



House of Commons
Environment, Food and Rural
Affairs Committee

**Badgers and cattle TB:
the final report of the
Independent Scientific
Group on Cattle TB:
Government Response
to the Committee's
Fourth Report of
Session 2007–08**

Tenth Report of Session 2007–08

Report, together with formal minutes

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Environment, Food and Rural Affairs Committee

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Tenth Report

Introduction

1. Our Fourth Report of Session 2007–08, *Badgers and cattle TB: the final report of the Independent Scientific Group on Cattle TB*, was published on 27 February 2008 as HC 130.

2. Our Report considered that cattle TB was one of the most serious animal health problems in Great Britain today, with the number of infected cattle doubling every four and a half years. The consequential growing cost of the disease to the taxpayer and to the farming industry was unsustainable. In “hot spot” areas where the prevalence of the disease was highest, the farming industry had reached a breaking point as the disruption to business in both human and economic terms had become unacceptable. The final straw for many farmers had proved to be the introduction of a new system of valuations for their slaughtered cattle which had proved inequitable in many cases.

3. We concluded that the Government's current method of controlling cattle TB, that of surveillance, testing and slaughter, was not working effectively. We recommended that Government adopt a multi-faceted approach to tackling cattle TB, using all methods available. We concluded that the Government's strategy for cattle TB should include: more frequent cattle testing, with more frequent and targeted combined use of the tuberculin skin test and the gamma interferon test; the evaluation of post-movement cattle testing; greater communication with farmers on the benefits of biosecurity measures; the deployment of badger and cattle vaccines when they become available in the future; and continued work on the epidemiology of the disease.

4. We also recognised that under certain well-defined circumstances it was possible that badger culling could make a contribution towards the reduction in incidence of the disease in hot spot areas. However, we acknowledged that badger culling alone would never provide a universal solution to the problem of cattle TB.

5. We agreed to the request of the Secretary of State for Environment, Food and Rural Affairs who asked that the Government be allowed more than two months to respond to our Report. We eventually received the Government's response on 4 July 2008, in advance of the Secretary of State's announcement on TB policy to Parliament on 7 July, and we publish it as an Appendix to this Report.

6. We are extremely disappointed that the response was so tentative in many areas. It also appears to play down the serious nature of this disease, asserting that the problem is a regional one, that the Government's cattle TB policies are working effectively, and that the position is not as “bleak” as our Report suggested. We note that PSA 9 (adopted in 2004) set a target for Defra to reduce the spread of cattle TB to new parishes to below the incremental trend of 17.5 confirmed new incidents per annum by the end of 2008, but not a target for the reduction of TB in existing hot spot areas or overall. The Departmental Annual Report 2008 says that the Department is “on course” for meeting its targets for limiting the spread of cattle TB to areas currently free from the disease. Whilst this might

explain the optimism contained in the Government response, the statistics for incidence of cattle TB in 2007 show that the number of herd breakdowns is still increasing.¹

7. The Government is unwise to have put all its eggs in one basket and to have chosen to focus its energies and funding on the long-term goal of developing cattle and badger vaccines when it is unlikely that a badger vaccine will be available before 2014 and a cattle vaccine before 2015. **The response indicates that there is little in the Government's strategy, beyond the current policy of surveillance, testing and slaughter, to tackle the disease in the short-term. This is not good enough—it fails to recognise fully the seriousness of the situation.**

8. In addition, the Government has said that many of its decisions on whether to implement stricter cattle-based measures will be made in consultation with the industry, by a new Bovine TB Partnership Group. The Government is thereby opting out of leadership of the issue, and subcontracting important decisions with high cost implications. It is unclear what levels of support, financial or administrative, the Government will be providing for this Group, or what levels of information and research Defra will allow the Group to have access to. Moreover, Defra's plans for partnership with farmers on the issue of animal disease control appear to be in disarray as the farming industry has walked away from current discussions on responsibility and cost-sharing.² This will surely have serious consequences for the credibility of the Government's plans for a Bovine TB Partnership Group to discuss cattle-based measures with the industry.

9. We set out our views in more detail below.

Comments on the Government response

Cattle-based measures

10. Paragraph 17 of the Government response states that it is committed to using all available methods which are “practical, cost-effective, and which can reasonably be expected to have a positive effect on reducing and controlling disease incidence”, and that the Government is focussing on preventing spread of the disease to new areas rather than tackling the disease where it is already prevalent. Further examination of the response reveals that no additional measures, beyond what the Government is already doing, are proposed. The Government considers that it already has a “strong package” of cattle-based measures in place. We note that this package includes “zero tolerance” for overdue tests, and yet the number of overdue tests rose from 3,627 in 2006 to 4,806 in 2007. Although that figure has fallen again in the first four months of 2008 to 4,181, it remains higher than in 2006.³

1 See 2007 statistics for Cattle TB at <http://www.defra.gov.uk/animalh/tb/stats/07/2007gb.pdf> and those for the first four months of 2008 at <http://www.defra.gov.uk/animalh/tb/stats/08/april08gb.pdf>

2 See NFU press release “Government refusal to cull badgers is a disgraceful abdication of responsibility”, 7 July 2008, <http://www.nfuonline.com/x29039.xml>

3 Defra statistics on Bovine TB in 2006 are at <http://www.defra.gov.uk/animalh/tb/stats/06/2006gb.pdf>

Cattle Testing

11. A review of the first full year of the use of the gamma interferon test is underway and we are pleased to note that the Government will consider the Committee's recommendations as part of this review. In paragraph 42, the response also states that the Government will "continue to work to increase the understanding of the gamma interferon test and build confidence in the role it can play in tackling disease". It is not clear what form this work will take.

