they come from a herd which is free of bTB. Annex A of The Directive identifies an official bTB free herd as one where, essentially, all animals (over 6 weeks old) are being routinely tested in accordance with the correct intervals for the herd and there are no positive reactions to these tests. Where a positive reaction is detected or in some other situations, the herd will cease to be regarded as bTB free for a period.
- **Protect/promote animal welfare** – cattle are currently being exposed to a level of disease which is resulting in the slaughter of around 24,000 animals each year. Interventions to seek to reduce the number of animals slaughtered are justified. It is difficult to justify withdrawing from the existing cattle surveillance and control arrangements on welfare grounds as these usually pick up bTB in cattle before clinical disease occurs so that bTB is not a farm animal welfare issue. There are arguably potential welfare benefits to badgers and other wildlife of reducing the level of bTB in their populations, though this in itself is not an accepted reason for intervention.
- **To protect the interests of wider society/economy** – The existence of a reservoir of infection in wildlife – particularly badgers – seems likely to be a significant factor in our ability to control the disease in cattle. Infected badgers (wherever the infection originates from) are a potential threat not only to cattle but to other wildlife. Badgers are protected from persecution by the Protection of Badgers Act 1992 and, since the introduction of that Act, it is estimated that the badger population has increased significantly. The wider bio-diversity impacts of this are not known. Badgers are also valued and cherished by wider society. If the best available evidence supported a badger culling or other intervention policy to help control bTB there would be a case for Government intervention. In considering policy options, Government would also need to take into account the value that society places on the conservation of badger populations and the humaneness of any intervention against the benefits of improved bTB controls.

4.8.2 Government policies on bTB need to be assessed against these reasons and together with an assessment of the costs and benefits of intervention, ensure that proportionate interventions take place which strike the right balance on behalf of society.

4.9 How costs should be shared

4.9.1 The reasons for intervention need to be considered against the costs and benefits of intervention, and how the costs should be met. Consistent with the AHWS the livestock farming industry should take a greater ownership of, and financial responsibility for, the animal disease risks posed by bTB. In principle, the taxpayer should only be expected to pay for genuine public good. In introducing specific policies we shall be seeking to strike a fair balance between the taxpayers and the industry. The industry may be asked to pay more in some cases but will be involved in consideration of spending priorities.

4.9.2 Any actions in relation to cost-sharing will be consistent with wider policies on regulation and charging, government spending review settlements and will take account of cumulative burdens on the farming sector. An analysis of the current state of the GB cattle industry is at Annex C.

4.9.3 The primary reason for concern about the current spread of disease and the justification for intervention is the need to reduce the economic cost to both the taxpayer and industry. This is the main driver for additional action to control the disease. The economic benefits to farming industry of a lower incidence of bTB are self-evident, though the cost of surveillance, control and compensation, as well as research, currently falls largely to the taxpayer. Government therefore believes there is a strong case for industry, over time, bearing a progressively greater share of the costs of bTB controls.

4.9.4 Taxpayers cannot be expected to pay for the animal health and welfare costs and risks to farmers which affect their businesses. Cattle farmers must, individually and collectively, take responsibility for managing risks to their herds from bTB. Farmers have not had sufficient incentive in all instances to adopt best practice in terms of biosecurity and husbandry for example. This must be addressed. In relation to pre- /post-movement testing it is proposed that the costs will be shared between farmers and Government (see 1.2.6).

4.9.5 Government's proposed changes to cattle compensation arrangements are aimed at going some way to ensuring the compensation regime/rates do not interfere with disease control objectives. In 2005 Government intends to introduce a compensation scheme based on the average market value of animals. The scheme will classify animals by age, sex, breed and sector. Actual and comprehensive market information will be continuously obtained initially, at least, by the Meat and Livestock Commission (MLC) for each category. These values will provide the basis for the level of compensation to be paid in the event of slaughter. The scheme will reduce the time to remove reactor animals and direct contacts from farms thereby reducing the potential to spread disease within herds.

4.10 Delivering and enforcing standards effectively

4.10.1 Government will aim to develop, deliver and enforce policies in partnership with delivery and enforcement bodies/agencies and those directly affected by the policies.

4.10.2 Animal owners must understand and accept their regulatory obligations as well as their obligations as responsible managers of animals. Government will work to ensure effective communications to raise awareness.

4.10.3 The State Veterinary Service (SVS) will become an Executive Agency on 1 April 2005. This will enable the SVS to develop further its expertise and professionalism, improve its delivery of bTB surveillance and control and build closer links with other operational partners e.g. the VLA, the Meat Hygiene Service and Local Authorities as well as stakeholders. Looking ahead, the SVS will have an increasingly important role in informing stakeholders of new developments and raising awareness. To help facilitate a more regional approach, the SVS will be working increasingly closely with the devolved administrations in Scotland and Wales, Defra and the Government Office network in the English regions.

4.10.4 Local Authorities (LA's) have an important role to play in enforcing current and future bTB control arrangements. The relationship between LA's, Defra and the Welsh Assembly Government have been developed through establishment of a framework agreement. There is currently no bTB work associated with the framework, which is currently linked to post-FMD work only, but there is scope to include bTB in future.

4.10.5 Bovine TB testing and other services provided by private veterinary practices for the SVS are to be put on a contractual footing for the first time once the SVS has become an Agency. Standard operating procedures and enhanced training will be introduced, and rigorously enforced.

4.10.6 Supervised lay testing will provide an additional resource to meet the increased demands for tuberculin testing required by this strategy. It is proposed to take forward lay testing with a pilot scheme using technical staff from the SVS commencing spring 2005.

Regulatory Impact Assessment

1. Title of Proposal

Government strategic framework for the sustainable control of bovine tuberculosis (TB) in Great Britain.

2. Purpose and intended effect of measure

(i) The objective

The strategic framework is the outcome of a review of the Government's TB strategy that has included extensive public consultation and involvement of a core stakeholder group. It aims to bring about a sustainable improvement in the control of bovine TB over the next 10 years. It sets out a vision for the future, defines strategic goals, new commitments, and the principles that will be applied in order to achieve these.

Overall vision:

To develop a new partnership based on the Animal Health and Welfare Strategy (AHWS) so that Government and stakeholders can work together to reduce the economic impact of bTB and maintain public health protection and animal health and welfare. We aim to slow down and prevent the geographic spread of bTB to areas currently free of the disease, and achieve a sustained reduction in disease incidence in cattle in high incidence areas.

The 1998 5-point plan of action will be subsumed within 12 new strategic goals. Key elements will be continued, including effective public health protection, research to develop effective vaccines as part of the wider substantial research programme, regular testing of cattle herds, and the Randomised Badger Culling Trial (RBCT). The strategic goals and new Government commitments are at Appendix 1.

The strategic framework does not attempt to define specific disease control policies to be applied as these will need to be tailored to reflect the regional variation in disease incidence and risk. Control policies will also need to be adjusted over the 10 year life of the TB strategy to make the best use of emerging scientific findings.

In relation to cost-sharing, Government believes there is a strong case for industry, over time, bearing a greater share of the costs of TB controls. ANY FUTURE PROPOSALS WILL TAKE INTO ACCOUNT THE CUMULATIVE BURDENS ON THE SECTOR AND BE SUBJECT TO CONSULTATION.

(ii) The background

At the AGM of the National Farmers' Union in 2003 the Secretary of State for Environment, Food and Rural Affairs announced a review of the Government's TB strategy.

Annex A

Bovine TB is a serious infectious and zoonotic disease of humans and animals. It is present in wildlife within GB. Cattle control measures in place mean the risk to public health is currently very small. Nevertheless, TB is one of the most difficult animal health problems currently faced in GB. There are major regional variations in the incidence of the disease. Around 6% of GB cattle herds were affected by TB restrictions at some point in 2003. Despite the cattle surveillance and control measures in place, the long-term trend is for an increase in incidence in cattle herds of about 18% per annum, with costs to Government and the farming industry increasing year on year.

Government expenditure in 2003/4 including research, was £88 million. See Table 1 below.

Table 1: Breakdown of Government expenditure on tackling TB in cattle (£ million)

Activity	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05 forecast
Cattle Testing	17.6	13.3	5.4	24.7	33.2	36.4
Compensation	5.3	6.6	9.2	31.9	34.4	36.2
RBCT	4.6	6.6	6.0	6.6	7.3	7.4
Other Research	3.8	5.3	6.1	6.5	7.0	5.9
VLA	2.4	3.5	3.7	4.1	5.3	4.9
HQ/Overheads	4.5	0.9	0.1	0.7	1.0	1.3
TOTALS	38.2	36.2	30.5	74.5	88.2	92.0

On industry costs, a recent survey conducted by the University of Reading found that 79% of dairy farmers and 65% of beef farmers suffered net losses from a TB breakdown of up to £17,000 per farm. The full economic cost of a breakdown is higher, as public sector costs of compensation, additional testing, and the financial risk of further spread of the disease need to be included. Farmers may also incur costs from TB breakdowns if cash-flow is adversely affected.

