

*Consultation on the
Department's Response to
the TB Strategic Partnership
Group's Recommendations
to Eradicate Bovine
Tuberculosis (bTB) in
Northern Ireland*



Department of
**Agriculture, Environment
and Rural Affairs**

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Foreword



**Noel Lavery,
Permanent Secretary, Department of Agriculture
Environment and Rural Affairs**

Eradication of bovine tuberculosis (bTB) is one of the most difficult challenges facing agriculture in Northern Ireland today. bTB poses a huge risk to Northern Ireland's £1 billion plus export-reliant livestock industry both now and after we exit the EU. It has a devastating impact on many individual farm businesses. The spiralling costs associated with rising disease levels are also an unwanted burden for taxpayers.

In 2014 the TB Strategic Partnership Group (TBSPG) was established by the then Minister of Agriculture and Rural Development, Michelle O'Neill MLA, to develop a strategy and implementation action plan to bring about a sustained reduction in bTB. Its final report in December 2016 made a number of recommendations on the way forward.

I want to take this opportunity to again thank the Chair Sean Hogan and members of the Group, Dr Cecil McMurray, Dr George McIlroy, Campbell Tweed and John Thompson for their thorough consideration of the issues.

Incidence rates of bTB continue to rise, putting further pressure on farmers, and driving up costs. Compensation and testing costs in our current bTB programme will reach almost £40 million in 2017/18.

Therefore, finding a workable solution is vital. This consultation outlines proposals - developed in response to the TBSPG's recommendations - designed to reduce, and ultimately eradicate, bTB in Northern Ireland.

When you read this consultation document I would urge you to consider it as a package of interdependent measures rather than a number of stand-alone actions.

It is important to note that final decisions as a result of this consultation will be made by Ministers and take into account budget availability.

Your views are essential to this process. The consultation will run until 1st of February 2018 and I urge you to take the opportunity to shape our policy and help us fight this disease.

A handwritten signature in black ink, appearing to read 'Noel Lavery', written in a cursive style.

Noel Lavery

Part 1 - About this Consultation



Part 1 - About this Consultation

What are we consulting on?

- 1 This consultation sets out the Department of Agriculture, Environment and Rural Affairs' (DAERA's) proposals for a new strategic approach to the eradication of bovine tuberculosis (bTB). The proposals have been developed following consideration of, and in response to, the report 'Bovine Tuberculosis Eradication Strategy for Northern Ireland', published by the TB Strategic Partnership Group (TBSPG), in December 2016. The full report and background papers are available at: www.daera-ni.gov.uk/tbsp-g-btb-eradication-strategy-ni.
- 2 We are seeking your views on the recommendations and proposals set out in this consultation document, which DAERA believes will lead to the reduction, control and ultimate eradication of bTB in Northern Ireland.
- 3 The consultation runs from 30 November 2017 to 1 February 2018.

Scope of this Consultation

- 4 From a long-term perspective it is accepted that the current bTB Eradication Programme has been effective at controlling the disease, however, information on disease trends shows that it cannot be considered as a viable solution for eradication. The disease is complex, persistent and impacted upon by multiple factors. A new multi-dimensional approach is required to drive progress to achieve the goal of eradication.
- 5 The TBSPG highlighted that international experience has shown that the eradication of bTB can only be achieved by simultaneously addressing all the factors that meaningfully contribute to the persistence and spread of the disease in infected animal populations. As such, the TBSPG's recommendations, and the Department's proposals developed in response, cover a number of key thematic areas: governance and partnership working; tools and processes, including improvements to the bTB testing programme; herd health, better biosecurity and reducing risk; the role of wildlife as a reservoir of bTB infection; financing the bTB programme; and the role of research. These themes are, however, all interrelated and do not stand alone. Action is required across all of the themes to secure a fresh and integrated approach to allow Northern Ireland to achieve eradication.
- 6 This consultation document deals with each of the themes described above. It outlines the key issues; the TBSPG recommendations; DAERA's consideration of these recommendations; and asks for views on the changes we are proposing.

- 7 It should be noted that we wish to seek views on the general principles of the changes outlined in this consultation. If appropriate, we may carry out further consultations on detailed proposals at a later stage (which would include variations on current proposals that may emerge from our more detailed analyses), including on any potential changes to legislation.

Equality and Rural Needs Assessment

- 8 Equality and Rural Needs assessments have been carried out to consider potential impacts of the proposals within this consultation. We welcome any comments or views you may have in respect of our assessments. Copies of these assessments are available online at: www.daera-ni.gov.uk/consultations

Business and Regulatory Impact Assessment

- 9 A partial Regulatory Impact Assessment (RIA) has been carried out to consider the potential impacts of the proposals on business. Some proposals, such as those with regards to finance and wildlife, would if appropriate, require a further and more detailed consultation. A further RIA would be carried out at that point. We welcome, however, any comments or views you may have in respect of the partial RIA at this time. A copy of the assessment is available online at: www.daera-ni.gov.uk/consultations

Assessment of Environmental Impact

- 10 An assessment of environmental impacts has not been carried out at this stage. For those proposals which could have an environmental impact, such as wildlife, a second consultation, which would contain a more detailed analysis of the proposal would be carried out. An assessment may be conducted at that time. We welcome, however, any comments or views you may have at this stage.

Who we would like to hear from

- 11 Anyone may reply to this consultation. The bTB Programme, including compensation payments, cost between £29 million and £35 million in the last three years and may cost almost £40 million in 2017-2018 due to increases in bTB incidence levels. This is a major burden on the public purse and, as a taxpayer, you will have an interest in how these proposals will work towards eradicating bTB and reducing this expense. DAERA would particularly like to hear from: cattle/livestock keepers; cattle/livestock associations; conservationists; veterinary surgeons/associations; agricultural markets and valuers; and anyone else with an interest in bTB control and eradication in Northern Ireland.

How to make an enquiry

- 12 If you have any queries about this consultation please contact the Department of Agriculture, Environment and Rural Affairs, Animal Health & Welfare Division, bTB Policy Branch:

Tel: 028 9052 4828

Email: TBBR.Policybranch@daera-ni.gov.uk

Responding to the Consultation

- 13 A copy of the consultation document is available on the DAERA website at:

www.daera-ni.gov.uk/consultations

You can respond to this consultation online at the Northern Ireland Hub - Citizen Space at:

<https://consultations.nidirect.gov.uk/daera-tb-br-policy-and-research/tb-eradication-strategy-consultation>

You can save and return to your responses while the consultation is still open.

Responses by email should be sent to: TBBR.Policybranch@daera-ni.gov.uk

- 14 Written responses will be accepted, although the aforementioned methods are preferable. Again, you should use the Consultation Questionnaire provided, as this will aid our analysis of the responses received. Please send your response to:

Bovine TB Consultation

bTB Branch

Animal Health & Welfare Division

Department of Agriculture, Environment and Rural Affairs

Room 714 Dundonald House

Upper Newtownards Road

Ballymiscaw

Belfast BT4 3SB

- 15 Please ensure that consultation responses are submitted so as to arrive by the closing date of **1st February 2018**.

- 16 This consultation document should be read in conjunction with, and with reference to, the TBSPG Eradication Strategy report which is available online at:

www.daera-ni.gov.uk/tbsp-g-btb-eradication-strategy-ni or hard copy can be requested by contacting bTB Policy Branch on the above telephone number, address or email address.

- 17 While details of particular circumstances described in a response to a consultation exercise may usefully inform the policy process, consultation exercises cannot address individual concerns and comments, which should be directed to the relevant public body.**

Confidentiality & Data Protection

- 18 Your response may be made public by DAERA and placed on the DAERA website as part of the consultation process. If you do not want all or part of your response or name made public, please state this clearly in the response by marking your response as 'CONFIDENTIAL'. Any confidentiality disclaimer that may be generated by your organisation's IT system or included as a general statement in your fax cover sheet will be taken to apply only to information in your response for which confidentiality has been specifically requested.
- 19 Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA) and the Data Protection Act 1998 (DPA)). If you want other information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.
- 20 In view of this, it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

Part 2 - Introduction



Part 2 - Introduction

Overview

What is bTB?

- 21 bTB is a chronic disease in animals, caused by a bacterium which is closely related to that which causes tuberculosis in humans. Although cattle may be the most common hosts of bTB, the disease has been reported in many other farmed, domestic and wild animals.
- 22 The infective dose of the disease is low, meaning that as few as three to four bacteria are required to establish infection in an animal. The disease is spread by direct and indirect contact with infected animals. Inhalation of infected droplets expelled from the lungs is the usual route of infection. Drinking raw milk from infected cows can also infect calves and humans. The bacterium can survive in the environment, particularly in damp and cool environments, for several months.
- 23 The development of clinical disease is slow, meaning an infected animal can spread bTB to many other contacts before it shows any visible signs of the disease itself. Clinically affected animals are now rare in Northern Ireland. Disease spread occurs between cattle within the same or neighbouring herds. The movement of undetected infected cattle which have been negative at herd test and association with infected wild animals are also a means of spreading disease.
- 24 The official test is the Single Intradermal Comparative Cervical Tuberculin (commonly referred to as the SICCT) test. When this test is applied using a standard interpretation (as with all routine tests in Northern Ireland) its specificity is very high, which means that the detection and removal of false positive animals is rare. However, the sensitivity of the SICCT test is variable, and this means that there are animals which test negative to the SICCT test but are in fact infected (false negatives).

How is bTB being controlled currently?