12. Paragraph 24 of the response states that initial cost benefit analysis of measures such as increasing the frequency of cattle testing or making more extensive use of the gamma interferon test has suggested that they would come at a high cost with limited benefits. The Government has decided that the value of such measures first should be discussed with by the Bovine TB Partnership Group to be set up by Defra with the industry. **We ask Defra to provide the Committee with the analysis it has already undertaken of the costs involved in increased testing and increased use of the gamma interferon test, and also to provide details of the work to be undertaken on increasing understanding of the gamma interferon test and its accuracy. The Committee would also value details of any further work which Defra is undertaking to assess the efficiency of the skin test.**

13. As previously mentioned, the NFU and some livestock associations have withdrawn from cost-sharing discussions with Defra and are sceptical over the role of the new Bovine TB Partnership Group.⁴ **We are concerned that important discussions and decisions on cattle-based measures will be delayed should the industry not be prepared to participate in the work of the Bovine TB Partnership Group.**

Epidemiology and Biosecurity

14. In its response to the Committee's paragraphs 22 and 166, the Government acknowledges that the lack of certainty over the feasibility of husbandry measures in reducing the disease risk has meant that farmers have reservations about accepting Defra's advice on biosecurity. In response to the Committee's paragraph 117, the Government said that it had decided that further research was "unlikely to yield conclusive answers on the exact means of transmission between cattle and badgers" but that it would "continue to consider new ideas". **The Government must clarify what it means by considering new ideas about the transmission of the disease between cattle and badgers and provide further explanation as to why a conclusive answer on the spread of cattle TB cannot be produced.**

15. The response suggests that the new Bovine TB Partnership Group could have a role to play in deciding how the Government communicates biosecurity measures agreed by the Bovine TB Husbandry Working Group, but the response is unclear on how the Bovine TB Husbandry Working Group will decide what measures are effective, other than recommending that "by introducing a number of measures and following best-practice advice the cumulative effect may result in a reduction of bovine TB incidence". Results of a Government-funded husbandry research project currently underway, including a cost

4 See NFU press release "Government refusal to cull badgers is a disgraceful abdication of responsibility", 7 July 2008, <http://www.nfuonline.com/x29039.xml>

benefit analysis of husbandry measures, is not due to become available until early 2010. As observed in our Report, the Welsh Assembly Government has set up a Husbandry Intensive Treatment Area to evaluate the effectiveness of improved biosecurity measures. The Government response suggests that it might trial a similar approach in England, but that it intends to wait for the outcome of the Welsh Assembly Government's work in this area. **Further information on the real benefits of improved animal husbandry in the fight against cattle TB is unlikely to be available in the near future. We urge Defra to make the results of the biosecurity research available as soon as possible. It should use its close working links with the Welsh Assembly Government to learn from its experiences on the Welsh animal husbandry intensive treatment area, and make preparations to introduce a similar scheme in England on a pilot basis at short notice.**

16. In paragraph 48, the response states that the Government would consider making additional funding available to support initiatives aimed at assisting parts of the farming sector “in managing the impact of living in high risk areas”. **The Government should provide more information on what this means, and on the incentives it might provide to farmers in hot spot areas for implementing biosecurity measures.**

Vaccines

17. We are encouraged by the Government's response to paragraphs 187–189 of our Report which recommended that the Government prioritise the development of a vaccine strategy. The Government has been working with scientists and stakeholders on developing such a strategy for the potential use of vaccines. This strategy will be vital to the Government in the approach it has decided to take towards the disease.

18. We are also encouraged that the Government has decided to invest more funds in vaccine research, as we were told that although extra funding was unlikely to bring the current vaccine timetable forward, it would make the projected timescales for vaccines more robust. **Vaccines still remain a long-term solution and there are many administrative, hurdles both in this country and the EU, before a vaccine strategy could be implemented. The Government should commit to early discussions with the European Commission to establish clearly under what circumstances it might accept a vaccine solution to cattle TB as we are unique in Europe in pursuing this approach.**

19. We understand that the £20 million announced by the Secretary of State on 7 July to be spent on vaccines research over the current CSR period of 2008–11 consists of the following elements:

- £10.4m will fund vaccines research already contracted to take forward, during the current CSR period (projects on which Defra has already spent £18m over the past 10 years)
- £9.6m is funding for further new vaccines work, not yet contracted, during the current CSR period 08–11.

The research projects will continue for a number of years and will straddle the current CSR and the next one (2011–2014). This effectively represents an additional funding commitment in the next CSR. As a result, further £15m is anticipated to be spent on vaccines research to develop fully licensed vaccines in the next CSR period.

20. The Secretary of State also announced that additional funding would be provided for the injectable badger vaccine deployment project. **The Government should announce as soon as possible the terms of reference of the new vaccines research to be funded by the Government, together with the total amount of funding that it intends to invest in the injectable badger vaccine deployment project. The Government should provide the Committee with further information on all the Government-funded vaccine research projects currently underway, including breakdowns of the funding provided on each project, together with a clear timetable for licensed badger and cattle vaccines. Also, Defra should include in its Departmental Annual Report to Parliament a detailed update on the progress of its vaccine development work.**

21. In addition, in paragraph 19, the Government states that it will continue to invest in research into various aspects of cattle TB in order to inform policy making. **Defra should provide the Committee on a six monthly basis of details of any other scientific research into cattle TB that is under way.**

Compensation

22. The recent decision by the High Court on 14 July 2008 suggests that the Committee was right to conclude that the current system of table valuation was unfair to pedigree farmers.⁵ **We await with interest Defra's decision on whether to appeal against the High Court judgment, but reiterate that if Defra wishes to continue with its policy of cost-sharing, and regain the confidence of the cattle industry, it must be prepared to pay a fair price for cattle which are compulsorily slaughtered.**

23. In response to our recommendation in paragraph 35 on a clearly defined compensation policy for species other than cattle, the Government states that it has had discussions with the camelid industry, and that an interim policy is in place. **We ask whether representatives of the camelid industry have been invited to sit on the Bovine TB Partnership Group to assist Defra's work on a wider policy on cattle TB in species other than cattle.**

The decision not to cull

24. In paragraph 12 of its response, the Government states that it has considered the evidence on the practicality of culling, the international evidence, and that it has discussed with issue with farming, veterinary, wildlife and police organisations and it has concluded that licences for farmers to cull badgers over a large area to prevent cattle TB will not be issued. However, Defra says that “we remain open to revisiting the policy under exceptional circumstances or if new scientific evidence were to become available.” We would have hoped that Defra would have had detailed discussions with the NFU in the South West of England where the conditions are exceptionally serious. We are disappointed that Defra is unclear whether or not it had assessed the viability of the NFU's planned cull in the areas of South West of England designated as “VLA 9”. **Defra should**

⁵ R (on the Application of Partridge Farms Ltd) v The Secretary of State for Environment, Food and Rural Affairs, 14 July 2008

set out what assessment it made of the NFU's plans for an organised, long-term and large-scale coordinated cull.