The main vehicle for controlling TB has been cattle surveillance and slaughter of affected animals, accompanied by slaughterhouse inspections and tracings from affected herds. In some other countries with TB, cattle control measures similar to those in place in GB seem to have been effective in managing the disease in the absence of a wildlife reservoir. Understanding and addressing the threat from wildlife, particularly badgers, poses a major scientific challenge and is the key issue for stakeholders.

The RBCT, which started in 1998 and is scheduled by the Independent Scientific Group to report to Defra Ministers in 2007, is intended to establish whether culling of badgers is an effective means of controlling the spread of TB in cattle. Government needs to plan for the possible outcomes of that trial so policy options can be developed. Pending the outcome of that trial or emergence of other relevant evidence, including analysis of the Republic of Ireland Four Areas Badger Culling Study, no badger culling outside of the trial areas has been permitted in England. TB is a devolved issue so Wales and Scotland could adopt differing policies in this and other regards.

Vaccination offers a potential but long-term addition to our disease control tools and continued investment in research is a key element of our approach. Vaccine development is a long term programme and we are not anticipating that an effective vaccine will be developed and licensed for use within the 10 year timeframe of this strategy.

Farming, veterinary and wildlife conservation interests hold strongly contending views on how TB should be controlled.

Following consultation in 2004, new measures to strengthen cattle surveillance and controls were introduced across GB in November 2004. Additionally, a stakeholder group is currently working to develop a proposal for introduction of a statutory requirement for pre-movement testing of cattle to reduce the risk of spread of disease due to cattle movements. This is a key measure for achievement of Defra's PSA9 target. In Scotland, farmers will also be required to carry out post-movement testing. The cost of these tests will be shared between farmers and Government. The detailed proposal will be subject to consultation.

(iii) Risk assessment

The animal health and welfare risks from TB are minimised through the Government funded cattle surveillance and control programme that requires slaughter of cattle identified as being infected with TB and puts affected farms under movement restrictions until they are clear of the disease. In 2002 this necessitated slaughter of 22,000 cattle, at a cost to the taxpayer of £31 million.

The trend is for increasing incidence of disease despite current controls which risks increasing costs to Government and industry. Government expenditure on TB amounted to £88million in 2003/4 and is forecast to rise to £92 million in 2004/5. Large animal veterinary practices in some parts of the country are heavily reliant on the income from routine TB surveillance testing carried out on behalf of Government.

The Veterinary Laboratories Agency (VLA) have extrapolated the trends in numbers of cattle tests and numbers of slaughtered reactors to 2010 to demonstrate what might happen if no action is taken to reduce the spread of TB. This is considered to be a "worst case" scenario. The trends show slaughterings rising from 23,000 to 66,000 and animals tested rising from 5 million to 9 million. If these outcomes were realised, public expenditure on testing and compensation would rise from £68 million in 2004 to £145 million in 2010. Costs to industry would also increase. Note: the 2010 figure takes account of the expected impact of a change in compensation regime, which would reduce the compensation rate per animal slaughtered to be closer to the true market value.

Public health risks arising from bTB are minimal though there is a need for continued monitoring. To date, the increase in incidence of disease in cattle has not been accompanied by an increased incidence of disease in humans. Consumers are protected as a result of the cattle surveillance and control regime, meat inspections in slaughterhouses and pasteurisation of milk. Occupational risks are subject to guidance from the Health and Safety Executive (HSE). There is a wildlife reservoir of bTB infection that poses potential risks to the general public, and there is also a potential risk of spillover into domestic/companion animals.

In light of the above, the primary reason for intervention over and above the existing controls is to reduce economic impact for both the taxpayer and industry.

3. Options

The strategic framework will not have a statutory impact nor require new regulations to implement it. New disease control policies arising from it may require statutory measures. These will be subject to separate RIA's.

Effectively we have limited choices:

Option 1: do nothing

Government could continue working under the 1998 5-point plan. It does not promote a regional, risk-based approach, to allow disease control policies to be tailored according to incidence of the disease. Finally, it does not provide for preparation of a way forward on badger culling in light of the outcomes of the RBCT or other emerging evidence. With development of an effective vaccine thought to be 10 years away, a 'do nothing' option offers little hope to farmers in areas of the country with high incidence of bTB.

Option 2: develop and implement a strategic framework in partnership with stakeholders, which aims to bring about a sustainable improvement in the control of bovine TB over the next 10 years

This builds on and replaces the 5-point plan of action and applies the principles of the Animal Health and Welfare Strategy to bovine TB. It sets out a vision for the future, defines 12 strategic goals, new commitments, and the principles that will be applied in order to achieve these.

4. Benefits

These will be difficult to measure as they will be associated with any measures adopted within the strategic framework.

Option 1 – do nothing

Economic: Assuming current disease trends continue, costs of the disease to both industry and the taxpayer would continue to increase. Sectors of the cattle farming industry would continue to take the view that the burden of responsibility and costs for the control of bTB rests with the Government and fail to reap benefits of a partnership approach. Strengthened cattle surveillance measures are already being rolled out and their impact will be monitored.

Environmental/social: Public health risks under the current controls remain very low. It is difficult to identify any other environmental or social benefits of this option.

Option 2 – develop and implement a strategic framework in partnership with stakeholders

It is intended that the new strategic framework would be implemented in partnership with stakeholders including delivery agents. This will encourage ownership and commitment from all parties which is needed to prevent further spread of TB and ensure a more sustainable approach that takes account of wider societal interests and concerns as well as those of taxpayers and farmers.

Economic: The primary reason for intervention over and above the existing controls is to reduce economic impact for both the taxpayer and industry. On that basis, Government believes there is a strong case for industry, over time, bearing a greater share of the costs of TB controls. The economic benefits to the farming industry of a lower incidence of TB are self-evident and, consistent with the principles in the AHWS, the Strategic Framework will seek to promote best farm practice and ensure farmers are incentivised accordingly.

The strategic framework will allow, within a national framework, disease control measures to be tailored according to incidence and risk. This approach has the potential to be more economically effective.

Ensuring the reasons for Government intervention are clear will pave the way for the costs of TB controls to be shared more fairly between beneficiaries.

Establishing a strategic framework for action may be criticised by parts of the farming industry, which believe the economic impact of bTB would be reduced if there were a policy decision to tackle the wildlife reservoir of bTB. Current policy is that there is not currently the scientific evidence to justify a badger culling policy in Great Britain. Meanwhile, analysis of the results of the reactive treatment of the RBCT and the proactive treatment continues. Evidence from the RoI trial has now been published. This is being considered and the data will inform the development of the model/cost-benefit analysis that will help to inform policy decisions on badger culling, which will also take into account welfare, wildlife conservation and views of wider society.

Environmental/social: Social benefits will arise from the continued protection of public health and continued protection of animal health and welfare. Having a transparent process for making decisions on whether badger culling may form part of future policy will ensure Government is prepared for the outcomes of the RBCT and stakeholders can be satisfied that wildlife conservation and welfare issues are considered alongside practicality and cost-benefit. Partnership working and more effective communications with stakeholders will mean there is a wider ownership and understanding of the disease and possible control strategies.

5. Costs

It is difficult to associate direct costs with a strategic framework as they will be incurred for measures agreed within the framework rather than in the adoption of the strategy itself.

Option 1 – do nothing

Economic: We would expect the current trends for increase in incidence and spread of the disease to continue. Costs for both the Government and industry will also continue to increase. Costs to government arise from the lack of incentives for the cattle industry to take greater responsibility for control of the disease, a key principle of the AHWS. Costs may also arise from Government having no process for assessing scientific evidence from the RBCT or other trials and informing policy decisions on whether badger culling is a viable disease control policy.

Environmental/social: There are social costs associated with continuing hardship and suffering of farmers in TB hotspot areas. Doing nothing offers little hope for these farmers.

Option 2 – develop and implement a strategic framework in partnership with stakeholders

Economic: The introduction of a strategic framework will not, in itself have cost implications though it provides the potential, through working in partnership, to reduce the economic burdens of the disease to both industry and the taxpayer. It will provide greater transparency of the rationale and basis for statutory and other measures adopted as part of the strategy.

Consistent with the AHWS the Government believes that the cattle farming industry should take a greater ownership of, and financial responsibility for, the animal disease risks posed by bTB. In principle, the taxpayer should only be expected to pay for genuine public goods. In introducing specific policies Government shall be seeking to strike a fair balance between the taxpayers and the industry. The industry may be asked to pay more in some cases but will be involved in consideration of spending priorities e.g pre-movement testing.