- 25 In Northern Ireland, DAERA, as the competent authority, is required by a range of European Union (EU) and national legislation to test and eradicate bTB. It delivers the bTB Eradication Programme and develops the policy behind the Programme.
- 26 The bTB Programme is an essential underpinning to the ability of Northern Ireland to trade internationally and contributes to the commercial success of Northern Ireland's export-dependent agri-food sector. Therefore, control and eventual eradication of the disease, regardless of the position of Northern Ireland within the EU, will remain a high priority for the agri-food industry.

- 27 The SICCT test is one of the internationally accepted tests used to identify bTB infected cattle. Under EU legislation this is the test we are required to use. While the vast majority of animals that test positive are infected, the test can miss some SICCT infected animals. All cattle herds in Northern Ireland are tested at least annually. Animals that react positively to the SICCT test are compulsorily removed to slaughter, with full market value compensation paid to the herd-keeper. The herd is then identified as a bTB breakdown herd and has cattle movement restrictions imposed upon it until the herd subsequently tests clear of infection and satisfactory cleansing and disinfection of the premises has been carried out.
- 28 The current bTB Programme is generally accepted as having been effective at controlling the disease, however, information on disease trends indicates that it cannot be considered as a viable solution to eradicate the disease.

TBSPG

- 29 The TBSPG was established by the then Minister, Michelle O'Neill, in autumn 2014 as an independent expert advisory group to develop a long-term strategy to eradicate bTB from the cattle population in Northern Ireland. The TBSPG published its bTB Eradication Strategy and Implementation Action Plan in December 2016 and presented its report to the then Minister, Michelle McIlveen.
- 30 The TBSPG considered all aspects of bTB eradication, and put forward 38 recommendations across seven key themes - Governance, Culture and Communications, Tools and Processes, Wildlife, Herd Health Management, Finance and Funding and Research. These themes are interrelated, and the TBSPG suggested that they need to be addressed simultaneously if a reduction in disease and eventual eradication of bTB in the cattle population is to be achieved.
- 31 The TBSPG employed consultants to carry out a cost/benefit analysis of the full package of its interrelated recommendations. That analysis showed that the eradication of the disease would bring substantial financial savings for taxpayers and the farming community, compared to the *status quo* situation remaining for the next 40 years.
- 32 Whilst implementing the Strategy's recommendations would require significant additional investment (and funding) for the bTB Programme, the cost/benefit analysis clearly illustrated that the additional investment would be worthwhile. Simply maintaining the status quo regime would result in an ongoing drain on public finances *ad infinitum*, without securing the monetary savings that eradication would deliver via a much reduced testing and control regime.
- 33 While the TBSPG's recommended measures result in increased Programme costs in the short to medium-term, they are anticipated to lead to reduced bTB incidence with associated reductions in compensation and testing activity over the medium

to long-term. Overall, initial estimates suggest that full implementation of the recommendations would lead to a saving of more than £200 million over 40 years (at 2016 prices). For instance, initial estimates suggest additional investment of £244 million in the bTB Programme would be required across a 40 year period, at 2016 prices. When added to 'baseline' ongoing Programme costs, it is estimated that disease eradication would cost approximately £850 million to deliver over the next 40 years (2016 prices). However, continuing with the current Programme for the next 40 years would cost a greater amount (estimated to be £1,055 million at 2016 prices), and would not deliver eradication.

- 34 The Department has considered the TBSPG recommendations and is generally supportive of the principles, but is keen to hear stakeholder views expressed via this consultation. The TBSPG was very clear that the strength of its Strategy was in it being delivered as a complete package of recommendations, and DAERA agrees with that principle.

Proposals Already Implemented or Soon to be Implemented.

- 35 bTB incidence has been increasing since the 1980s. In December 2010 herd incidence was 5.07%. At the end of September 2017, the annual herd incidence was 9.26% and the animal incidence was 0.898%.
- 36 This steady rise is a cause for concern, both within the Department and in the wider industry. In response, officials have continued to implement and improve the bTB Programme to help tackle the disease.
- 37 As part of its normal ongoing bTB Programme review, DAERA has already implemented, or has plans to implement, a number of improvements which are aligned with the TBSPG's recommendations. Therefore, the Department is not consulting on every recommendation that the TBSPG has made.
- 38 For instance, a number of Programme changes consistent with the TBSPG recommendations were implemented in 2015 and 2016 (in advance of the TBSPG report). These included: an increased application of severe interpretation of the bTB skin test; improved and better standardised surveillance at all cattle abattoirs; improvements to the way the gamma interferon blood test (IFNG) is applied; the use of depopulation and partial depopulation of herds; and the rigorous application of bTB testing standards. It is likely that the recent rise in incidence is partially as a result of these new measures, although this cannot be quantified.
- 39 In response to the recent increase in disease levels, the Department has decided to implement some further measures in 2017 which do not require a significant policy change or new legislation (i.e. they relate mainly to modifications to the existing bTB Programme). Measures to be immediately put in place, or which will be rolled out in the coming weeks, are as follows:

- Further application of severe interpretation of skin tests in breakdown herds;
 - The introduction of a further herd test after a breakdown herd is derestricted in certain situations, to reduce the risk of further breakdowns;
 - A SICCT test reactor quality assurance pilot to establish baseline data on bTB test reactions; and
 - Measures to improve herd health checks through the introduction of a biosecurity self-assessment checklist as part of the bTB testing contract.
- 40 The Department is also progressing a change which will see more herds that have more than one skin test reactor during the course of a breakdown have their Officially Tuberculosis Free (OTF) status withdrawn. This is a change to the bTB Programme designed to make the Department's disease control measures more rigorous and to give more assurance that such herds are in fact clear of bTB infection when they become free to move cattle to other herds.
- 41 In addition to the disease control measures outlined above, the Department has carried out surveys of badgers for bTB infection in two areas (one around Aghadowey, Co. Londonderry and the other near Omagh, Co. Tyrone). These were selected as they are areas that have a high density of herds with bTB reactors and are also thought to have a high density of badgers. As part of these surveys, Departmental staff have mapped badger setts, blood tested a small number of badgers and removed any test positive badgers for laboratory examination. Any released badgers were vaccinated against bTB.

Why are we consulting on the remaining proposals at this point in time?

- 42 In the context of rising incidence of bTB, it is clear to the Department that there is a frustration and a desire within the farming community that further actions are taken to tackle the disease. Therefore, while the political situation and absence of a Minister meant that the public consultation originally planned for early 2017 did not take place, it has been decided that consultation on the Department's proposals, which have been developed in response to the TBSPG's recommendations, is both a necessary and a positive step.
- 43 It should be noted that this is a consultation on proposals and not a commitment to action by the Department. A final decision on any recommendation that may result in a significant policy change or would require a change in legislation is unlikely to be taken forward without a Minister being in place. The timing, sequencing and extent of the implementation of the proposals will also be subject to the necessary approvals and budget availability.

Getting the message across

- 44 A key to eradication, and to the introduction of any new measure, will be effective communication. The TBSPG recognised the importance of sharing information when it recommended that...

“ .. a vigorous publicity, communication and knowledge transfer plan is developed and implemented.”

- 45 The Department has many methods of communicating key messages to farmers, including the use of leaflets, the website, on-farm visits, targeted College of Agriculture, Food & Rural Enterprise (CAFRE) training and press articles. It is clear, however, that much more needs to be done to get the message out to stakeholders and the wider industry about how to prevent bTB getting onto the farm and how all parties can work towards eradication. The Department accepts that eradication is only achievable if Government and industry work together in partnership towards that goal and if a new shared communications and knowledge transfer plan is a central part of helping to achieve that.
- 46 Any action which is implemented following this consultation will be underpinned by a robust communication plan.

Part 3 - Proposals for Consultation



Part 3 - Proposals for Consultation

A New Approach to Management, Oversight and Partnership Working

Issue

- 47 In Northern Ireland, bTB policy and the bTB Programme are delivered by DAERA. Responsibility for setting policy and strategic direction rests with the Minister, with input and advice from the Department as appropriate. The Department also exercises budgetary control and operational delivery of the Programme. DAERA is also what is termed the 'Competent Authority' with respect to ensuring compliance with EU requirements and regulations.
- 48 At this stage, the potential impact of Brexit on agricultural policy, trading relationships and disease controls is uncertain. The EU Withdrawal Bill will ensure current EU animal health and welfare regulations are converted into UK law and continue to apply from the day after the UK leaves the EU. Therefore, in the short-term, the Programme around bTB eradication that is currently subject to EU regulations will remain unchanged. It is unclear in the medium to longer-term how the finalised post-Brexit arrangements will impact on the Northern Ireland agriculture industry, particularly where live exports of cattle and agri-food products are concerned. It will be vital that any new bTB Programme has the flexibility to respond to this currently uncertain future environment.
- 49 The statutory testing of animals is carried out by contracted Private Veterinary Practices (PVPs) and Department vets - with PVPs carrying out the majority of herd testing. There are some formal mechanisms for engagement with stakeholders through the Animal Health and Welfare Stakeholder Forum and the bTB Stakeholder Working Group. These two groups represent a range of industry, conservation and veterinary stakeholders, (details of representative organisations are at Annex A), and both groups meet at least quarterly. There is ad hoc stakeholder engagement in response to particular or emerging issues, and there is a wide range of information sharing and discussion at a local level between farmers, vets, DAERA divisional veterinary manager and other departmental staff. However, the Department acknowledges that there is room for improving the structures by which all stakeholders understand and accept the part they play in working towards bTB eradication and recognise how their contribution makes a difference and sits within a holistic and joined-up approach.
- 50 There is also a role for the Council for Nature Conservation and the Countryside (CNCC)¹ as the departmental statutory advisory body on matters affecting nature conservation and the countryside.