25. The Government's statement on revisiting the policy of culling is vague and its implications are unclear. **The Government should provide a clearer indication of the evidence it would need, and the circumstances that would be required, for it to revisit the policy of culling. In particular, it should state whether there is any scientific research currently under way that could produce new evidence?**

Scientific advice

26. Finally, we were disappointed, considering the Government's considerable investment in the ISG's ten year research programme and the continuing cost of cattle TB to the Government, at the Government's negative response to our recommendation that dialogue continue between the ISG and the new Government Scientific Adviser. We are surprised that the Government has based its decision not to cull on the ISG's final report, but does not wish to make further use of the Group's expertise.

27. We ask Defra to respond to the points raised in this report. We will also be asking the Secretary of State to give oral evidence on his response to our original Report.

Appendix

Government response

Introduction

1. The Government is grateful to the Committee for their comprehensive and thoughtful report on bovine TB, which demonstrated clearly the complex issues that need to be addressed. The report sets out the strong views interested individuals and organisations hold on tackling bovine TB. These differences of opinion have also been clearly expressed to Ministers as they have met with the key stakeholders in the process of reaching decisions on how to tackle bovine TB in England.

2. Bovine TB has been a long-standing problem in Great Britain. From the 1930s onwards successive Governments have sought to bring the disease under control for a number of reasons, chiefly to protect public health, reduce the economic impact of the disease on the cattle industry and, more recently, to comply with our cattle trade obligations under European Union legislation. This was largely achieved from the mid 1970s to the early 1980s, when the animal and herd incidence of TB in cattle reached an all time low. However, since then disease incidence has increased again and last year nearly 4,200 new TB breakdowns were recorded (7.4% herd incidence) and 26,000 test reactors (4.4 for every 1,000 animals tested) were slaughtered across GB⁶. The disease cost the taxpayer £576 million between 1997 and 2007⁷.

3. Government recognises that bovine TB is a serious problem for the farming industry; for farmers living with the disease it can be costly and disruptive, and for a few the economic consequences can be devastating. However, the overall position is not as bleak as the Committee's report suggests. Bovine TB is a largely regional problem, concentrated in England in the South West and West Midlands. In England just over 90% of cattle herds are free of bovine TB restrictions at any time, and some significant cattle farming areas of the country are largely free of the disease. On our current estimates, the economic impact of the disease on the British cattle industry as a whole is small, equivalent to less than 1% of the value of GB milk and beef sales.

4. We do not share the Committee's view that the control framework based on surveillance, testing and slaughter is not working effectively. Outside the high incidence areas the current system of surveillance, testing and slaughter does clear herds of bovine TB and reduce the risk of disease spread, and we have introduced measures in recent years which are strengthening this control regime.

5. We are, however, concerned about current bovine TB incidence and recognise that testing and slaughter of cattle alone will take a long time to reduce disease in areas where TB is endemic due to the high prevalence of infected cattle and the risk of reintroduction by infected badgers.

6 Annual Report of the CVO 2007

7 <http://www.defra.gov.uk/animalh/tb/stats/expenditure.htm> £576m spend up to end of 2006/07 financial year.

6. We agree with the Committee that we need to look closely at how our current strategy might be improved. However, decisions on how we move forward cannot be taken by Government alone and we want to change the way Government and the farming industry work together to reach decisions about future bovine TB control measures.

7. The regional differences in the level of bovine TB in cattle mean that the approach to disease control needs to be proportionate and targeted. However, bovine TB is a slow moving and cyclical disease and policy changes will not deliver quick results; in the short to medium term any tightening of the existing TB surveillance regime is likely to lead to more reactor animals and herds being identified. The additional cattle measures introduced since 2005 have strengthened the long established surveillance programme, particularly through the introduction of pre-movement testing, annual reviews of local TB testing frequencies, automatic restrictions on all herds with an overdue test and targeted use of the gamma interferon test. Due to the nature of the disease it will inevitably be a number of years before we can evaluate the full impact of these policy changes.

8. For many years the role badgers play in transmitting bovine TB to cattle has polarised the views of stakeholder organisations and the public. In 1971 the link was made between a tuberculous badger found dead on a farm in Gloucestershire and an outbreak of bovine TB in cattle on that farm, and from 1975 until early 1998 successive Government-led badger culling strategies were used. In 1997, John Krebs (now Lord Krebs) led a review of bovine TB, looking particularly at the role of badgers in the disease in cattle. Its main recommendation was to set up a scientific experiment to quantify the impact of culling badgers and so, in 1998, the Randomised Badger Culling Trial (RBCT) was established. The RBCT was overseen by the Independent Scientific Group on Cattle TB (ISG) and involved an investment of approximately £50 million in order to develop a comprehensive scientific evidence base. The ISG's Final Report, which the Committee reviewed, concluded that culling as carried out in the RBCT could only deliver marginal benefits. While it was possible that a prolonged and effective cull over a larger area could reduce the incidence of bovine TB, the ISG's judgement was that the practicality of delivering a cull on this scale, and its economic cost, meant that badger culling could "not meaningfully contribute" to tackling the disease.

9. The former Secretary of State for Defra, David Miliband, asked the then Government Chief Scientific Adviser (GCSA), Sir David King, to carry out an assessment of the scientific evidence in the ISG's final report as well as the other types of evidence that must be taken into account in reaching a policy decision on badgers and bovine TB. The aim was to help the Government make the right decision based upon the most extensive evidence base possible. Sir David published the conclusions of his group in October 2007.

10. Both the ISG's and Sir David's reports say that badger culling could have an overall beneficial effect, although they differ on the degree of benefit that might be achieved. Both reports also identified that the way in which culling is carried out would be critical if it was to deliver any benefits. They recognised that only culling badgers over a wide area, and maintaining this cull for a number of years, would deliver benefits, and also that a more limited cull that did not encompass enough land in a defined area, or one that was not sustained, could actually make the situation worse. Both reports clearly recognised that it is crucial for the practicality of delivery, and the balance of costs and benefits to be considered alongside the scientific evidence.