Any actions in relation to cost-sharing will be consistent with wider policies on regulation and charging, government spending review settlements and will take account of cumulative burdens on the farming sector.

The primary reason for concern about the current spread of disease and the justification for intervention is the need to reduce the economic cost to both the taxpayer and industry. This is the main driver for additional action to control the disease. The economic benefits to the farming industry of a lower incidence of bTB are self-evident, though the cost of surveillance, control and compensation, as well as research, currently falls largely to the taxpayer.

Taxpayers cannot be expected to pay for the animal health and welfare costs and risks to farmers which affect their businesses. Cattle farmers must, individually and collectively, take responsibility for managing risks to their herds from bTB. Farmers have not had sufficient incentive in all instances to adopt best practice in terms of biosecurity and husbandry for example. This must be addressed.

Government's proposed changes to cattle compensation arrangements are aimed at going some way to ensuring the compensation regime/rates do not interfere with disease control objectives.

The development of policies associated with the strategy will be informed by impact analysis. These will be subject to separate consultation.

Environmental/social: It is difficult to identify specific environmental or social costs associated with introducing a strategic framework.

6. Equity and fairness

The strategic framework encourages farmers in particular to review their roles and responsibilities in relation to bTB controls. Government will be looking to farmers to, over time, bear a greater share of the costs of bTB controls. This will be done taking account of the overall regulatory and cost burden on farmers. Inevitably however, farms already supporting best practice in terms of herd health planning and biosecurity to protect their herds from bTB will be better positioned to respond to these demands than farms who need to raise their standards.

7. Consultation with small business: the Small Firms' Impact Test

The majority of cattle farms are small businesses. These businesses have been engaged as part of the public consultation process including membership of the core stakeholder group. The strategic framework will not in itself have an impact on these businesses, but policy measures developed within the strategic framework are likely to have a disproportionate impact on this sector. Individual RIA's will be generated for any specific measure and the Small Business Service will be consulted prior to wider consultation.

8. Competition Assessment

Competition will not be affected by the new bTB strategy, and is likely to be affected only minimally by other policies arising from it, although this will be judged as new policies are put forward. No cattle holding has more than 10% market share and the three largest have less than 50%. No costs are explicitly outlined in the strategy, so we cannot assess whether costs of regulation would affect some holdings more than others, whether the structure of the industry may be affected, or whether new set-up or ongoing costs will be incurred. The sector is not characterised by rapid technological change, and the price, location, quality and range of cattle farm produce will not be affected.

Since this strategy document is a framework for decision making, subsequent policies, such as pre-movement testing, will be subject to specific competition assessments.

9. Enforcement and sanctions

This will be an issue for specific disease control measures developed under the strategic framework. Introduction of the framework will have no direct legislative impact on farmers and stakeholders but does provide opportunities for better regulation and policy making.

Additional costs which fall on Local Authorities will be reimbursed by Defra. Under the new burdens arrangement Defra, along with all Government Departments, are responsible for fully funding the costs of their policies which impact on local authorities. Consideration of the costs to Government and Local Authorities of new policies associated with the strategy will be informed by separate impact analysis.

10. Monitoring and Review

The strategic framework defines specific goals and delivery commitments. There will be an annual reporting process, through the proposed annual conference and the new national stakeholder body, which will be key in managing delivery of this strategic framework.

11. Consultation

i) Within government

Defra has consulted all Government Departments and agencies with a direct interest in TB controls, including the Cabinet Office. Defra has worked closely with the devolved administrations in Wales and Scotland and have kept colleagues in Northern Ireland informed.

ii) Public Consultation

There was extensive public consultation in England, Scotland and Wales in February 2004. As well as a 4 month period for written responses, there were regional stakeholder meetings within England, Scotland and Wales and a national meeting in London. There were over 120 written responses to the consultation, and over 400 participants in regional meetings across GB. A summary of the responses to the consultation and reports of the regional meetings in England are on Defra's website. A core stakeholder group has helped steer the drafting of the strategy to help ensure appropriate weight and balance is given to stakeholder perspectives.

12. Summary and Recommendation

To do nothing in addition to existing controls/surveillance would not take forward the AHWS in relation to bTB, particularly in relation to cost-sharing and partnership, and would not prepare the ground for policy decisions on whether or not to introduce a badger culling policy. A strategic framework provides the opportunity for Government to work in partnership with stakeholders to develop a more sustainable and effective approach to bTB that ensures public and animal health and welfare is protected and the economic impact of the disease is reduced. There will be scope for stakeholder interests to be balanced, responsibilities to be understood and costs to be shared fairly.

13. Declaration

I have read the regulatory impact assessment and I am satisfied that the benefits justify the costs.

Signed 

BEN BRADSHAW

February 2005

BEN BRADSHAW

Parliamentary Under-Secretary of State

Department for Environment, Food and Rural Affairs

Contact

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Appendix

The twelve strategic goals have been identified to deliver this vision:

1. To ensure minimal risks to **public health** from exposure to bTB through continuing cattle surveillance and control, slaughterhouse inspections and heat treatment of milk, occupational health controls and monitoring for human cases of bTB.
2. To have a **regional approach** to the control of bTB which will slow down and stop the geographic spread of bTB to areas currently free of the disease and achieve a sustained and steady reduction in disease incidence in current high incidence areas.
3. Government, delivery agents and stakeholders work in **partnership**, in full recognition of their roles and responsibilities, sharing ownership of disease control and prevention.
4. To have a **transparent process** for making decisions on whether badger culling may form part of future policy, and what form (if any) such culling would take, in light of the results of the RBCT and any other relevant evidence.
5. **Cattle surveillance and control** is effective, delivered efficiently, and provides good value for money. Cattle welfare continues not to be compromised by bTB, and more effective controls offer scope to improve the welfare of wildlife. Disease incidents in new areas are dealt with promptly and efficiently to prevent the establishment of new potential hotspots. Surveillance information is published regularly and is up to date, providing a reliable information base for those advising and enabling local risk-based decision making.
6. Government will continue to develop a **sound scientific evidence base** by supporting research to improve our understanding of the disease and generate new tools, particularly in relation to diagnostics and vaccines. It is hoped that this will deliver the prospect of eventual eradication of bTB in cattle. The research outputs will be available and accessible to all interested parties to help improve understanding of risks and risk management.
7. To have arrangements consistent with Government guidelines and policy for securing **independent scientific advice**.
8. There is a wider understanding of the disease and possible control strategies, aided by **effective communications** through national regional and local networks.
9. Reasons for **Government intervention** are clear and costs of bTB controls are shared fairly between beneficiaries.
10. Standards are delivered and **enforced** effectively.
11. To continue to influence and comply with **EU and international rules** relating to bTB and learn from what has been achieved in other countries.
12. Achieving a common understanding of, and widespread adoption of **herd health planning** both within the cattle industry and the veterinary profession that advises it, with a strong emphasis on disease prevention. This is a commitment from the Animal Health and Welfare Strategy and not developed further in this document.

The strategic framework also introduces a number of new government commitments:

- Develop a transparent process for making policy decisions on whether badger culling may form part of future policy in light of existing and emerging evidence.
- Build into the policy making process a better understanding of public opinion on bTB policies.
- Establish **by the end of 2005** a new national bTB stakeholder body to advise on the development of bTB policies including how best to ensure regional focus.
- Improve communications with stakeholders, replacing the TB Forum with an annual conference, maintaining direct contact with stakeholders on specific issues, and keeping a research delivery plan on Defra's website.
- Review and publish on an annual basis the evidence base for bTB, to help inform policy development.
- Review and establish **by the end of 2006** new arrangements for securing independent scientific advice that are consistent with wider Government policy on scientific advice and the establishment of advisory groups.
- Improve availability of information on bTB; raise awareness and understanding of bTB issues amongst all stakeholders.