¹ www.daera-ni.gov.uk/articles/council-nature-conservation-and-countryside

TBSPG View on Management, Oversight and Partnership Working

- 51 Having reviewed the current bTB Programme, the TBSPG came to the conclusion that, under the present system, the bTB Programme was something which happens to farmers rather than farmers and other key parties being able to influence the policy and strategy in relation to the bTB Programme. They considered this to particularly be the case at a local level, when farmers can feel distanced from the efforts to eradicate bTB. They believe farmers are only engaged when a breakdown occurs on their farm resulting in barriers to meaningful ongoing engagement.
- 52 The TBSPG believes that among the key challenges is the need to change culture, mind-sets, approach and attitudes across all stakeholders, including Government. The Group saw a need to ensure that the strategic shift from what has taken place previously in relation to bTB management, testing, control and eradication efforts is properly communicated to all. A sense of ownership of actions to eradicate bTB needed to be established with all stakeholders.
- 53 A key aspect of helping to achieve this objective of cultural change is the TBSPG recommendation that new governance arrangements are put in place to facilitate greater stakeholder input and engagement.

TBSPG Recommendation for a New Governance Structure

TBSPG Recommendation 1.1

- 54 The TBSPG recommended that...

“ .. a new governance structure should be put in place, with the establishment of:

- A NI level oversight body, the TB Eradication Partnership (TBEP)*
- A small number of Regional Eradication Partnerships (REPs), and*
- Responsive local Disease Response Teams (DRTs).*

Each level should involve representatives from the farming industry working in partnership with DAERA, PVPs, nature conservationists, bTB scientific experts, and other key stakeholders. They would, operate under the principles of active participation by everyone, have a focus on disease eradication and an ability to influence policy and disease control. At a NI level they would work in partnership with Government in developing strategic direction.”

- 55 The TBSPG proposal envisages three levels within the new oversight and disease response structure. These would be at a Northern Ireland, regional and local level and each would have specific responsibilities.
- 56 In summary the three levels proposed by TBSPG are:
- A **TB Eradication Partnership (TBEP)** would fulfil an expert committee role, providing advice to the DAERA Chief Veterinary Officer (CVO) and policy makers within DAERA on strategic and operational issues and monitor progress of the bTB Eradication Programme. The TBEP would have access to the Minister on any significant issue and would be prepared to give evidence to the Northern Ireland Assembly Agriculture, Environment and Rural Affairs Committee (AERA Committee) as required.
 - Three **Regional Eradication Partnerships (REPs)** would each have a specific focus on bTB eradication in their particular geographical region. The REP's key objective would be to work collaboratively and in partnership with Government and stakeholder representatives to effect the eradication of bTB in their area. They would also provide advice and feedback to the TBEP.
 - Local **Disease Response Teams (DRTs)** would be formed on an ad hoc basis in response to a serious outbreak, repeated breakdowns in an area, or to deal with particular disease issues.
- 57 Further details can be found within the TBSPG report:
www.daera-ni.gov.uk/tbsp-g-btb-eradication-strategy-ni.

DAERA Consideration of TBSPG Recommendation 1.1

- 58 The Department has considered the TBSPG recommendation and believes that the greater involvement of stakeholders in the bTB Eradication Programme at all levels, as proposed, would represent a positive step and should be supported. It is clear that a new structure and a fresh approach to dealing with bTB in Northern Ireland would provide a clear signal that this is a new beginning to collectively working towards bTB eradication; establishing a clear demarcation between what has gone before and what the approach will be in future.
- 59 The Department is proposing new partnership structures (as outlined in Figure 1, page 21) which will give stakeholders a greater voice in influencing policy development, programme delivery and local decisions relating to bTB eradication. Roles and responsibilities of TBEP, REP and DRT levels are proposed as follows:

TBEP

The primary responsibility of the TBEP should be to monitor progress of the bTB Eradication Programme and provide strategic policy advice, including bringing forward policy proposals for consideration as required. This strategic remit will include participating and inputting to a formal review of the bTB Eradication Strategy every five years.

Under the proposed system, the TBEP would provide policy advice and bring forward policy proposals for consideration.

Ultimate responsibility for decisions in relation to policy would remain with the Minister. The Department would retain budgetary responsibility; retain operational delivery of the Programme and would remain the Competent Authority for all matters relating to the EU or what is established post Brexit.

Detailed oversight of the operational aspects of the bTB Programme would be more appropriate at a regional level and Regional Eradication Partnerships (REPs) should undertake this function for their area.

It is proposed that appointed members of the TBEP should receive payment for their role and be reimbursed for travel incurred as a result of their involvement.

REP

It is anticipated that three REPs would be set up in Northern Ireland. The REPs would each have a specific focus on bTB eradication in their particular geographical region of Northern Ireland, and would interact directly with local stakeholders and the operational staff in DAERA's divisional veterinary offices. REPs would consider and recommend actions to address bTB in their area and bring these to DAERA for consideration. There would also be a need for the REPs to communicate with the TBEP on their activities and to highlight any significant programme issues that arise in their areas.

As an example the REP could make recommendations to the Department on areas for wildlife interventions, biosecurity improvements and segregation notices. It will also be important that the three REPs share information and experiences with each other to ensure that the disease is tackled in a co-ordinated way.

It is proposed that appointed members should not receive payment for their role as it is at an operational and sub-regional level rather than at a strategic and regional level; but should be reimbursed for travel incurred as a result of their involvement.

DRT

It is proposed that Disease Response Teams (DRTs) be set up on an ad hoc basis to tackle specific bTB issues. They will seek to ensure local engagement in the event of a severe disease outbreak and obtain unified agreement for actions in discussion with the local Divisional Veterinary Officer (DVO).

The REP should, in consultation with a local DVO, agree when a DRT should be convened. The Chair should be determined by the REP and, if appropriate, a stakeholder may undertake this role, for example, one of the farming representatives from the REP or a farmer from the DRT geographic area.

Given the anticipated ad hoc nature of DRTs, it is not proposed that members should receive payment for their role.

- 60 This new partnership working would be an important step in helping to establish the cultural change needed to eradicate bTB. The implementation of the proposal would also ensure that the Department has a formal structure to access advice from stakeholders in its development of policy and delivery of the Programme. The new groups and structures should also provide the opportunity for greater transparency in decision-making. It will be important that those participating on the various bodies, particularly at a regional and sub-regional level, do so to further the public good and avoid potential conflicts of interest.
- 61 Annex B outlines the roles and membership of each body within the partnership structure.
- 62 It is estimated that the total direct cost of the TBEP, REPs and DRTs would be in the region of £15,000-£20,000 per annum based on the TBEP meeting at least six times per year. This excludes the cost of appointments and DAERA staff input.

Early Implementation

- 63 The incidence of bTB has continued to increase over 2017 and the Department is very aware of the farming industry concern and frustration at the lack of implementation of the TBSPG recommendations. In normal circumstances the recruitment and appointment of the TBEP would be a Ministerial decision.
- 64 The Department believes it is important to demonstrate to the farming community and key stakeholders that they have a meaningful and influential position in re-focused efforts to implement enhanced and innovative actions to address bTB in Northern Ireland. The Department has already announced a number of measures to enhance the existing bTB Programme which are aligned to the TBSPG recommendations.