11. The Committee recommended that licences for culling badgers should only be issued to farmers if they complied with the conditions set out by the ISG and Sir David King. As the Committee recognises, the scientific evidence shows that the way a cull is delivered is critical. It would be very difficult to deliver an effective large area cull in practice; it would be a costly operation that would need to be continued for a number of years. Public opposition to culling would also make yet more difficult the challenge of delivering an effective cull. The Government agrees with the Committee that there is a risk that patchy, disorganised culling could make matters worse.

12. Having considered the evidence on the practicality of culling, the international evidence and having discussed the issue with farming, veterinary, wildlife and police organisations, the Government has concluded that its policy should be that licences for farmers to cull badgers over a large area to prevent bovine TB in cattle will not be issued, although we remain open to revisiting this policy under exceptional circumstances or if new scientific evidence were to become available.

13. The Government recognises that badgers will continue to be a source of infection for some herds. In line with the Committee's recommendation, it has therefore decided that our priority should be to strengthen the vaccines research programme. Effective vaccines would assist our control programme significantly, and in the longer term could provide a viable route for tackling disease in the badger population and substantially reducing disease in cattle. In addition, vaccines could work everywhere, whereas culling could only ever be an option in a small number of areas. We have already invested £18 million (up to June 2008) over the last ten years in the development of vaccines for badgers and cattle and have decided to commit to funding projects costing just over a total of £20 million over the next three years to strengthen the prospects of successfully developing a usable vaccine. We will also provide additional funding to set up and run an injectable badger vaccine deployment project to prepare for deploying badger vaccines in the future. This will be designed to build confidence in the long term contribution badger vaccination could make to tackling bovine TB and to provide valuable information which can help us move toward the long term goal of an oral badger vaccine.

14. We recognise that it will be a number of years before an oral vaccine for badgers, or a cattle vaccine, could be available. In the meantime, our priority will be to reduce the risk of spread of the disease, and to try and stop it becoming established in new areas. The cattle controls we have in place are vital, but the action that individual farmers take to reduce disease risk, particularly that of importing disease into their herd, will also remain critical.

15. The investment the Government has made in the bovine TB Research Programme provides more information on the mechanisms of this disease than ever before. However, there remain significant areas where information is lacking. The Government agrees with the Committee that establishing the routes of transmission is important to help us effectively target TB control and it was thought that the Randomised Badger Culling Trial (RBCT) would answer a key aspect of this question. The results provided further proof that badgers carry bovine TB and that a dynamic cycle of disease between badgers and cattle exists in some high incidence areas of the country. However, one of the conclusions the ISG reached at an early stage was that, for practical reasons, it was not possible to quantify the relative importance of badgers and cattle in transmitting disease nor was it possible to

definitively identify routes of transmission between cattle and badgers. The RBCT and the Defra-funded research programme indicate that answering this question conclusively is currently impossible. This means the risk based approach of the bovine TB strategy is vital because there are and will remain significant unknowns for the foreseeable future.

16. The debate over whether badger culling could form an effective part of our bovine TB strategy has run for many years. The Government has now reached a decision on badger culling, and we now need to move forward in tackling the disease. Disease control is not just a matter for the Government. Farmers have the primary interest in controlling the disease and they must be more closely involved in the decision making process. It would be possible to tighten TB surveillance and control measures in cattle still further, but such measures would come at a high cost. Whether they would be worthwhile is as much a question for industry as for Government and that is why we need to work in partnership with industry. We will therefore be establishing a Bovine TB Partnership Group with industry to agree the best way forward.

The Government response to the Committee's conclusions and recommendations

Strategy to tackle bovine TB

Government must adopt a multi-faceted approach to tackling the disease, targeting the disease in both wildlife and cattle, using all available methods that are backed by the findings of well-founded scientific research (paragraph 136⁸). Defra needs a well-defined policy on the control of bovine TB in cattle which will reduce the incidence of the disease (paragraph 10).

17. The Government agrees and is committed to tackling bovine TB, using all available methods which are practical, cost-effective, and which can reasonably be expected to have a positive effect on reducing and controlling disease incidence. We have a strong package of cattle measures in place to reduce spread and incidence of disease, with regular and targeted skin testing of cattle, monitoring of TB at slaughter of cattle from non-restricted herds, zero tolerance of overdue tests, pre-movement testing and targeted use of the gamma interferon test. For wildlife we have decided that culling badgers is not a tool which should be available based on a wide range of evidence, including the Randomised Badger Culling Trial.

18. We agree we need to look closely at how our current strategy might be improved. However, decisions on how we move forward and enhance the disease control framework cannot be taken by Government alone. As with other areas of animal health policy, we want to share responsibility for decision taking with farmers—working together to take future decisions about bovine TB control measures. There are some tough choices to make, such as on whether cattle controls might be tightened, and important work to take forward on vaccination. We are keen to start this work as soon as possible.

19. In taking forward discussions on future bovine TB control options, Government and industry will be able to draw on an extensive evidence base. However, as both the Committee and the ISG have concluded, there remains a great deal of uncertainty around many aspects of bovine TB, including routes and rates of transmission, between cattle and between badgers and cattle. It may never be possible to have a perfect picture of the epidemiology of bovine TB, and the focus must therefore be to reduce the risk of disease spread based on basic principles of disease control and current knowledge. We continue to look for new disease control tools by investing in research into various aspects of bovine TB in cattle, badgers and other species, in order to inform evidence-based policy making. The most significant investment the Government is making is into the continued development of vaccines for badgers and cattle.

Government must make a decision on what its strategic objectives in relation to the disease are (paragraph 22).