Annex B

Delivery plan for Government funded bTB research

Code	Project (plus weblink, if available)	Contractor	Start Date	Expected Finish Date	Total Cost (£)
Surveillance/Post mortem Projects					
SB4011	Provision of Tuberculin www.defra.gov.uk/animalh/tb/control/p4skin.htm	Defra	50+ years ago by MAFF	Ongoing	1,280,031*
SB4300	Surveillance for Bovine Tuberculosis – Infection status of cattle, farmed deer and exotic farmed species in Great Britain	Defra (VLA)	10+ years ago by MAFF	Ongoing	2,186,715*
SB4310	TB in cattle post-mortem at VLA Regional Laboratories	Defra (VLA)	10+ years ago by MAFF	Ongoing	16,080*
SB4400	Surveillance for Bovine Tuberculosis – Infection status of badgers and other wildlife species	Defra (VLA)	10+ years ago by MAFF	Ongoing	366,174*
SB4510	TB in species apart from badgers and cattle	Defra (VLA)	10+ years ago by MAFF	Ongoing	55,810*
SB4004	A comparison of the standard and extended post mortem protocol to detect mycobacterial infection in the badger	Defra (VLA)	01 04 04	31 03 05	46,786*
SE3033	Housing of naturally infected cattle (field reactors) at VLA for immunological and bacteriological analysis Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (VLA)	01 04 04	30 09 07	775,076
Vaccines & Diagnostic Projects					
SE3028	The development of improved tests for the diagnosis of <i>Mycobacterium bovis</i> infection in cattle Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (VLA)	01 04 02	31 03 05	428,428
SE3215	Development of immunological assays for the detection of <i>Mycobacterium bovis</i> infection in badgers & Badger Vaccines: NEC Safety Study for ATC Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (VLA)	01 04 02	31 03 05	525,041
SE3216	Development and testing of vaccines against badger tuberculosis Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (VLA)	01 04 02	31 03 05	477,994
SE3217	Kinetics of skin test response in bovine TB Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	IAH	01 01 04	31 03 05	252,100
–	Badger Vaccines: Efficacy Study	Defra	Under consideration	Under consideration	Not known
–	Badger Vaccines: Large Field Trial (effect on Cattle TB)	Defra	Under consideration	Under consideration	Not known
–	UK Cattle Vaccine Study	Defra	Under consideration	Under consideration	Not known
SB4008	IFN Trial (www.defra.gov.uk/animalh/tb/control/gammapilot.htm)	Defra	28 10 02	On-going	265,392*
–	IFN Specificity Trial	Defra	Under consideration	Under consideration	Not known

Annex B

Delivery plan for Government funded bTB research (*continued*)

Code	Project (plus weblink, if available)	Contractor	Start Date	Expected Finish Date	Total Cost (£)
Epidemiological Projects					
SB4520	TB99 Epidemiological Survey www.defra.gov.uk/animalh/tb/trans/p3tb99.htm	Defra	01 01 99	31 12 04	243,620
Not yet allocated	CCS 2005 Epidemiological Survey	Defra	01 01 05	31 12 05	Not yet confirmed
SE3008	Detection and enumeration of <i>Mycobacterium bovis</i> from clinical and environmental samples Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (VLA)	01 04 99	31 12 04	548,808
SE3026	Bovine TB transmission in restocked herds: risk factors and dynamics Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Warwick University	01 06 02	31 03 06	1,114,496
SE3030	Application of postgenomics to reveal the basis of virulence, pathogenesis and transmissibility of <i>M. bovis</i> Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (VLA)	01 04 01	31 03 06	3,318,624
Cattle Pathogenesis Projects					
SE3013	Pathogenesis and diagnosis of tuberculosis in cattle – complementary field studies Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (VLA)	01 10 00	31 03 05	2,850,729
SE3024	Low dose TB infection in cattle: disease dynamics and diagnostic strategies Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	QUB & Defra (VLA)	01 10 02	30 09 06	2,560,207
SE3027	Pathogenesis and immunology of <i>Mycobacterium bovis</i> infection in cattle Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	IAH	01 04 02	31 03 05	1,260,135
Badger Ecological Projects					
SE3029	An investigation of potential badger/cattle interactions and how cattle husbandry methods may limit these Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (CSL)	01 01 03	31 12 05	556,851
SE3032	The long term intensive ecological and epidemiological investigation of a badger population Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (CSL)	01 04 03	31 03 05	626,715
SE3107	Develop Innovative Methods to Estimate Badger Population Density Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (CSL)	01 04 99	31 03 05	1,150,521
SE3110	A molecular genetic analysis of badger social structure and bovine TB Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (CSL)	01 01 00	31 03 06	1,094,055
ZF0531	The ecological consequences of removing badgers from an ecosystem Use search facility for project code in: www.defra.gov.uk/research/Project_Data/Default.asp	Defra (CSL)	01 02 99	31 03 05	1,507,627

Delivery plan for Government funded bTB research

Delivery plan for Government funded bTB research (*continued*)

Code	Project (plus weblink, if available)	Contractor	Start Date	Expected Finish Date	Total Cost (£)
Other Projects					
SB4410	Seven Counties Road Traffic Accident Survey www.defra.gov.uk/news/newsrel/2000/001107a.htm	Defra	01 11 00	On-going, likely to end when RBCT ends	171,584*
–	Furness Peninsula Road Traffic Accident Survey	Defra	01 01 04	On-going	Dependent on numbers of wildlife found
–	Randomised Badger Culling Trial www.defra.gov.uk/animalh/tb/culling/index.htm	Defra	01 10 98	2006	Approx £45 million

* denotes the estimated costs for the Financial Year 2004/05 for a long-term project

December 2004

An economic overview of the GB Cattle Industry

Summary

The GB cattle industry is based on a herd of 1.9 million dairy cows and 1.4 million beef cows. It produces over £4 billion output per year at farm-gate prices, of which around £2.3 billion comes from the milk sector and £1.8 billion from the beef sector.

In the dairy industry there is a long term downward trend in demand. Together with the quota system, this has kept a ceiling on output. As average milk yields have steadily risen, dairy cow numbers have fallen. Pressures for greater efficiency have led to a rapid increase in average herd size and a reduction in the number of dairy holdings. Since 1990, four out of ten producers have gone out of milk. Net farm income on dairy farms rose in the early 1990s as efficiency gains and a strong EUR/GBP exchange rate combined, although incomes have since fallen back.

Beef has suffered a long term decline in demand in the face of price competition from poultry meat. In 1996, BSE was a major shock to the market, resulting in exports of beef being banned and GB consumption of beef and veal dropping sharply. The Over Thirty Months Scheme (OTMS) assisted in restoring public confidence; its ending will divert a significant volume of beef back onto the market. Suckler cow numbers are similar now to those of 1990. The reform of the Common Agricultural Policy (CAP) has decoupled subsidies from cattle numbers and is widely expected to result in a contraction of the suckler herd.

Supply

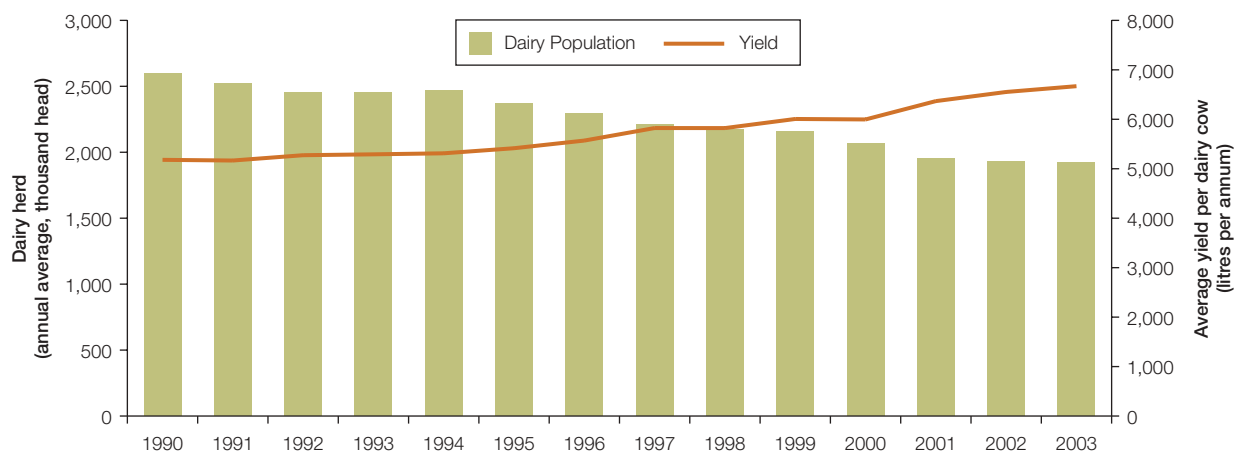
Cattle Numbers

Total cattle numbers in GB have decreased since 1990. Most of this trend can be accounted for by the reduction in the dairy herd. A one-off, greater than average reduction in cattle population occurred in 2001, when the population fell by around 500,000, as a result of the Foot and Mouth outbreak.

Genetic improvements have led to an increase in milk yields, but total milk production has been fairly stable due to the limits of milk quota. Since 1990 milk yields have risen from 5200 to 6700 litres per cow per year, and dairy cow numbers have fallen from 2.6 million to 1.9 million. This trend is expected to continue.