Figure 1 TBEP/REP/DRT Proposed Governance Structures/Lines of Communication

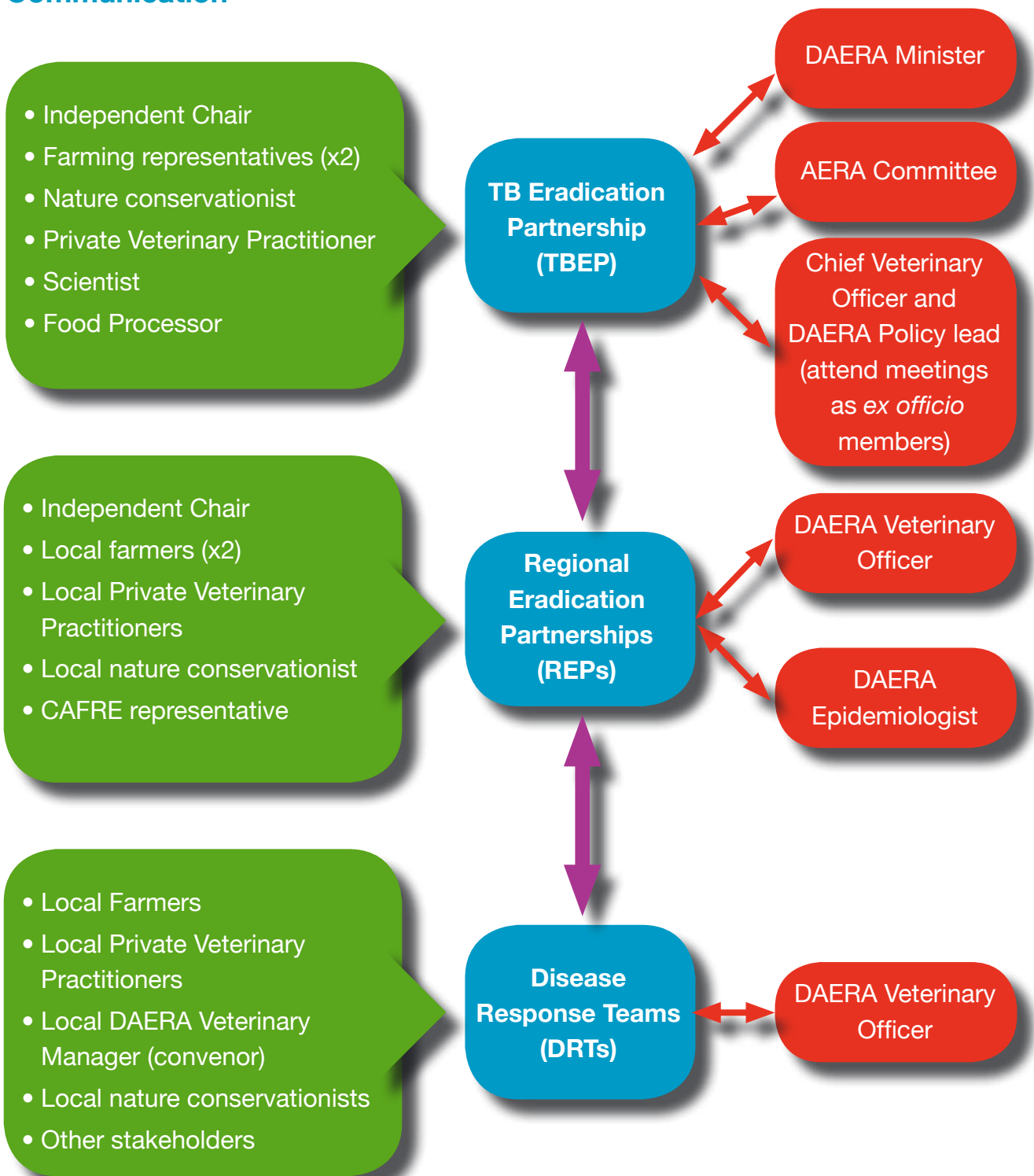
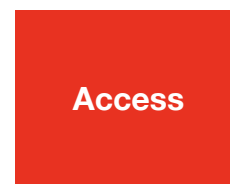
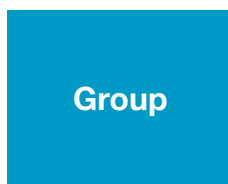


Diagram Key



- 65 Additionally the Department plans to proceed with the recruitment of a chair and members to establish the TBEP. These appointments will either be made by the Minister, if in post, or by the departmental Permanent Secretary and will be for an initial one year period. It is viewed as important that the TBEP is established as early as possible to allow it to work with the Department in considering the feedback from the consultation, in the development of the bTB eradication strategy and to assist in driving that strategy forward.
- 66 The views expressed in this consultation will still be important in informing how the partnership structures should work in future.
- 67 It was not felt appropriate to establish the sub-regional and local structures at this stage. The views expressed in the responses to this consultation and those of the TBEP when established will be important in both their design and role.
- 68 The Department has taken into account the wide range of stakeholder interests identified by the TBSPG and believes that its proposal reflects a fair balance of the various interested parties. It is important that the farming industry, the processing sector, nature conservationists, private veterinary practitioners and scientists are all represented, as all have a key role to play in working together to eradicate this disease. These groups may have a diverse range of views, but it is important that all have the opportunity to work together in partnership with Government. While members at all levels of the new arrangements would be representative of various sectorial interests, they would be required to act individually and collectively in the public interest.

Questions:

- G1** Do you agree with the proposal for new partnership structures to oversee the bTB Programme and to help both stakeholders and Government work together to eradicate the disease?
- G2** Do you agree with the three tiered approach at a national, regional and local level?
- G3** Do you agree with the membership of each tier as proposed?

Tools and Processes

Current position

- 69 The TBSPG Eradication Strategy outlined a number of recommendations under Tools and Processes, which the Department is already taking steps to implement as part of its normal, ongoing bTB programme review. These include: improved surveillance; expanded use of severe interpretation; action to reduce the number of reactors required for Officially Tuberculosis Free Status Withdrawn (OTW) consideration; additional testing for derestricted herds in certain circumstances; herd depopulation; and further development of the Department's new Geographical Information System (GIS).
- 70 Surveillance is an important tool in enabling early detection of infection and in contributing to a reduction in the spread of bTB. The Department has worked in parallel with the TBSPG on the **introduction of the new bTB testing contract** and continues to oversee delivery, monitoring and improvement of the contract. The Department also works to ensure that optimum levels of test sensitivity are achieved through training, **robust management and monitoring of testing vets**. A contract manager has been appointed for this purpose.
- 71 In line with the TBSPG's recommendation on abattoir surveillance, work has been undertaken to ensure that **routine post mortem surveillance is both rigorous and uniform** across all Northern Ireland slaughterhouses. As a result, the number of suspect cases detected at routine slaughter has increased numerically and proportionally, ensuring **early detection of suspected bTB**.
- 72 In the coming weeks, the Department will implement the TBSPG's recommendation that the use of severe interpretation should be expanded during breakdowns in OTW herds to require the **removal of all animals that are inconclusive on standard interpretation of the skin test** as part of its ongoing bTB programme review. The rationale for the recommended approach is that the sensitivity of the skin test (ability to detect infected animals) can be increased by **applying a more stringent interpretation of test results**. Animals in these breakdown herds which have previously been inconclusive to the bTB test, will also be removed as negative in-contact animals. The recommendation was based on the Department's Veterinary Epidemiology Unit (VEU) research, which clearly demonstrated the increased risk of leaving animals that are positive on severe interpretation in a breakdown herd.
- 73 The Department has also taken forward the TBSPG recommendation that a herd with **two or more non visible lesion (NVL) reactors should have its OTF status withdrawn** and should require two consecutive clear herd skin tests at least 60 days apart to regain OTF status. VEU research has demonstrated that the risk of

future breakdown increases directly with the number of reactors identified during a bTB breakdown. This has a disease control benefit because the additional controls are applied to the breakdown herd and contiguous and traced herds. It is likely to impact on a relatively low number of herds.

- 74 The departmental policy has been that a check herd test (CHT) is carried out approximately six months after a breakdown herd has been cleared. If the CHT is clear, the herd is normally then placed back onto the routine annual testing regime. In line with the TBSPG's recommendation, it has been **decided to introduce a further herd test, six months after the CHT**, for recently derestricted breakdown herds that are considered a higher risk. This effectively means that an additional six-month herd test will be carried out before the herd can be returned to the routine annual testing regime. This recommendation was based on analyses which show that herds with a recent history of infection are more likely to fail subsequent bTB tests. Currently further reactors are detected at 10% of CHT tests and in some areas this can be as much as 15% of herds. As such, it is clear that there is residual infection in some herds following many breakdowns, and it is necessary to put in place further measures to ensure this is detected at an earlier stage.
- 75 In addition to the implementation of measures to improve sensitivity, the TBSPG recommended that the benefits of **depopulation as a control measure should be considered in herds with multiple reactors**, especially in herds where reactors represent a significant proportion of a particular group. Under existing legislation, the provisions included in this recommendation are already being implemented by the Department.
- 76 In line with the TBSPG's recommendation that the GIS is further developed as a resource to meet the requirements of staff, PVPs and the governance groups, **the Department has developed a GIS viewer to improve the efficiency of the mapping process to identify herds on lands that are beside breakdown herds**. This can also be used to enable staff to provide additional information to allow those involved in the programme to visualise the bTB situation on a local, regional and national scale. Further work is currently being undertaken to develop the GIS as a resource.
- 77 The Department is consulting on the remaining 'Tools & Processes' recommendations in the TBSPG Eradication Strategy.

Improved Management of bTB Infected Herds

Increased Use of gamma interferon Testing - TBSPG View

- 78 The TBSPG Strategy outlines the benefits and limitations associated with gamma interferon testing. It also considers the constraints imposed as a result of limited

laboratory capacity, cost and logistics. Because of these constraints, the gamma interferon test is currently offered to farmers on a voluntary basis only and removal of positive animals is also voluntary.

TBSPG Recommendation 3.2 2

79 The TBSPG recommended that...

“ .. the use of the gamma interferon (IFNG) test is expanded to remove infected animals as quickly as possible. In particular, we recommend that DAERA makes it compulsory for:

- (i) herd-keepers to have the test if the Department considers it necessary; and*
- (ii) for all animals positive to the gamma interferon test to be removed.”*

DAERA Consideration of TBSPG Recommendation 3.2.2

80 The Department agrees that it is essential that infected animals are detected and removed from herds as quickly as possible. In certain circumstances, gamma interferon testing can provide a valuable tool to enhance the sensitivity of surveillance testing through the earlier detection of infected animals. It is therefore the view of the Department that, where it is considered necessary, gamma interferon testing should be used in parallel with the skin test in certain cases such as higher risk herds/groups within herds and wherever full or partial depopulation is being considered.

81 It is recognised that increased use of gamma interferon testing would require a significant increase in the laboratory capacity (and associated costs) to process additional test samples. Work is ongoing to consider how the capacity of the Agri-Food and Biosciences Institute (AFBI) laboratories can be increased to facilitate higher sample numbers. The compensation cost of removing a higher number of positive animals will also substantially increase. Resolution of the barriers associated with capacity should bring significant benefits and improvements to enable effective targeting for bTB eradication and improved delivery of the programme.