20. The objectives of England's bovine TB control programme were laid out in the 2005 strategy document *Government strategic framework for the sustainable control of bovine*

⁸ Paragraphs refer to the House of Commons EFRA Select Committee Report on *Badgers and cattle TB: the final report of the Independent Scientific Group on Cattle TB* published on 27 February 2008.

tuberculosis in Great Britain. The priority of the bovine TB strategy remains to reduce the spread of the disease, and prevent it becoming established in new areas. We remain committed to trying to reduce disease incidence in areas where TB is endemic, but recognise that there are limited tools available at the moment for reducing the risk of infection from badgers. We will therefore want to use the new Bovine TB Partnership Group to discuss with industry representatives what additional measures might be taken both to reduce the risk of disease spread and to tackle disease in areas where bovine TB is endemic. We will also want to explore what practical steps could assist farmers in managing the impact of living under disease restrictions, for example by providing incentives for biosecurity or making it easier for farmers to market their cattle.

The policy options recommended by this report will involve increased expenditure for the Government, but the Government must spend now to save greater expenditure in the future (paragraph 125).

21. We are already investing now to save in the future, and are committing to a significant increase in this investment over the rest of this CSR period and beyond. We have already invested £18 million over the last 10 years (up to June 2008) in research to develop vaccines for badgers and cattle which, if successful, will provide a viable route for making significant inroads into the disease in both cattle and badgers, in the long term. We will therefore commit to spending a further £20 million on vaccine development over the next three years to improve the prospects of successfully developing usable vaccines. Our assessments suggest there is a good chance that this investment will be justified by future savings in expenditure. We will also provide additional funding to set up and run an injectable badger vaccine deployment project to prepare for deploying badger vaccines in the future. We will work closely with stakeholders and researchers to shape the project and maximise its chances of success.

22. We have also increased our spending on cattle testing to try to identify and remove disease, including through our investment in extension of the use of gamma interferon testing. Increased cattle testing can be expected to have a positive effect on disease incidence, which we anticipate would result in a saving for the taxpayer in the future.

23. While increasing funding to try and better control the disease could seem an attractive option, Government must be realistic: there is a point at which such measures cease to be good value for the taxpayer, the farming industry, or for disease control and it is far from clear whether considerable additional investment in bovine TB control would deliver benefits that justified the expense. This will be a key issue for the new bovine TB Partnership Group to consider, together with the question of who should meet the cost of any new measures.

Cattle based measures

Defra should initiate a cost-benefit analysis of the options based on cattle controls recommended by the ISG in order to inform its decision on future policy on cattle TB (paragraph 116).

24. The ISG made a number of recommendations about cattle control measures that could have a positive effect on bovine TB incidence, but without offering any indication as to

whether these measures would be cost effective to the taxpayer or to farmers. Initial cost benefit analysis of increasing the frequency of cattle testing or making more extensive use of the gamma interferon test suggests that they would come at a high cost with limited benefits—and so would be difficult to justify in terms of Government expenditure. Decisions about the value of such measures, and how they might be funded, are as much, if not more, a question for industry as for Government and will need to be discussed by the Bovine TB Partnership Group. We agree that cost-benefit analysis or other appropriate economic assessment is important for informing these decisions.

It is important that research continues to fill the gaps in the scientific knowledge on bovine TB identified by the ISG and others and Defra must ensure that funding for this research is found. In particular, the Government must decide in the next 6 months whether further research on establishing exact means of transmission is necessary (paragraph 117).

25. The Government has invested over £109 million over the past 10 years in research, including the Randomised Badger Culling Trial, and the research budget for the next three years is approximately £26 million. The gaps in the scientific knowledge identified by the ISG and others have been carefully considered and prioritised against policy needs. These are used as the basis for conducting open competitions for commissioning research published in the annual Defra Research Requirement documents. This will continue, and the newly formed independent bovine TB Scientific Advisory Body will also play a role in this process.

26. We now have enough evidence to decide that further research is unlikely to yield conclusive answers on the exact means of transmission between cattle and badgers; however, we will continue to consider new ideas. The RBCT has demonstrated that it is not possible to quantify the possible routes of transmission and although there is evidence that transmission to cattle is primarily through the respiratory route, the pathology of bovine TB in badgers, cattle and other species suggests indirect infection of cattle through badger excreta is a considerable risk. The relative importance of the routes of infection will therefore remain an unknown, and it should be assumed for control purposes that both direct and indirect transmission of TB between badgers and cattle may occur in farm buildings and at pasture. Our bovine TB control strategy mitigates the risks around the uncertainty concerning exact routes of transmission by seeking to ensure that, in relation to as many routes of transmission as possible, disease spread is minimised.

TB SAB should be given clearly defined roles in how it should provide advice to the Government (paragraph 134).

27. Defra's Bovine TB Science Advisory Body does have a clear role and a structure is already in place for organising its provision of advice to the Government. This has been developed on the basis of advice from Defra's Scientific Advisory Committee. The Bovine TB Science Advisory Body was established in January 2008 to provide expert oversight of Defra-funded bovine TB research, identify gaps in its evidence base and to provide independent advice on the strategic direction of, and priorities for, all Defra-funded bovine TB-related research. It is not within the Body's remit to advise on questions of policy, nor inform and monitor the effects of policy decisions.

28. The Bovine TB Science Advisory Body has four working subgroups focusing on specific areas of Defra's bovine TB research portfolio: vaccines; epidemiology and wildlife risks; diagnostics; and economics and social science. The Chairman of the Bovine TB Science Advisory Body, Professor Quintin McKellar, will take a strategic overview of the activity of the sub-groups and identify any gaps in their coverage. The Body reports to Defra's Chief Veterinary Officer and Chief Scientific Adviser.

Defra should discuss the introduction of post-movement testing in respect of cattle moved from high risk areas to low risk areas with the farming industry, veterinary experts and Animal Health (paragraph 143).

29. The Government advises farmers to take all responsible precautions to prevent introduction of infected animals into their herds. Pre-movement skin testing combined with post-movement testing would provide greater protection from bovine TB than pre-movement testing alone. We continue to advise farmers to post-movement test animals on a voluntary basis, as best practice in protecting the health of their herd.

30. The option of introducing compulsory post-movement testing was considered as part of the strategy consultation in 2004. However, it was decided not to go ahead with post-movement testing at that stage. Analysis showed that post-movement testing cattle moving into a 3 or 4 yearly testing herd in England and Wales, in addition to pre-movement testing as currently implemented, would give the greatest disease control of the options assessed but at the highest cost. That approach was shown to have a lower net benefit than pre-movement testing as currently implemented. Based on the information then available, the addition of post-movement testing was estimated to prevent a further 70 bovine TB incidents per year at a cost of about £50,000 each, which appeared to be high in relation to the benefits.