An economic overview of the GB Cattle Industry

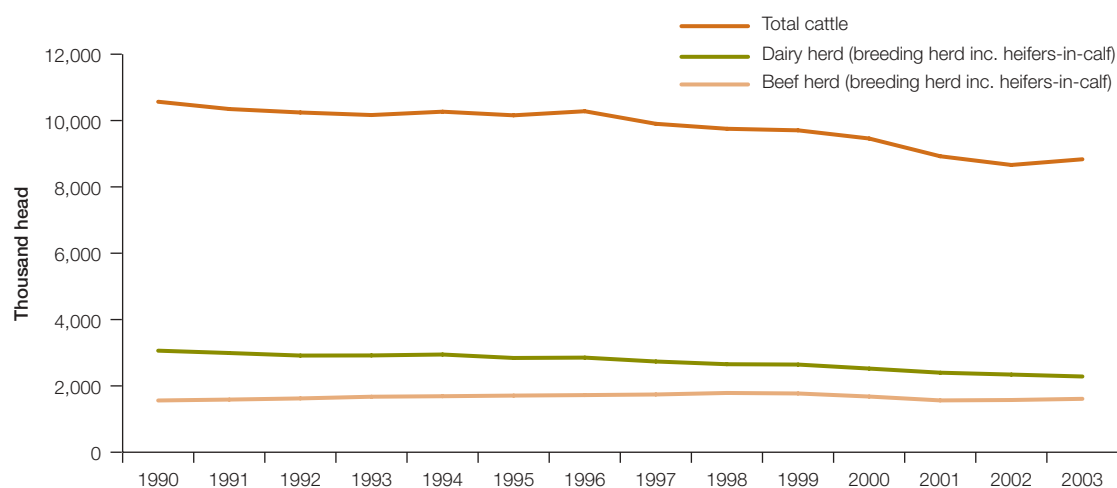
Graph C1: GB dairy cow population and yield



Source: Defra, SEERAD, WAG

In comparison with the dairy herd the breeding beef herd has been relatively stable since 1990. However, under decoupling arrangements in recently agreed CAP reform it is generally expected that beef cow numbers will decrease. In June 2003 approximately 50 per cent of beef cows were located in England, 15 per cent in Wales and 35 per cent in Scotland.

Graph C2: GB cattle population



Source: Defra

Structure

The average numbers of cows per holding has increased for both dairy and beef sectors (see table and chart below). Scotland has the highest average dairy cows per holding (95 in 2003) and Wales the lowest (71 in 2003). Scotland also has the highest average beef cows per holding (50 in 2003), which is markedly greater than in England and Wales (27 and 25 per holding, respectively).

Table C3

	1990	1995	2000	2002	2003
Dairy cow numbers (thousand head)	2,571	2,331	2,051	1,929	1,902
Average number of dairy cows per holding	67	71	77	84	88
Number of holdings (thousand holdings)	39	33	27	23	22
Beef cow numbers (thousand head)	1,363	1,532	1,524	1,350	1,405
Average number of beef cows per holding	26	29	33	33	34
Number of holdings (thousand holdings)	58	55	51	45	45

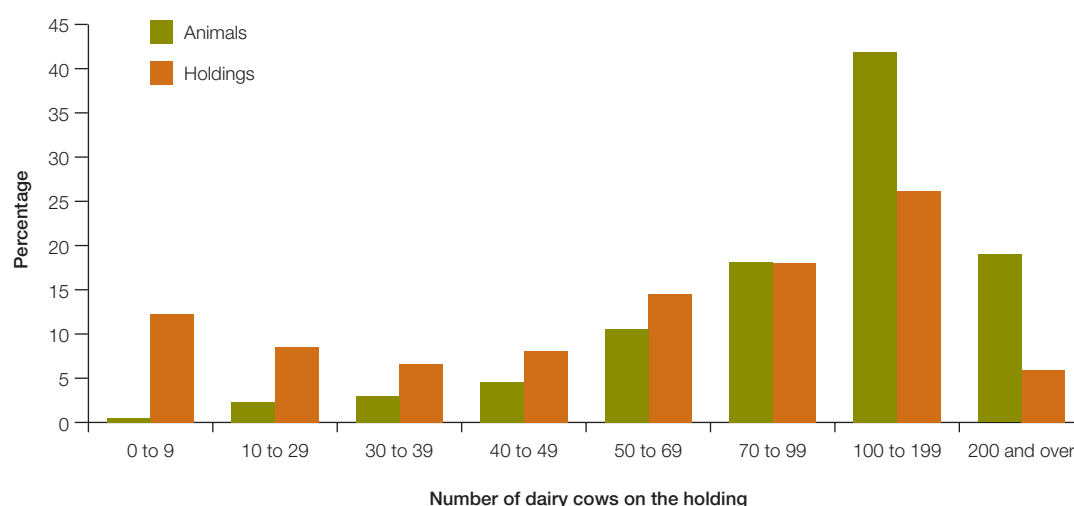
Source: Defra, SEERAD, WAG

The Graphs C4 and C5 show the distribution of beef and dairy herd size, by number of animals and by holding types.

Almost half of the breeding herd of dairy cows in GB are in herds of between 100 and 199 animals.

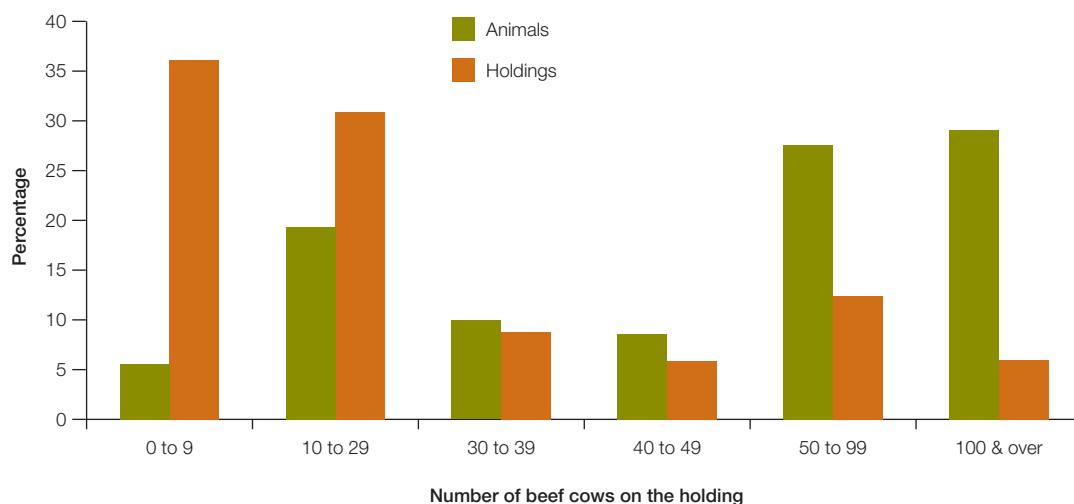
Although the average number of beef cows per holding was 34 in 2003 for GB as a whole, around 36 per cent of holdings with beef cows had less than 10 beef cows.

Graph C4: Number of dairy cows on the holding as a percentage of all dairy cows in GB; and number of holdings by size as a percentage of holdings with dairy cows, June 2003



Source: Defra, SEERAD, WAG

Graph C5: Number of beef cows on the holding as a percentage of all beef cows in GB; and number of holdings by size as a percentage of holdings with beef cows, June 2003

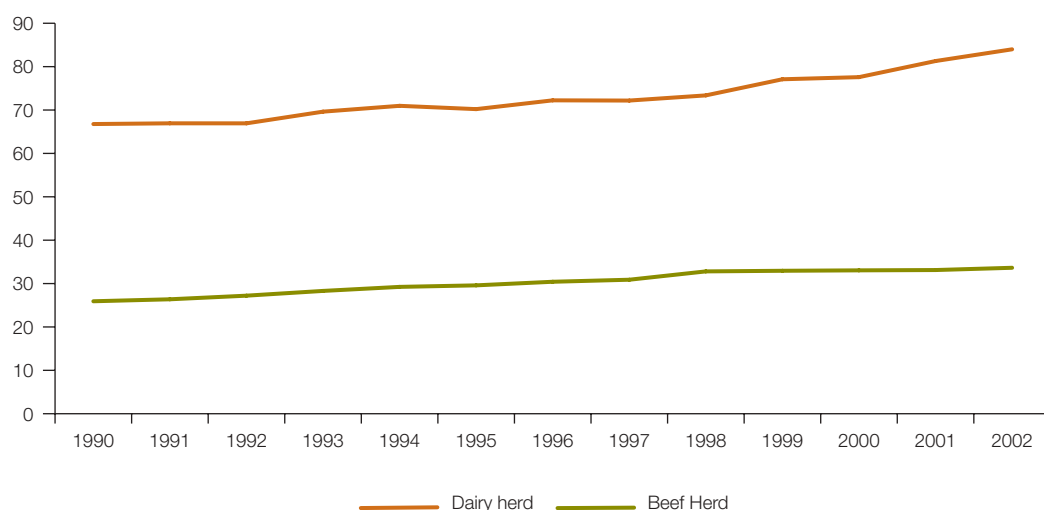


Source: Defra, SEERAD, WAG

The trends shown in Graph C5 and C6 are expected to continue. Past trends suggest an estimated reduction in total cattle of around 1.5% a year, a rate of change which is expected to increase with the impact of decoupling on the beef sector.