DAERA Proposal

82 The Department proposes to expand the use of gamma interferon testing to the extent that would allow the introduction of a mandatory requirement for herds/ groups to have the gamma interferon test where the Department considers it necessary; and for all animals which test positive to the gamma interferon test to be removed. This would remove the option for herd-keepers to retain any animals which have tested positive to the gamma interferon test.

83 Currently, logistical constraints and testing capacity limit use of the gamma interferon test. The Department offers the test to priority herds which are selected using a defined set of criteria. As the capacity is increased, the Department will review the selection criteria and make the necessary adjustments to ensure the test continues to be deployed in the most effective manner. It is proposed that increases in the test capacity will be phased in as financial resources and laboratory facilities become available and in advance of compulsory testing.

Question:

T1 Do you agree that there should be a mandatory requirement for herd-keepers to have their animals undergo gamma interferon testing where DAERA considers it necessary and that all animals which test positive to the gamma interferon test should be removed?

Action on Chronic Herds - TBSPG View

84 The TBSPG Strategy points out that certain herds have a much greater tendency to develop prolonged and/or recurrent bTB breakdown incidents. These are termed, 'chronic herds'. These herds are an issue for farmers and the Department. They result in disruption to business and additional costs to herd-keepers.

TBSPG Recommendation 3.2.3

85 The TBSPG recommended that...

" .. 'chronic herds' should be recognised as a distinct entity for action.

We also recommend that there should be a renewed approach to dealing with chronic herds. This should involve using relevant measures and processes, already identified, in a package targeted at resolving or minimising their impact.

The TBEP and DAERA should continuously monitor ongoing research into chronic herds to better focus current, and develop new, approaches to dealing with them."

DAERA Consideration of TBSPG Recommendation 3.2.3

- 86 The Department recognises chronic herds as a significant issue which should be addressed.
- 87 The Department proposes that prioritising resources towards chronic herds should be potentially very beneficial from both a bTB control perspective and from a financial perspective. Further research is currently underway in both VEU and AFBI to enhance understanding of the epidemiology of chronic herds and to support improvements in the way they are dealt with in the future.
- 88 In line with the recommendation that ongoing research into chronic herds should be continuously monitored, the Department proposes to increase and enhance its knowledge and understanding of chronic herds and their impact, through internal research, in partnership with AFBI and by liaison with other jurisdictions involved in relevant research.

DAERA Proposal

- 89 The Department proposes that focusing on chronic herds could result in significant progress in dealing with bTB. It is recognised that there are a number of reasons why a herd may be considered 'chronic'. A chronic herd may be a herd which has had a long breakdown with repeated positive test results, it may be a herd which has had recurrent episodes of infection over a period of time, or it may be a combination of both.
- 90 The TBSPG recommendation refers to '*targeted*' measures and processes. The use of a targeted approach will be important as there are a significant number of herds involved. Decisions on the level and type of intervention considered for a particular herd would have to be based on the likelihood of intervention having the desired effect and making a positive impact. For this reason, it is recognised that Veterinary Officers would have to apply professional judgement in making decisions on what, if any, action to take in specific circumstances. When applying professional judgement to determine the appropriate course of action to take in specific circumstances, Veterinary Officers would take into consideration a range of existing and possible new measures aimed at resolution, prevention and reducing the risk posed to other herds, including:
- Communication with farmers explaining, why and how investigation work is to be carried out on their herd;
 - Detailed veterinary investigation to identify risks and recommend the measures to be applied;

- Involvement of PVPs in testing, providing advice, input to investigations and meetings/discussions with the Veterinary Officer and farmer;
- Provision of specific biosecurity advice;
- Enforcing legally required biosecurity measures such as isolation, restricting high-risk groups to specific fields and stopping moves to farm fragments;
- Early robust intervention, removal of risk animals at an early stage in a new breakdown herd;
- Maximising sensitivity of surveillance in the herd including ensuring a high quality of testing, use of severe and super severe interpretation, reviewing readings of previous tests and removing suspect animals, use of gamma interferon testing, removal of negative in-contact animals;
- Dealing with infection in the locality including wildlife intervention, area testing, area group meetings and actions e.g. agreements between farmers regarding grazing and training;
- Consideration of fraud or atypical reactions to the bTB skin test; and
- Reducing future risk (to other herds) through an additional six-month test.

91 The Department will have to remain mindful of current public sector financial constraints and must ensure that available resources are targeted at those herds where the impact is most likely to result in positive outcomes. For these reasons, the Department will tailor its approach to dealing with chronic herds by prioritising herds based on potential impact and available resources.

Question:

T2 Do you agree that '*chronic herds*' should be recognised as a distinct entity for action and that there should be a renewed approach to dealing with chronic herds as outlined based on the likelihood that intervention will have a positive impact?

Requirement for a Herd Test Prior to Restocking - TBSPG View

92 With the exception of severe breakdowns, the Department currently allows keepers to buy animals into breakdown herds before any of the remaining cattle in the herd which had negative test results, are retested. EU legislation, (Council Directive 78/52/EEC), requires negative results on all animals after a full herd test before allowing movement onto a farm, following any disclosure. The EU legislation further prevents restocking of herds subject to epidemiological assessment. The TBSPG Strategy states that the Department should move towards full compliance with EU legislation.

TBSPG Recommendation 3.2.4

93 The TBSPG recommended that...

“ .. DAERA should move to prevent restocking of all breakdown herds until after the first herd re-test (and subsequent removal of any reactors).

We recommend that

- (i) in the medium-term, DAERA should prevent restocking of herds that do not test clear at the first retest (subject to epidemiological assessment).*
- (ii) in the longer-term, we recommend that the TBEP should consider whether it would be beneficial to require a negative full herd test, before allowing movement onto a farm following any disclosure (herds that are Officially Tuberculosis Free Status Suspended (OTS) and Officially Tuberculosis Free Status Withdrawn (OTW)) and further prevent restocking of herds (subject to epidemiological assessment).”*

DAERA Consideration of TBSPG Recommendation 3.2.4

94 A move towards full implementation of this recommendation may have some bTB control benefits. While the benefits may not be substantial, there is the potential for any non-compliance to impact negatively, either through infraction proceedings for non-compliance with EU legislation or as a barrier to trade.

DAERA Proposal

95 The Department recognises that implementation of this recommendation would have a considerable impact on the industry. However, the Department remains mindful of the need, not only to comply with EU legislation, but to consider all measures which will contribute towards the eradication of bTB. The Department is also conscious of the need to limit the number of cattle which may potentially become infected in the event that a reservoir of undisclosed infection remains on a premises. Therefore, it is proposed to introduce measures to prevent restocking of breakdown herds through a phased approach in order to minimise potential hardship for herd-keepers.

96 As a first step, it is proposed to introduce an interim transition stage where no movements will be permitted following a bTB breakdown until at least one further full herd test has been completed (irrespective of the outcome) and the removal of any reactors disclosed at such a test.

Questions:

- T3** Do you agree that the Department should introduce measures to prevent restocking of breakdown herds through a phased approach?
- T4** Do you agree that the Department should introduce an interim transition stage where no movements will be permitted following a bTB breakdown until at least one further full herd test has been completed (whether clear or not) and reactors have been removed?
- T5** Do you agree that, in the medium-term, the Department should prevent restocking of herds that do not test clear at the first retest (subject to epidemiological assessment)?
- T6** Do you agree that, in the long-term, the Department should require a negative full herd test before allowing movement onto a farm following any disclosure episode?

Limited Moves from bTB Breakdown Herds in Certain Circumstances - TBSPG View

- 97 The TBSPG Strategy recognises that, when a herd is restricted for bTB for an extended period, overstocking and cash flow difficulties can occur. The TBSPG outlines its rationale for recommending limited, lower-risk movements from breakdown herds combined with strict biosecurity protocols.

TBSPG Recommendation 3.2.6

- 98 The TBSPG recommended that...

“ .. DAERA consider permitting limited moves from bTB breakdown herds to approved rearing/finishing herds which are 100% housed and meet strict biosecurity conditions.”

DAERA Consideration of TBSPG Recommendation 3.2.6

- 99 The Department understands that implementation of this recommendation could relieve some pressure on the industry. The Department is mindful of the need to ensure that, in bringing forward a proposal to permit limited moves from bTB breakdown herds, it must remain compliant with EU legislation. Such a proposal must also ensure that no other herds are put at risk as a result of such animal movements taking place. Therefore, strict biosecurity protocols would have to be observed in order to prevent bTB spread from the rearing/finishing herd.

DAERA Proposal

100 The Department proposes to put in place mechanisms, in compliance with EU legislation, which would enable limited moves from bTB breakdown herds to approved rearing/finishing herds which are 100% housed and which meet defined, strict biosecurity conditions. In doing so, the Department would take appropriate steps to ensure that no other herds are put at risk as a result of any move from a bTB breakdown herd.

Question:

T7 Do you agree that moves should be permitted from bTB breakdown herds to approved rearing/finishing herds which are 100% housed and which meet defined, strict biosecurity conditions?

Bovine TB Programme Integrity and Additional Control Measures

DNA Tagging - TBSPG View

101 The TBSPG Strategy points out that, if PVPs were to be authorised to apply the DNA tags to animals when reading the skin test, this would enhance the continuity of reactor identification and reduce the risk of errors or fraud, so strengthening disease control.