31. Nonetheless, the Government agrees with the Committee that it would be worth revisiting this decision, but would want to do so as part of the discussion in the Bovine TB Partnership Group of future control options.

An assessment should be made of the performance and functionality of the current National Cattle Tracing System (paragraph 143).

32. In England, the British Cattle Movement Service (BCMS) is responsible for keeping records of all cattle movements through its Cattle Tracing System, which is fit for purpose. Vetnet is the current IT system used by Animal Health to keep records of bovine TB testing and control measures, and it is to this that Lord Rooker referred (q538, transcript of 10 December 2008) when giving evidence to the Committee, rather than to the BCMS Cattle Tracing System.

33. Animal Health is responsible for the administration of the bovine TB control programme, and has recognised the problems associated with having several separate outdated systems to deliver the programme, which include Vetnet and TBIS. As part of their Business Reform Programme they are introducing a new, more cohesive IT system which will fulfil the functions currently performed by several different systems. The first version of this new system ('SAM') will be rolled out shortly, with bovine TB functionality introduced at a later date.

34. The systems used in England for recording cattle movements and other information relevant to managing bovine TB breakdowns are not directly comparable with the APHIS cattle tracing system operating in Northern Ireland.

The gamma interferon test should be strategically directed in both routine and pre-movement testing (Paragraph 143).

Defra must examine carefully the benefits of the introduction of the parallel use of gamma interferon testing alongside the tuberculin skin test. (paragraph 193).

35. The Government recognises that the gamma interferon test (a laboratory-based blood test) is a valuable additional tool for detecting and controlling bovine TB, and this is why more gamma interferon tests are carried out in Great Britain every year than in any other country in the world. Research shows that the skin and gamma interferon tests identify different populations of infected animals – so maximum testing sensitivity is achieved when they are used together (parallel testing).

36. The current gamma interferon policy, adopted in 2006, increased the circumstances in which the test is used, and was designed to target the test where it would yield the highest benefits. The decision as to where to focus its use also reflected the high cost of the test, and practical constraints such as laboratory capacity and the need for blood samples to reach the laboratory in a viable condition within 24 hours of being taken. The test is currently used in the following circumstances, and targeted on those herds where reactors have already been identified by a parallel skin test, and disease has been confirmed at post-mortem inspection or through culture:

- all confirmed new incidents in 3 or 4 yearly tested herds, including those that fail to resolve through repeated skin testing or where complete or partial de-population is contemplated;
- confirmed bovine TB incidents that have failed to resolve through repeated skin testing or where complete or partial de-population is contemplated;
- at the first inconclusive reactor (IR) retest in unresolved IRs in herds in 1 and 2 yearly tested herds.

37. Between 23 October 2006 and 30 April 2008, this approach identified 3651 reactors in England. These gamma interferon test reactors were likely to be infected with bovine TB, but had failed to produce a reaction to an earlier (or contemporaneous) tuberculin skin test.

38. During development of the gamma interferon policy, consideration was given to whether it should be used in pre- and/or post-movement testing. However, practical, legal and cost issues have ruled this option out for the present. Currently, blood samples for gamma interferon testing are only taken by Animal Health staff because of the complicated logistics of despatching these samples quickly to the laboratory in temperature-controlled, specialist packaging. Pre- and post-movement tests are carried out by private vets and it is not currently practical to extend the system so as to allow them to take samples for gamma interferon testing. There would also be significant cost implications. Pre- and post-movement testing is paid for by farmers, whereas gamma interferon testing is currently

funded by Government. Using the gamma interferon test for pre-movement testing is likely to cost significantly more per animal tested than the current cost using the skin test, a cost which would be borne by industry, who have little appetite for such a change. Although this approach could be expected to disclose more reactors, it is far from clear whether the benefits would justify the substantial costs.

39. The slightly lower specificity (its ability to differentiate between true and false positives) of the gamma interferon test (in relation to the skin test) might also result in significant farmer opposition if it was used as a surveillance test rather than, as at present, in herds where disease has already been identified. The gamma interferon test has a specificity of 97%, which although high, still carries a risk of producing three false positives per hundred animals tested. It is for these reasons that the gamma interferon test use is currently targeted in herds where infection has already been confirmed at post mortem examination and/or culture, or where the likelihood of the animal truly being infected with bovine TB is high (e.g. 2 time inconclusive reactors).

40. The tuberculin skin test is currently the only one approved by the EU as the primary diagnostic test for bovine TB i.e. to determine the disease status of cattle herds. The gamma interferon test is recognised by the EU, as an ancillary test. To routinely use the gamma interferon test in parallel with the skin test would bring with it significant difficulties and very high costs. An initial high-level cost-benefit analysis shows that routinely using the gamma interferon test as the primary diagnostic test for bovine TB is likely to produce small benefits when compared to the extremely high cost (possible benefits of around £125m over 20 years, with a cost of £1 billion over 20 years). Using the gamma interferon test routinely in parallel with the skin test would cost still more.

41. A review of the first full year of the use of the gamma interferon test since its roll-out in October 2006 is currently underway. The circumstances in which the gamma interferon test is used, including the Committee's recommendations and whether the test should be made available for private use, are being considered as part of this work. Further roll-out of its use in the future will depend on a number of factors including availability of resources, testing/laboratory capacity, the effectiveness of the policy and the level of stakeholder buy-in to the test.

42. Government will continue to work to increase understanding of the gamma interferon test and build confidence in the role it can play in tackling disease.

Defra must examine carefully the benefits of increasing the frequency of testing (paragraph 193).

43. Increasing the frequency of bovine TB testing in some areas was recommended by the ISG. However, doing this would have significant financial and practical implications—an initial cost-benefit analysis does not suggest that the case for this sort of change is strong. Increased testing would result in more animals slaughtered and, as the Committee acknowledges, this would also increase the cost of compensation for the taxpayer. Our current approach to determining the minimum levels of routine testing for cattle herds is risk-based and consistent with the requirements of EU Council Directive 64/432/EEC. Parish Testing Intervals reflect the local level of bovine TB prevalence, and are reviewed each year to take account of any change in the disease situation. An increase in the levels of

disease in an area triggers more frequent testing. Divisional Veterinary Managers (Animal Health) are already empowered to increase testing if local circumstances indicate that such action is required.