The annual reduction in total holdings is expected to be around 4% and average herd size (beef and dairy) is expected to increase by around 1% a year.

Graph C6: GB: average number of cows per holding, by cow type



Source: Defra, SEERAD, WAG

Cattle movements in GB in 2003

Table C7 shows the number of cattle movements recorded in GB in 2003. The 'other' premises include movements to/from showgrounds, competitions, ports, vets, zoos, artificial breeding centres and collection centres (except for Scotland, where collection centres are not recognised).

Table C7

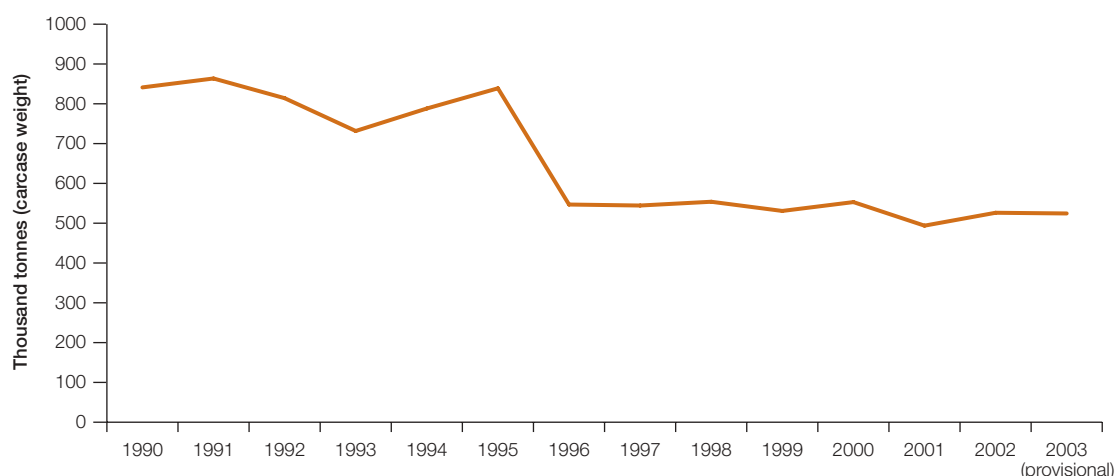
Premises	Movements from the premises (thousand head)	Movements onto the premises (thousand head)
Farm	6,971	3,663
Livestock Market	2,467	2,459
Slaughterhouse	0	3,140
Other Premises	55	54
Total	9,493	9,316

Source: Cattle Tracing System

Production

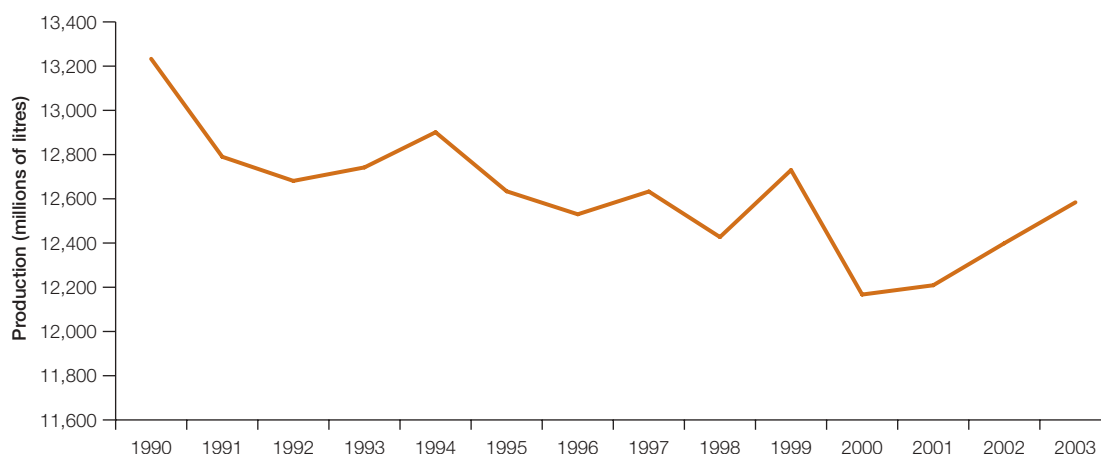
Decreasing beef production is an EU-wide trend. The OECD (Agricultural Outlook 2004-2013) projects that this downward trend will continue. The ending of the OTMS in the UK could result in up to 800,000 extra cattle entering the food chain. In 2003 the total value of production of cattle and calves in GB was around £1.8 billion at farm-gate prices.

Graph C8: GB cattle production



Source: Defra MLC

Graph C9: GB milk production

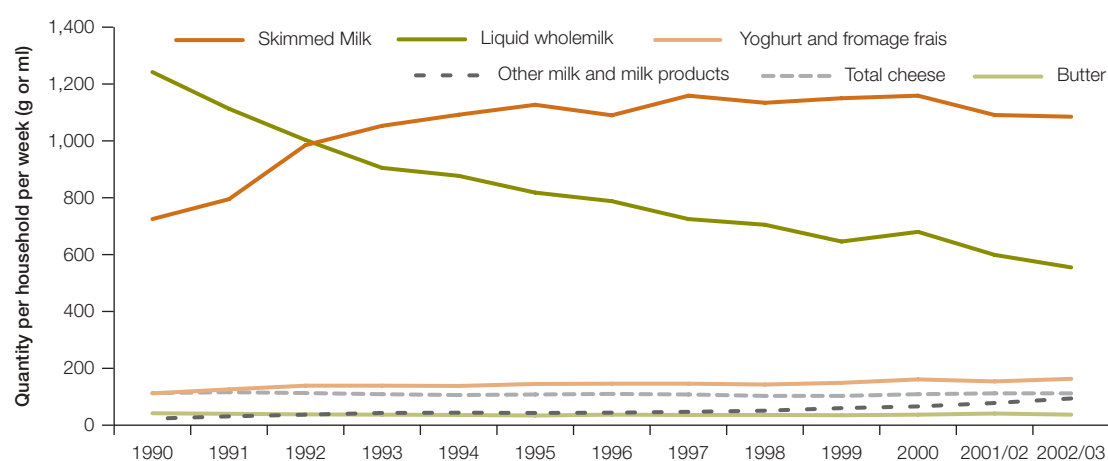


Source: Defra

Demand

Overall liquid milk consumption has decreased since 1990. However, consumption of skimmed milk has increased at the expense of whole milk. For dairy products, the picture is mixed: butter consumption is in decline, but cheese and yoghurts show an increase since 1990.

Graph C10: GB/UK consumption of milk and milk products, by product type

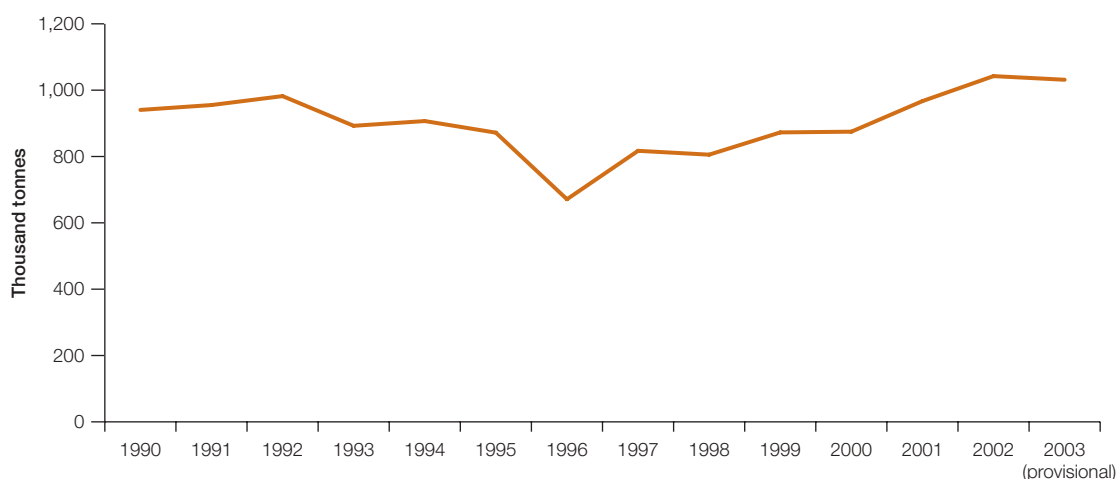


Source: Defra, EFS, NFS (before 2001) – figures adjusted for comparison

Annex C

Consumption of beef and veal has decreased from around 21% of the total consumption of carcase meat and fish in 1990, to around 18% in 2002/03. However, this represents a recovery since 1996, when beef and veal represented just 15% of the overall consumption of carcase meat and fish.