TBSPG Recommendation 3.3.1

102 The TBSPG recommended that...

“ .. Private Veterinary Practitioners (PVPs) should apply DNA tags to any animals that they detect with reactor readings when they are reading the test results.”

DAERA Consideration of TBSPG Recommendation 3.3.1

103 A DNA tag is applied to allow the identity of a reactor animal detected on farm to be compared with that of the slaughtered animal. If all reactors are DNA tagged at disclosure (when reading the test), this would enhance the continuity of reactor identification and reduce the risk of error or fraud.

DAERA Proposal

- 104 The Department agrees that authorising PVPs to apply DNA tags to all reactors at disclosure would strengthen disease control. The bTB testing contract already includes provision for PVPs to apply DNA tags to reactor animals at disclosure, however, implementation would require a legislative change. The Department therefore proposes to bring forward amendments to relevant secondary legislation to enable PVPs to apply DNA tags at disclosure.

Question:

- T8** Do you agree that legislation should be introduced to authorise PVPs to apply DNA tags to reactors when reading the test?

Bovine TB Reactor Quality Assurance Checks - TBSPG View

- 105 TBSPG heard evidence that there are occasions when cattle are presented for valuation and slaughter that have given positive skin readings but not as a natural response to the skin test, the implication being that there has been interference with the skin test. TBSPG believes work should be carried out to quantify the extent of the problem and to develop ways to prevent such practice.

TBSPG Recommendation 3.3.2

- 106 The TBSPG recommended that...

“ .. DAERA develops a preliminary field trial and associated research to help establish counter measures to prevent occurrences of cattle being presented as reactors which have not given a natural response to the injection of tuberculin.”

DAERA Consideration of TBSPG recommendation 3.3.2

- 107 The Department has developed a pilot scheme for the quality assurance of bTB reactors, which started in November 2017. Checks take place at the same time as valuation (usually several days after the positive test result is recorded).
- 108 The Department is conducting the pilot in order to acquire data on bTB skin test reaction regression and the gamma interferon test response in reactor animals and to quality assure certain testing procedures. The trial will be used to establish a baseline against which to measure future actions. In the course of the trial, no enforcement action will be taken, regardless of the outcome of checks, however, herds and individuals may be subject to future scrutiny and evidence gathering.

DAERA Proposal

- 109 Following the pilot scheme, the Department will review and consider further policy changes as appropriate. This could potentially include introducing a policy on bTB reactor quality assurance checks and further actions where fraud is suspected. This may require changes to legislation.

Question:

- T9** Do you agree that, in the event that the pilot scheme demonstrates that there is value in doing so, the Department should undertake reactor quality assurance checks as appropriate?

Additional Decision-Making Support

Use of Molecular Typing - TBSPG View

- 110 The TBSPG Strategy outlines advances in scientific techniques which assist the development of DAERA's understanding of the dynamics of bTB, and which provide important tools for tracing its spread within and between affected cattle and badger populations.

TBSPG Recommendation 3.4.2

- 111 The TBSPG recommended that...

“ .. the use of molecular techniques should be expanded as we seek to eliminate bTB from our cattle.”

DAERA Consideration of TBSPG recommendation 3.4.2

- 112 Scope exists for greater use of strain typing, Variable Number Tandem Repeats, data within the bTB Programme. The absence of comprehensive analyses means that there is not a full awareness of the contribution that strain typing makes/could make to understanding bTB, disease controls and policy development.
- 113 Integrating Whole Genome Sequencing (WGS) with classical epidemiological data and modelling has the potential to significantly improve the Department's understanding of bTB maintenance and spread. This could provide the highest possible resolution of the transmission dynamics (cattle-to-cattle, badger-to-cattle, cattle-to-badger, badger-to-badger transmission rates).

DAERA Proposal

- 114 The Department proposes to expand the use of molecular techniques to support efforts to eradicate bTB from cattle in Northern Ireland. This would help improve epidemiological understanding of the infection at all levels and should help in adapting local measures accordingly.

Question:

- T10** Do you agree that the Department should expand the use of molecular techniques in order to support its strategy to eradicate bTB?

Wildlife

Issue

- 115 The Department is aware that bTB in cattle can be spread in many different ways. Wildlife, in particular badgers, can be a contributing factor in the maintenance and spread of infection in cattle. An effective means of addressing the risks posed by wildlife will have to form a part of the solution if the objective of eradicating the disease is to be achieved. It is, however, important to note that any actions to address risks posed by wildlife would have to be accompanied by effective cattle controls so that all aspects of disease transmission are effectively addressed.
- 116 In developing its report, the TBSPG considered the various species of wildlife that could potentially be involved in the spread of bTB in cattle in Northern Ireland. The TBSPG recognised that wild deer and camelids can play a role in the spread of bTB, but that there is insufficient evidence to suggest that they are a major reservoir host of infection in Northern Ireland. The TBSPG also found little epidemiological evidence to indicate that other species (for example feral cats and rats) are a significant factor in the spread of bTB here.
- 117 It is, however, widely recognised that the badger population acts as a reservoir of bTB in Northern Ireland. The ongoing Road Traffic Accident (RTA) Survey indicates that at least 17% of badgers in Northern Ireland are infected with bTB. It should be noted, however, that there are limitations and biases with surveys of this nature. It is also possible that the true levels of infection are not being disclosed, as full forensic post mortems are not carried out on RTA badgers. It is therefore probable that the true bTB level in badgers is higher than the 17% quoted. Strain typing data demonstrates that badgers and cattle in a locality often have the same strains of bTB.
- 118 There remain, however, many unknowns about the role badgers play in bTB transmission. It is not currently known, for example, the direction and frequency of transmission between cattle and badgers. The badger, however, is not regarded as a 'dead-end host', which means it is capable of infecting other badgers or other susceptible species.

TBSPG Recommendations

TBSPG Recommendations 4.1 to 4.4

119 The TBSPG has made 5 recommendations in respect of wildlife. The TBSPG recommended that...

“.. Regarding the role of other species in relation to bTB transmission, we recommend that the TBEP should keep the position in relation to wild deer and camelids under review” [4.1]

“In the longer term, we recommend that badger vaccination should form part of a sustainable badger intervention strategy in support of an effective disease control strategy. This could be combined along with strategic removal of badgers or implemented as a stand alone intervention depending on the circumstances” [4.2.1]

“We recommend that, once an effective oral bait vaccine for badgers has been developed and is available, the TBEP should consider how it could most effectively be deployed. This widespread vaccination of badgers, deployed in suitable areas, would be an integral part of a sustainable and long term curtailment of bTB infection in badgers.”[4.2.2]

“.. that a badger control policy should be implemented to reduce the overall level of infection in the badger population. This policy should be based on an agreed flexible process which could be used as appropriate in a particular area or set of circumstances. This intervention should include the culling of badgers in areas of high levels of bTB in cattle and, in order to mitigate the risks associated with the perturbation effect, the vaccination of badgers, combined with culling of test positive badgers in a surrounding area. After the multi-year programme of badger culling is completed, we also recommend that consideration be given to a further period of vaccination in the core zone. The TBEP should consider how this could best be delivered and make recommendations to DAERA.” [4.3]

“ .. the RTA Survey should be expanded to have uniform coverage throughout NI and the methodologies should be refined. [4.4]

DAERA Consideration of TBSPG Recommendations 4.1 to 4.4

- 120 The TBSPG's recommendations sit broadly within three main themes, which could together form the basis of a holistic wildlife strategy. These themes are:
- Badger Intervention Strategy (in both the shorter and medium to long-term);
 - Role of other species in the spread of disease; and
 - Wildlife Research.

Badger Intervention Strategy

- 121 The Department recognises that badgers play a role in the maintenance and spread of bTB in cattle and accepts that action to address this risk must play a part in an overall bTB Eradication Strategy. The badger is a protected species under the Wildlife (Northern Ireland) Order 1985, and it is also protected by the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention). The Department recognises that badgers and bTB can be a controversial subject and agrees that any intervention in the wildlife population must be proportionate and humane and must consider the welfare of both badgers and cattle. In order that all aspects of the disease are tackled, intervention would involve a combined approach which would see actions put in place to address the infection in badgers alongside improved bTB control measures for cattle. The TBSPG's overall objectives are to eradicate bTB in cattle and contribute to improved health of the badger population. The Department is supportive of those aims.
- 122 The Department encourages farmers to adopt biosecurity measures to mitigate the spread of infection from badgers. Recommended measures include the use of appropriate fencing to keep cattle away from badger setts and latrines. The Department advises that fence posts should be placed in such a way as to minimise the risk of disturbance to the integrity of badger tunnels. This fencing, however, should not in any way restrict badger movement to or from setts, as this would be an offence under the Wildlife (Northern Ireland) Order 1985. The Department also recommends securing feed storage and cattle houses to prevent badgers accessing them and raising feed and water troughs to hinder badgers from using them. The Department believes these measures are prudent, and the Department will continue to encourage farmers to use these practices, wherever appropriate.
- 123 However, bTB levels in Northern Ireland are continuing to rise. There is evidence from the badger RTA Survey that badgers in Northern Ireland are infected with bTB. The Department recognises that more action is needed to effectively reduce bTB infection levels in badgers.