44. The current approach is risk-based and, as already discussed, any changes to the current package of cattle controls would only be considered if supported by industry. This will be another issue that will be on the agenda for the Bovine TB Partnership Group.

Defra must continue to support research into evaluating the effects of employing different animal husbandry measures on farms. Defra should adopt a more pro-active approach using vets based in local communities creating biosecurity “partnerships” with farmers (paragraph 166).

45. The Government recognises the role good husbandry and biosecurity measures can play in reducing the risk of a herd experiencing a bovine TB breakdown. In 2006–2007 the Bovine TB Husbandry Working Group reviewed the available evidence and provided farmers and vets with practical, evidence-based information to help them make informed decisions. However, as the Committee recognises in its report, the relative lack of knowledge on the exact method of transmission of disease from badgers to cattle means that it is difficult to determine the effectiveness of biosecurity and husbandry measures. The mechanisms of cattle-to-cattle disease spread are better known, and the surveillance and slaughter programme which Defra and Animal Health enforce includes biosecurity measures to reduce this risk, for example compulsory isolation of reactors, pre-movement testing and the disinfection of buildings used to house reactors.

46. An analysis of farm-level herd breakdown risk factors for bovine TB was conducted by the ISG during the course of the RBCT. They concluded that it is not possible to identify single factors that increase the chance of a herd suffering a bovine TB breakdown. It is therefore not possible to recommend a single measure that farmers could take to mitigate these risks, but by introducing a number of measures and following best-practice advice the cumulative effect may result in a reduction of bovine TB incidence.

47. The Government continues to fund research into the feasibility of practical husbandry measures reducing the disease risk posed by badgers to cattle. Between 2003 and 2005 a husbandry project carried out by researchers at the Central Science Laboratory (CSL) (project SE3029: An investigation of potential badger/cattle interactions and how cattle husbandry methods may limit these, total cost £556,851) investigated badger-to-cattle contact in and around farm buildings and found that badgers did visit farmyards to a higher degree than was previously thought. Since November 2005 Defra has funded a follow-up project with CSL (project SE3119: An experiment to assess the cost-effectiveness of farm husbandry manipulations to reduce risks associated with farmyard contact between badgers and cattle, total cost £1,042,493), which is investigating practical adaptations which can be made to farm buildings and equipment such as feeders and gates in order to keep badgers out while not significantly interfering with the day-to-day running of the farm. This research will also include an analysis of the costs and benefits of the husbandry interventions tested. The results of this research are due in early 2010.

48. The Government recognises that many farmers currently have reservations about accepting its advice on issues such as husbandry. It is for this reason that the Bovine TB

Husbandry Working Group was established, to work with industry representatives and other interested groups to develop and distribute advice in which farmers would have confidence. We would also encourage industry bodies to continue to promote best practice husbandry and biosecurity measures to their members as a way in which they can reduce their chance of experiencing a bovine TB breakdown. The Bovine TB Partnership Group may wish to consider how we communicate biosecurity measures and how we could work together to assist parts of the farming sector in managing the impact of living in high risk areas. We would be prepared to consider making additional funding available to support such initiatives if the group puts forward a strong business case for doing so.

49. Defra works closely with the Welsh Assembly Government to combat bovine TB in both England and Wales. The Welsh Assembly Government was represented on the Bovine TB Husbandry Working Group and keeps us closely in touch with the progress of their Husbandry Intensive Treatment Area. We have not ruled out trialling a similar approach in England and are awaiting the outcome of this research with interest.

Defra should issue a culling licence to NFU applicants in the South West if they can satisfy conditions agreed by Sir David King and ISG, and put into a framework by Defra and NE (paragraph 181).

50. As the Committee recognises, the scientific evidence shows that the way a cull is delivered is critical. It would be very difficult to deliver an effective large area cull in practice; it would be a costly operation that would need to be continued for a number of years. Public opposition to culling would increase the challenge of delivering an effective cull. The Government agrees with the Committee that there is a risk that patchy, disorganised culling could make matters worse. Having considered the evidence on the practicality of culling, and discussed the issue with farming, veterinary, wildlife and police organisations, the Government has concluded that its policy should be that licences for farmers to cull badgers over a large area to prevent bovine TB in cattle will not be issued. The Government does, however, remain open to revisiting this policy under exceptional circumstances or if new scientific evidence were to become available.

The Government must make the development of its vaccine strategy a priority in order to guide the scientists involved in the development of vaccines for cattle and badgers. There is a case for further funding for vaccine research on an 'invest to save' basis (paragraph 189).

51. The Government agrees that effective vaccines could make an important contribution to its bovine TB control programme including by addressing the bovine TB reservoir in badgers, and will therefore commit increased funding to develop vaccines and prepare for their deployment. We fully endorse the Committee's recommendation of an "invest to save" approach.

52. We have a programme in place to explore the options for the use of vaccines with the scientists involved in their development, and with stakeholders. Vaccine development has been a priority for a number of years in line with the recommendations in the 1997 Krebs Report. We have invested £18 million over the past ten years in research and development on badger vaccines, cattle vaccines and associated diagnostic tests. We have now also decided to commit to spending a total of £20 million over this CSR period. The continued

and additional funding will help us further develop oral badger vaccines and investigate ways in which they could most effectively be deployed. It will also enable us to continue with the work on cattle BCG-based vaccines, developing tests to differentiate infected from vaccinated animals, evaluate the duration of sensitisation of cattle to the tuberculin skin test and boost work looking at non-sensitising vaccines for cattle.

53. We will also invest additional funding in setting up and running an injectable badger vaccine deployment project to prepare for deploying vaccines in the future. The injectable badger vaccine will be used in the deployment project with the aim of building stakeholder confidence in the long term contribution badger vaccination could make to tackling bovine TB, and to provide valuable information which can help us move towards the longer term goal of an oral badger vaccine. This will not be a rigorous scientific trial but a practical demonstration in collaboration with stakeholders and researchers on how a vaccine might be used, in order to gain confidence in the use of badger vaccination.