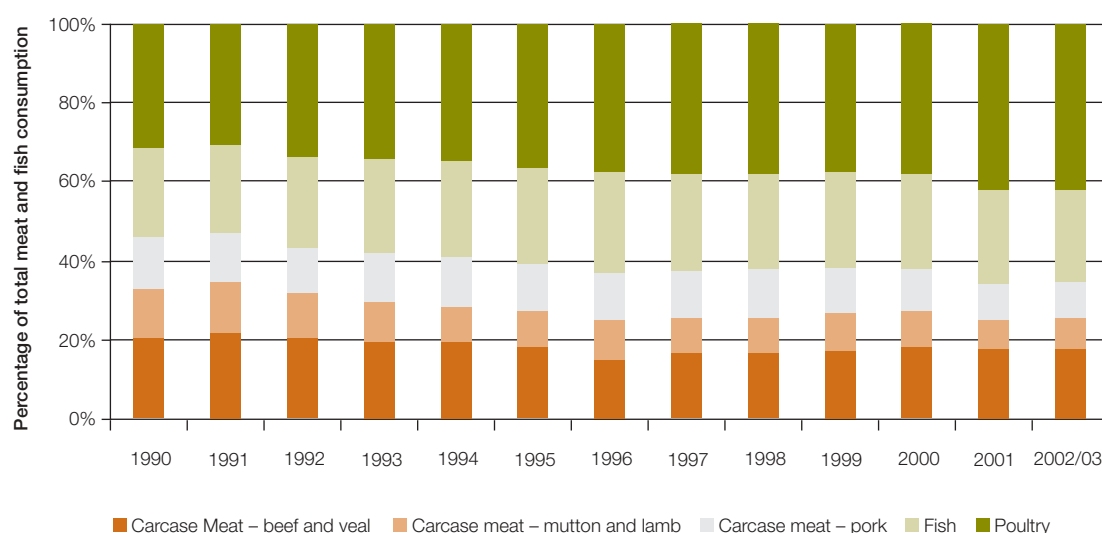
Graph C11: GB: gross human consumption of beef and veal



Source: Defra, Eurostat

The sharp decline and subsequent recovery in beef consumption post 1996 (following vCJD linkages with BSE) has obscured the long term trend. Consumption of red meats as a whole has decreased, with consumers switching to poultry meat.

Graph C12: Proportion of total GB/UK household consumption of meat and fish, by product type



Source: Defra, EFS, NFS (before 2001) – figures adjusted for comparison

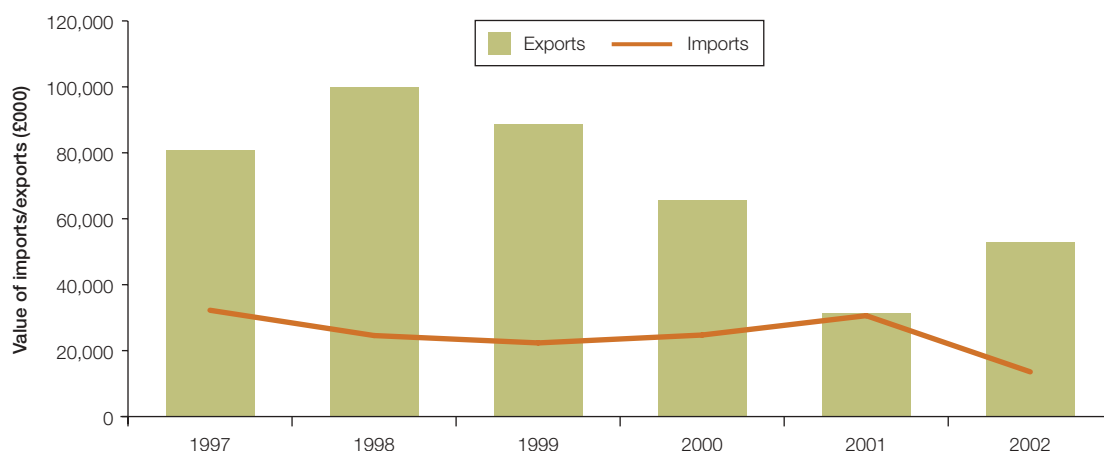
Trade

Trade in Milk and Milk Products

Trade figures for milk and milk products are generally collected at a UK level. Charts for imports and exports of these commodities are presented (below) to illustrate medium-term trends. Cheese imports have increased markedly since 1990. Exports are mainly low value milk powder.

Trade data in milk, skim milk and cream at a GB level since 1997 are available (Graph C13).

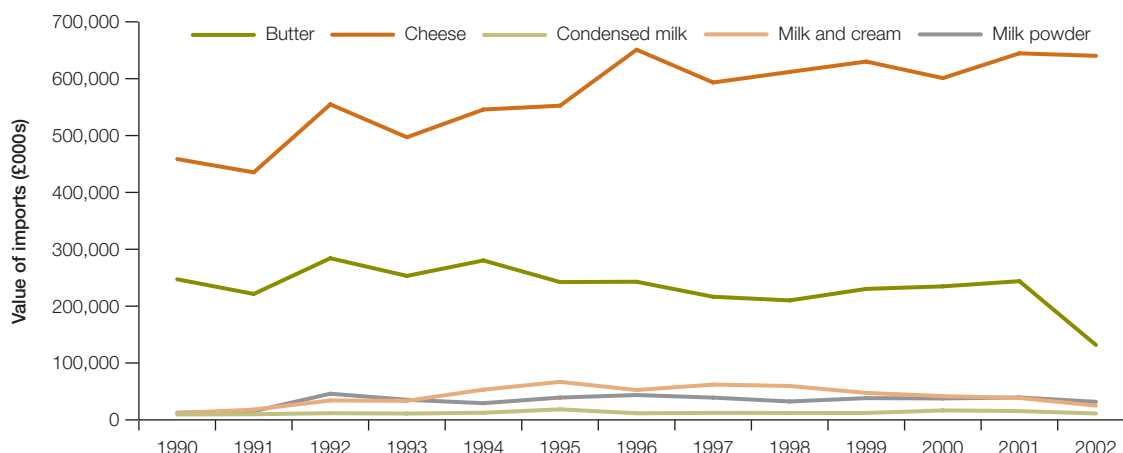
Graph C13: GB trade in whole milk, skim milk and cream



Source: Defra, Overseas Trade Data System (MOTS)

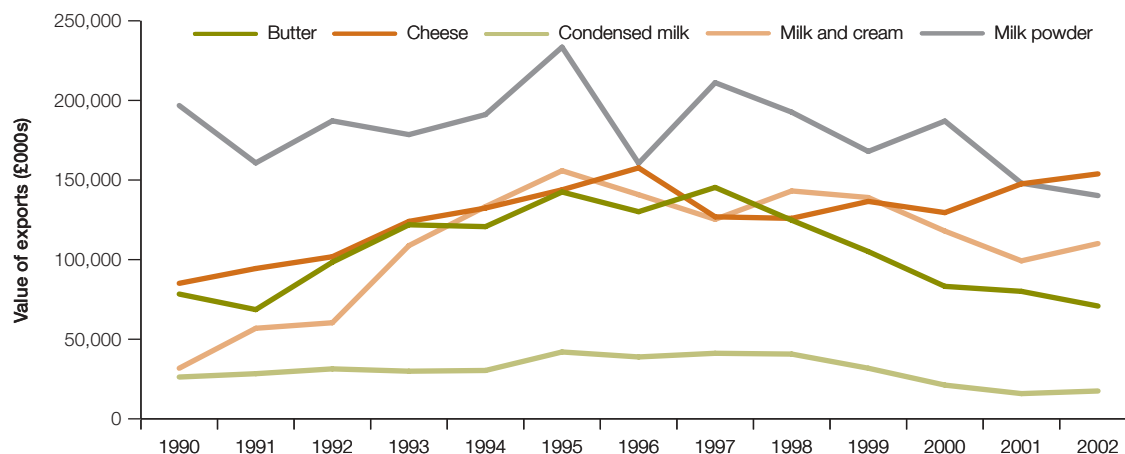
GB is approximately self-sufficient in milk and milk products, with a small surplus averaging 2% of the total value of production since 1990.