- 124 The scientific experts within the TBSPG considered a range of evidence on the effectiveness of implementing a stand-alone badger vaccination intervention. They concluded that, at present, vaccination alone would not achieve the desired effect within a reasonable time period given the current levels of infection present in badgers in Northern Ireland. The TBSPG, however, considered that there could be merit in applying vaccination following a period of badger removal to protect the new population in the area. In the longer-term, the TBSPG recommended that, once bTB levels have fallen, vaccination would be more effectively deployed, either in combination with a strategic removal of badgers in highly infected areas or as a stand-alone intervention, depending on the circumstances. The TBSPG also believes that an oral bait vaccine for badgers, once available, would be an important tool in tackling bTB infection.
- 125 The Department shares the TBSPG's aspiration that vaccination would be the preferred method of controlling bTB transmission in badgers, in the longer-term. The development of an effective oral bait vaccine could be an important aspect of such a strategy. However, it is unlikely that a licensed oral bait vaccine for field use will be a realistic prospect in the short to medium-term. Badger vaccination is currently administered by injection of captured badgers, although this is costly and resource-intensive. The Department recognises that vaccination is relatively ineffectual in populations with a high level of infection and, as such, the Department must consider how best to tackle bTB in badgers (initially in bTB high incidence areas) in the short to medium-term.

Options for a Short to Medium-Term Badger Intervention Policy

- 126 The Department has considered five options for a short to medium-term Badger Intervention Policy in areas of high bTB levels in cattle:
- Do Nothing;
 - Vaccination;
 - Culling;
 - “Test and Vaccinate or Remove” (TVR); and
 - A combined approach of two or more of the above interventions (broadly in line with the TBSPG Proposal);
- 127 The Department's preferred option, subject to views received in this consultation, is to introduce a combined approach in line with the TBSPG proposals of badger culling and vaccination and/or TVR. As set out in the subsequent section, the Department believes that this proposal is a balanced approach which should achieve a reduction in the level of infection within badgers in the area, while

minimising any potential adverse perturbation effects. Each of the other options which have been scoped out and considered as part of this consultation are set out in greater detail in Annex C.

- 128 It is important to note that this section of the consultation is seeking views on a badger intervention policy at a strategic level. A subsequent and more detailed consultation will take place, if appropriate, once detailed proposals have been developed by the Department, including views on any proposed legislation changes related to badger intervention.

Consideration of TBSPG Proposal - “Cull with TVR and follow up vaccination”

- 129 The TBSPG proposed a policy which would include the proactive culling of badgers in areas of high levels of bTB in cattle, which would be known as the central or ‘core zone’. In order to mitigate the risks associated with any perturbation effect, the vaccination of badgers, combined with the culling of test positive badgers would be carried out in a surrounding area or ‘buffer zone’ (i.e. a TVR approach). The TBSPG recommended that this approach should be carried out in areas of at least 100 sq km and should be repeated for a period of at least four years. The Group also recommend that follow-up vaccination should be considered for a further period of approximately three years in the core removal zone. A detailed description of its proposed approach can be found in Chapter 4 of the TBSPG’s Final Report.
- 130 The two members of the TBSPG with a scientific background, Dr McIlroy and Dr McMurray, carried out a scientific review of the evidence, with support from AFBI. Their analysis was peer reviewed by an independent academic, Professor Simon More, Professor of Veterinary Epidemiology and Risk Analysis within the University College Dublin (UCD) School of Veterinary Medicine. From its review, the TBSPG concluded that its proposal is the approach that will have greatest effect on bTB levels. This scientific review was published and can be found at: <https://www.daera-ni.gov.uk/publications/tbsp-g-bovine-tb-eradication-strategy-ni>
- 131 The Department has considered the TBSPG recommended approach (and the scientific evidence) and can see merit in its application. There are a variety of studies which indicate that proactive culling of badgers over large areas as an intervention method can, depending on how it is applied, be effective in reducing the bTB incidence in cattle. This evidence has been outlined at Annex C.
- 132 As outlined in Annex C, one of the concerns about culling as an intervention approach is uncertainty surrounding the so-called perturbation effect. While it is not known if that effect would be observed in Northern Ireland, the Department believes that it is prudent to consider mitigating action - be that through vaccination or through a TVR approach. Whilst it is acknowledged that DAERA

does not yet have evidence to establish if TVR would be an effective intervention in its own right, the ongoing TVR study has provided evidence that TVR methodologies can be practically applied in a field situation.

- 133 The Department has yet to undertake detailed analyses of the number of areas to be targeted in any wildlife intervention, and the combination of approaches most appropriate for each. It is, however, generally supportive of targeted wildlife interventions with culling in a central zone, and complementary perturbation mitigation actions (for example in buffer and/or core zones) where appropriate. The Department is also minded to further consider follow-up vaccination to protect the areas after the intervention has ceased, as appropriate.
- 134 The Department will, however, continue to monitor any new and emerging evidence from wildlife research and interventions elsewhere and, in particular, consider if and when vaccination of badgers might become an appropriate method of contributing to the reduction in the level of infection in cattle.
- 135 The Department is also minded to retain the flexibility to consider vaccination in circumstances where it is believed it could have a positive effect, such as protecting badgers from infection in low cattle bTB incidence areas.

Questions:

- W1** Do you agree with the Department's proposals for wildlife intervention - that is, culling in a central zone, and complementary actions to mitigate perturbation or reinfection as appropriate?
- W2** Do you agree with the TBSPG's and the Department's assessment that stand-alone vaccination is better utilised as part of a longer-term badger intervention strategy?
- W3** Do you agree that vaccination is better utilised in combination with badger removal to first reduce infection in badgers in the short-term?

Role of other species

- 136 The Department currently does not have evidence that other species (such as wild deer or camelids) play a significant role in the spread of bTB in cattle in Northern Ireland. The TBSPG, in its assessment, concluded that there is merit in keeping the role of other species under review as new evidence becomes available.
- 137 The Department is supportive of this recommendation. It recognises that wild deer and camelids (e.g. alpacas and llamas) are known to be sources of infection in parts of Ireland and the United Kingdom. It is important to monitor and review all new and emerging risks if all sources of the disease are to be fully tackled. The Department is minded, therefore, to undertake further research as resources allow, to get specific information on the risks other species could play in the transmission

of bTB to cattle in a Northern Ireland context. The TBEP, as an independent advisory group, may also recommend further research or policy proposals for the Department to consider.

Question:

W4 Do you agree that the role that other species might play in the spread of bTB to cattle should be kept under review and that further research should be carried out if resources allow?

Wildlife Research

- 138 The two main areas of wildlife research that the Department is currently conducting are the TVR wildlife intervention research project and the badger RTA Survey. Over the years, the Department has also completed a series of other research projects involving badgers including the Badger to Cattle Proximity Study, the Badger Population Survey, the bTB Biosecurity Study and a series of literature reviews. The results of these studies are available on the DAERA website: <http://www.daera-ni.gov.uk/articles/introduction-bovine-tuberculosis-tb-research-and-development>
- 139 The TVR study is due to end in 2018, with results expected from 2019. The RTA Survey has been running on a Northern Ireland wide basis since 1998. The Department believes there is merit in continuing to collect data through the badger RTA survey, as it provides a useful snapshot of the levels and spread of bTB infection in badgers over time. It is also a cost-effective and non-invasive method of monitoring bTB in badgers at a national level. It is, however, important to note that there are weaknesses in wildlife surveys of this nature. Although the RTA survey currently samples some 300 badgers per year, the Department does not achieve uniform coverage across Northern Ireland, with the geographic spread of collections suggesting that the dataset is spatially biased, and hence not necessarily representative of the badger population more generally. The sample numbers, therefore, may not be sufficient to reflect changes in badger bTB prevalence on a local area basis.
- 140 The TBSPG recommended a series of enhancements to the RTA survey, including an increase in the number of samples in under-represented areas in order to provide a more consistent geographical coverage. The TBSPG also recommended that the number of badgers sampled is increased to approximately 500 and that improvements are made in post-mortem methodologies.
- 141 Subject to availability of funding, availability of samples and laboratory capacity, the Department is minded to broadly support the recommendations the TBSPG made in respect of the badger RTA Survey.

142 Looking ahead to future research, the Department believes it is important to continue to invest in research into wildlife, be that badgers, deer or any other species, where appropriate. The Department will continue to consider ways in which it can become involved in wildlife-related research to address any evidence gaps. It will continue to seek opportunities to collaborate with other countries and partners in new research, where appropriate, and continue to share knowledge with other regions. The Department ultimately sees badger vaccination (and in particular any development of a cost-effective oral bait vaccine) as an important component in a longer-term badger management strategy. In recognition of this, it will continue to closely monitor work to develop an oral bait vaccine and will seek collaboration with other regions, where appropriate.

Question:

W5 Do you agree that there is merit in continuing, expanding and enhancing the badger RTA Survey?