54. The Government is also working closely with researchers in Ireland and New Zealand to share any developments across the bovine TB community internationally and draw on worldwide expert advice. Bovine TB vaccine research is an extremely complex area but this integrated approach places us in the best possible position to share knowledge and target research funding appropriately.

55. A Vaccine Scoping Study Sub-Committee was set up by the Independent Scientific Group on Cattle TB (ISG) in 2001 to review progress and reported its advice on future research requirements to Ministers in 2003. Most of the recommendations from the Study have been taken forward by the Department and are overseen by a bovine TB Vaccine Programme Advisory Group composed of independent scientists and chaired by the Departmental TB Vaccine Programme Adviser, Professor Douglas Young, an internationally recognised expert in human TB vaccines from Imperial College.

56. There are a number of different ways in which vaccination could be used to tackle bovine TB in cattle and/or badgers, each with associated benefits and issues. At the core of these is the balance of costs versus benefits in terms of disease control, but there are also wider issues that need to be taken into account and balanced such as acceptability, practicality, trade issues and legal constraints. Government has been working closely with scientists and stakeholders to consider these issues and develop a strategy for the potential use of vaccines for bovine TB by:

- ascertaining whether the benefits of vaccines will be sufficient to ensure uptake and justify their use when balanced with the costs associated with developing and using them;
- identifying any barriers to the potential use of vaccines that need to be overcome e.g. any legal restrictions; and
- understanding the properties required of the vaccines to influence further development.

57. This work has shown that vaccines can potentially make a contribution to the control of bovine TB as part of a wider package of controls. However, it has identified a number of significant issues both scientific and policy which will need to be addressed. The options

and issues have been summarised in two papers, one considering cattle vaccines and the other badger vaccines. Both have been endorsed by industry and stakeholder groups as a sound basis for moving the vaccines programme forward. The papers are available online at <http://www.defra.gov.uk/animalh/tb/vaccination/index.htm>.

58. Vaccination is a long term policy option. Research by its nature takes time and a successful outcome cannot be guaranteed. Taking into account the scientific, policy and legal issues, oral badger vaccines are unlikely to be available before 2014 and cattle vaccines not before 2015. A licensed injectable badger vaccine may be available by 2010 and although unlikely to be practical for widespread its small scale use in the deployment project is important to understand what may be possible with an oral badger vaccine.

Defra needs a clearly defined compensation policy for dealing with TB in species other than cattle (e.g. llamas) (paragraph 35).

59. The Government recognises the need to develop a formal policy on bovine TB in species other than cattle, such as llamas. An interim compensation policy is currently in place, with compensation of £750 to be paid for each camelid reactor slaughtered. We are currently considering our wider policy on bovine TB in species such as camelids, arrangements for the test and slaughter of infected animals, and whether, and if so how, to provide compensation for them. There have been discussions with the camelid industry to ensure the review is informed by industry concerns.

Defra must review the current table valuation system for compensation of cattle (and other farmed animals) slaughtered for cattle TB. It is currently unfair to farmers of pedigree animals (paragraph 191).

60. The Government does not agree that the current table valuation system is unfair to owners of pedigree cattle. The decision to introduce table valuations for both pedigree and commercial categories of cattle in February 2006 was not taken lightly, but the large body of evidence that the previous compensation system (based on individual valuations) resulted in significant and widespread over-compensation could not be ignored. The current arrangement provides better protection for the taxpayer, and provides significant compensation given that bovine TB reactor cattle are, in commercial terms, only worth salvage value.

61. We recognise that table valuations are unpopular with some cattle farmers, and we would emphasise that:

- table valuations are an entirely objective way of determining compensation;
- a large amount of sales data is collected to support table values (i.e. for around 1.25 million cattle a year) from a large number and wide range of sources;
- table values are only used if sufficient data has been collected. The decision as to what constitutes 'sufficient' data is based on an annual objective analysis (by statisticians) of the variability of sales data within each category; and
- table valuations are not new – they have been used previously in GB and are currently used (for bovine TB purposes) in other parts of the world.

62. The Government has not ruled out the possibility of making changes to the table valuation system but our view remains that any such changes must be fully and objectively justified and must also protect the interests of all parties – including the taxpayer.

63. The Committee will be aware that the NFU have supported a judicial review of the table valuation system and that we are currently awaiting the Court's judgement.

We would encourage a dialogue to continue between the former members of the ISG and the new Government Chief Scientific Adviser (paragraph 75).

64. Sir David King was asked to provide the Secretary of State for Defra with an independent assessment of the scientific evidence relating to badgers and bovine TB in cattle. He therefore sought advice from experts who had not been involved in the ISG report. As his report was to the Secretary of State, Sir David gave him an opportunity to consider the report before making it more widely available. Sir David and former members of the ISG met subsequently and reached agreement on the measures that would be needed if badger culling were to have an overall beneficial effect on levels of bovine TB in cattle.

65. The new Government Chief Scientific Adviser, Professor Beddington, has also spoken to Professor John Bourne, who confirmed the points of agreement. Given this agreement, no further dialogue is planned between Professor Beddington and former members of the ISG. However, Professor Bob Watson, Defra's Chief Scientific Adviser, will continue his interest in bovine TB and involve other experts as necessary.

Department for Environment, Food and Rural Affairs

4 July 2008

Formal Minutes

Wednesday 15 July 2008

Members present:

Mr Michael Jack, in the Chair

Mr Geoffrey Cox	Miss Anne McIntosh
Mr David Drew	Mr Dan Rogerson
Mr James Gray	Sir Peter Soulsby
Patrick Hall	David Taylor
David Lepper	Paddy Tipping

Draft Report (*Badgers and cattle TB: the final report of the Independent Scientific Group on Cattle TB: Government response to the Committee's Fourth Report of Session 2007–08*), proposed by the Chairman, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 27 read and agreed to.

The Government's response to the Fourth Report from the Committee of Session 2007–08 was appended to the Report.

Resolved, That the Report be the Tenth Report of the Committee to the House.

Ordered, That the Chairman make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No.134.

[Adjourned till Thursday 11 September 2008 at 2 p.m.]