Graph C14: UK imports of milk and milk products



Source: Defra Overseas Trade Data System (MOTS), Customs and Excise

Graph C15: UK exports of milk and milk products



Source: Defra Overseas Trade Data System (MOTS), Customs and Excise

Trade in Beef

Exports of British beef (both of carcase meat and trade in live animals) ceased following the 1996 export ban imposed as a result of the BSE scare. This ban has been partially lifted, but under very prescriptive restrictions. Exports are therefore at a very low level currently. It is likely that the end of the OTM rule will eventually have a large impact on trade, both by increasing exports, and the smaller effect of domestic beef substituting for imports.

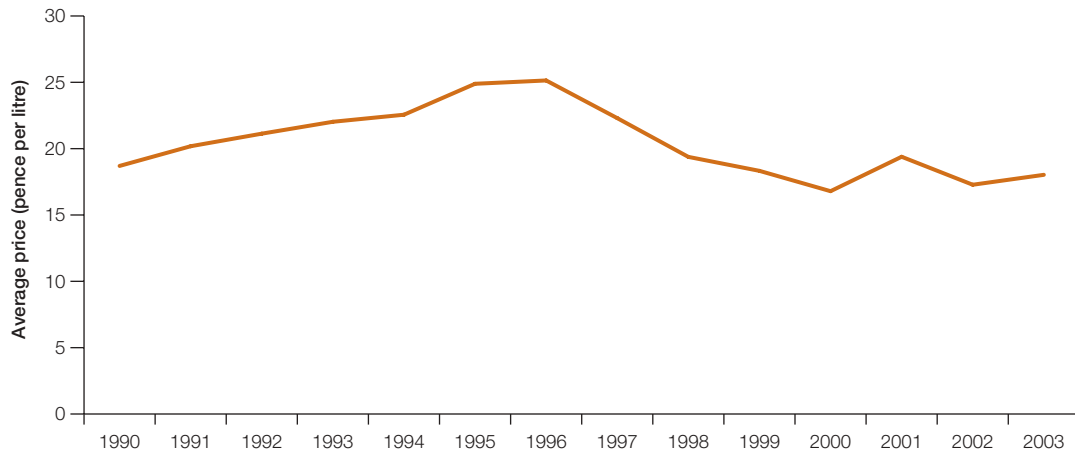
Economic Prospects

Prices

The following charts show the movements in farmgate prices since 1990. Prices are affected by many factors, including inflation, seasonality, currency exchange rates and consumer confidence, all of which can affect the demand and supply of commodities.

An economic overview of the GB Cattle Industry

Graph C16: Annual average GB farm gate milk price (including bonus)



Source: Defra, MLC

Milk prices have fluctuated between 14.6 and 26.0p per litre over the period. Milk prices are at a historically low level. The OECD expects world prices to pick up following the world trough in 2002, although the EU domestic market is insulated to a great extent from global market forces by the CAP.

Beef and cattle prices have been affected by exchange rates and demand shocks. BSE and FMD outbreaks had large effects on the price of clean cattle, which in the period shown, varied between 78 and 141 pence per kg liveweight. Data are not presented for the duration of the FMD crisis, since few sales took place, and price information for the period would not be suitable for comparative purposes.

Graph C17: Weekly price of clean cattle in GB

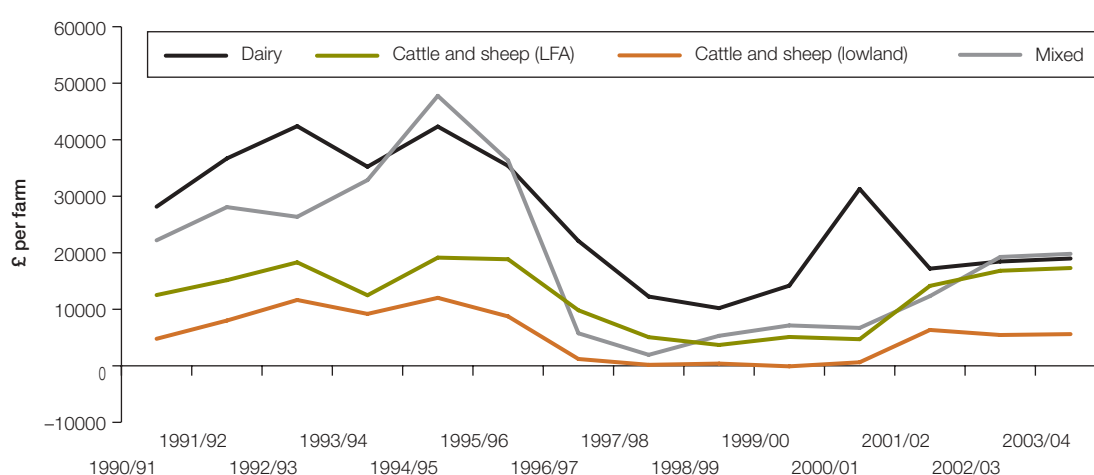


Source: Defra

Farm Income

Graph C18 shows average net farm incomes for livestock and mixed farm types in GB. Changes in the Sterling-Euro exchange rate in 2003 increased the income that farmers received in CAP payments and resulted in more favourable commodity prices. As a result, farm incomes were the highest that they have been for some time. However, recent rises come from a historically low base and, as shown in the chart, vary by sectors and also across GB. NFI is a narrow measure of farm income, averaging only about 35% of total cash income in the period 1999/2000 to 2002/2003.

Graph C18: Average net farm income (real terms at 2002/03 prices) by farm type: GB



Source: Defra, SEERAD, WAG

Prospects

CAP reform:

Beef cattle numbers are widely expected to decline following the implementation of the agreement on decoupling. Decoupling will separate CAP subsidies from production and farmers will receive the new Single Farm Payment in the future. In November 2002 a joint FAPRI/Queen's University study predicted that total beef cow numbers may fall by between 2.7% and 8.6% by 2010, although beef producers are not expected to be made worse off under decoupling because of a forecast corresponding price rise.

Decoupling and the Single Farm Payment are likely to have a much smaller effect in the dairy sector, since there are currently no direct payments in this sector and the EU market will continue to be protected from imports. However, agreed CAP reform does have provision for substantial cuts in dairy support prices.

The Over Thirty Months Scheme:

In 1996, when the possible link between BSE and cases of vCJD first became apparent, the Government introduced a number of controls including the over thirty month (OTM) rule prohibiting the sale for human consumption in the UK of meat from cattle aged over 30 months at slaughter. Studies had suggested that cattle presented a much higher risk to consumers in the year before the onset of clinical disease which occurs at an average age of 5 years.

On 1 December 2004 the Secretary of State announced the start of a managed transition towards the lifting of the OTM rule and its replacement with a system of robust testing of cattle for BSE for cattle born on or after 1 August 1996.

In 2002, 831,000 cattle in the UK were removed from the food chain under the scheme. Replacing the OTM rule with TSE testing may benefit cattle producers who may be able to market over thirty months bovines born on or after 1 August 1996 for human consumption.

List of Abbreviations

AHWS	Animal Health & Welfare Strategy
bTB	Bovine Tuberculosis
BSE	Bovine Spongiform Encephalopathy
CAP	Common Agricultural Policy
CI	Confidence Interval
CSA	Chief Scientific Adviser
CVO	Chief Veterinary Officer
Defra	Department for Environment, Food and Rural Affairs
EFS	Expenditure and Food Survey
FMD	Foot and Mouth Disease
HSE	Health and Safety Executive
ISG	Independent Scientific Group on Cattle TB
LA	Local Authority
LFA	Less Favoured Areas
LVI	Local Veterinary Inspector
MLC	Meat and Livestock Commission
NFS	National Food Survey
NFU	National Farmers' Union
NDPB	Non-Departmental Public Body
OECD	Organisation for Economic Co-Operation and Development
OST	Office of Science and Technology
OTMS	Over Thirty Months Scheme
PSA	Public Service Agreement
RBCT	Randomised Badger Culling Trial
RIA	Regulatory Impact Assessment
RTA	Road Traffic Accident
SAC	Science Advisory Council
SEERAD	Scottish Executive Environment and Rural Affairs Department
SVS	State Veterinary Service
TSE	Transmissible Spongiform Encephalopathy
VCJD	Variant Creutzfeldt-Jakob Disease
VLA	Veterinary Laboratories Agency
VO	Veterinary Officer
WAG	Welsh Assembly Government

Published by the Department for Environment, Food and Rural Affairs. Printed in the UK,
on material containing 80% post-consumer waste and 20% Elemental Chlorine Free pulp.

PB10528

**Nobel House
17 Smith Square
London SW1P 3JR**

www.defra.gov.uk