Preventing Disease - Herd Health Management

The Current Position

- 143 Poor herd health management increases the risk of disease, which impacts on farm health, productivity and costs, which ultimately leads to negative effects on farm profitability. It also increases the risk of disease spread to other neighbouring herds.
- 144 The AFBI bTB Biosecurity Study, which was carried out in 2010-2011, indicated that less than 10% of farmers took adequate biosecurity measures to prevent disease. Of the other 90%, almost 50% admitted that they did not take basic biosecurity measures, including making arrangements with neighbours to avoid grazing contiguous fields or maintaining a closed herd. The study noted that there was significant room for improvement. These aspects, if rectified, would greatly enhance on-farm biosecurity for the majority of farmers in Northern Ireland and, as a result, may reduce the overall risk of herds going down with bTB as well as protecting against the risk of other diseases.
- 145 The Department currently provides a range of information both through its website and also in a number of leaflets aimed at providing general advice and guidance to farmers on biosecurity.
- 146 Farmers have online access to bTB advice, and bTB breakdown farmers receive a printed copy of the Department's 'TB in your herd' booklet along with advice during the course of any breakdown. At the suggestion of PVPs, the Department developed and published a webinar in August 2015 to further assist the dissemination of targeted advice to PVPs and farmers regarding good preventative and biosecurity practices. Advice includes mitigation of risks relating to animal movements. See link below:
www.daera-ni.gov.uk/articles/tb-bioexclusion-webinar
- 147 Divisional Veterinary Office staff have been trained to give advice to farmers in relation to identifying where badgers may have direct or indirect contact with cattle and the practical steps that can be taken to reduce the risk.
- 148 Through CAFRE, the Department provides training and advice seminars on good herd health management. Specifically, CAFRE provides bTB herd health training to students as part of the animal health modules of all relevant courses.
- 149 In addition to this, the Department's information leaflet, 'TB Biosecurity measures which help protect your herd against TB' and its 'Wildlife Biosecurity' leaflet are also disseminated to all attendees at CAFRE-organised events at its Greenmount Campus.

- 150 The Rural Development Programme (RDP) includes measures which support effective biosecurity improvements. The Farm Family Key Skills element of the RDP has a role to play regarding knowledge transfer in respect of improving farm practice and herd health management.

The TBSPG View on Herd Health Management

- 151 In general terms the TBSPG recommendations sought to promote improved herd health management across all types of cattle holdings, slaughterhouses, cattle markets and agricultural shows, in order to reduce the risks associated with the spread of disease, and introduce actions and practices that will improve herd health.
- 152 From its engagements with industry representatives, private vets and farmers, the TBSPG reflected that the available information and education initiatives by DAERA were not fully effective in changing attitudes or leading to significant improvements in herd health management.
- 153 It was the view of the TBSPG that the farming industry and its representative organisations have a key role in accepting the challenge to improve herd health management. The Group believes that those representative bodies must support and encourage members to participate in seminars and training, engage with the advice of PVPs, proactively improve farm management biosecurity and adopt the use of herd health checklists.

DAERA Response to TBSPG View

Early implementation

- 154 The TBSPG Recommendation 5.2 called for the Department to develop a biosecurity self-assessment checklist for use by farmers in a format that is user-friendly. As a step in this direction, a TB Biosecurity Questionnaire is currently being introduced under the TB testing contract. The questionnaire will be completed, at one herd test per year, for every herd in NI by the farmer's PVP. The form, completion of which only takes a short time, is designed to start discussion and raise awareness of biosecurity at individual farm level. The questionnaire is for the benefit of the farmer and, to encourage accurate completion, DAERA will not receive a copy of the completed form.
- 155 TBSPG Recommendation 5.4 proposed that the TBEP and the Department should consider a system similar to statutory improvement notices for use where it is apparent that good herd health management practice is not being adopted voluntarily. The Department considers it important to work with the farming community and farming bodies to seek a change in attitudes towards good herd health and to improve biosecurity around the farm. The new governance structures

provide the opportunity to directly influence behaviour and practice. It is intended that this will be kept under review by the TBEP once it has been established.

- 156 Under Recommendation 5.8, the TBSPG proposed that the Department undertakes a review of existing farm fragmentation data to establish whether the practice of farm fragmentation (including conacre) adversely impacts on the control of disease following a bTB breakdown. Given the research-based nature of this recommendation, the Department considers it more appropriate to address it within the 'Research' section of the consultation.

Question:

- H1** Do you agree that Statutory Improvement Notices should be used where it is shown that good herd health management is not being applied and is creating a risk to other neighbouring herds despite advice being provided?

Encouraging Farmers to Improve Herd Health Management

TBSPG Recommendation 5.1

- 157 The TBSPG recommended that...

" .. herdkeepers should be proactively encouraged to improve herd health management and take responsibility for herd health management on individual holdings."

DAERA Consideration of TBSPG Recommendation 5.1

- 158 The Department fully endorses this recommendation and seeks to encourage farmers through the promotion of information on its website and the distribution of its leaflets. It is acknowledged that more can be done. In this regard, the role of PVPs and CAFRE, who are in regular contact with farmers and who provide advice, will be developed. The Department also has an important role in working with farming bodies to explore how both parties can work together. The new governance structures proposed at the section entitled, 'A New Approach to Management, Oversight and Partnership Working', will also assist in developing understanding and better practice. In particular the DRTs will actively involve local farmers and highlight best practice in herd health management to protect cattle within that area.

DAERA Proposal

- 159 The Department proposes to work with the TBEP, industry, PVPs and CAFRE to develop an integrated approach to encouraging improved herd health management on farms, cattle markets and agricultural shows.

Question:

- H2** Do you agree that herd-keepers should be proactively encouraged to improve herd health management and take responsibility for herd health management on individual holdings?

Informed Purchasing

TBSPG Recommendations 5.5 to 5.7

160 The TBSPG recommended...

“.. that the farming industry should lead in the adoption of an “informed purchasing” approach for farmers bringing in stock to their farms, i.e. only buying stock where the health status of the cattle is known.” [5.5]

“To promote information, openness and transparency .. livestock markets should be encouraged to display as much information as is practically and legally possible to better inform prospective purchasers to help them assess the risks involved in any purchase.” [5.6]

“.. awareness-raising actions on “informed purchasing” should be put in place as an integral part of an overall communications strategy.” [5.7]

DAERA Consideration of TBSPG Recommendations 5.5 to 5.7

- 161 The Department agrees that, for the protection of their herds, farmers should have as much information as possible when purchasing animals. It supports the TBSPG view that the farming industry should lead in the adoption of an “informed purchasing” approach for farmers buying stock.
- 162 The movement of cattle is a significant risk factor in disease spread. Currently the Department is working with Animal Health and Welfare Northern Ireland (AHWNI) in relation to Bovine Viral Diarrhoea (BVD) and how confirmation of BVD status might be made available at cattle markets. In the Department’s view, a similar approach should be adopted in relation to the bTB history at herd and animal level. There are data protection issues to be addressed, but the Department is keen to see the farming industry taking a lead to implement this recommendation.

DAERA Proposal

- 163 The Department proposes that it will support the farming industry as appropriate, including farmers and livestock markets, to adopt an ‘informed purchasing’

approach to bringing stock onto holdings. This includes support to promote information openness and transparency at livestock markets and increased awareness raising by the industry.

Question:

H3 Do you agree that the farming industry should lead in the adoption of an ‘informed purchasing’ approach for farmers bringing in stock to their farms?

Farm Fragmentation

TBSPG Recommendation 5.9

164 The TBSPG recommended that...

“ .. DAERA should introduce segregation notices to protect those herds that are at risk of disease spread from high risk groups within bTB breakdown herds.”

DAERA Consideration of TBSPG Recommendation 5.9

165 The Department believes there is value in this proposal. The use of segregation notices would provide a means to control the risk of spread of infection due to farm fragmentation, and animal movement within the herd. High-risk groups of cattle would be kept in specific fields or housed and, if necessary, prohibited from grazing on specified land parcels. A notice would be issued following a risk assessment by a veterinary officer, on a case-by-case basis. The key aim would be to protect herds within the locality of such land parcels.

166 The Department also considers the implementation of this recommendation to be particularly important given the conclusions and recommendations of the EU Food and Veterinary Office (FVO) following its UK audit in June 2015. The FVO concluded that the level of unregulated movements of cattle within fragmented herds in which the presence of bTB has been confirmed is likely to be contributing to:

- An increase in the levels of environmental infection and the probability of transmitting bTB to wildlife;
- Exposure of cattle to the risk of bTB infection; and
- Exposing susceptible animals in infected herds to bTB, which can further increase the probability of recurrent breakdowns.

167 The FVO recommended the introduction of effective measures to manage the risks of transmission of bTB between cattle and from cattle to wildlife that are associated with movements of animals between land fragments in herds where the presence of bTB has been disclosed.

DAERA Proposal

168 The Department proposes to work with the farming industry to develop and introduce segregation notices to protect those herds that are at risk of disease spread from high risk groups within bTB breakdown herds.

Question:

H4 Do you agree that segregation notices should be introduced to protect those herds that are at risk of disease spread from high-risk groups within bTB breakdown herds?

TBSPG Recommendation 5.10

169 The TBSPG recommended that...

“ .. the TBEP should keep under review the potential benefits of the use of herd classification and purchasing based on herd bTB history as operated, for example, in New Zealand.”

DAERA Consideration of TBSPG Recommendation 5.10

170 Currently, the Department does not believe that it is feasible to introduce a classification system given the high levels of bTB within Northern Ireland and the impact that herd classification might have on trade. However, the Department sees this measure as being of positive value and a natural progression of the overall Strategy once bTB levels have been reduced to a level that would make introduction of a herd classification system feasible.

DAERA Proposal

171 The Department proposes to keep under review the potential benefits of herd classification and purchasing based on herd bTB history.

Question:

H5 Do you agree with the Department’s assessment that, given the high levels of bTB within Northern Ireland, it is not currently feasible to introduce herd classification and purchasing based on herd bTB history?

Genetic Improvement

TBSPG Recommendation 5.11

172 The TBSPG recommended that...

“ .. industry leaders should actively encourage farmers to use the “TB Advantage” genetic index.”

DAERA Consideration of TBSPG Recommendation 5.11

173 A recent paper looking at the pros and cons of genetic selection concluded that:

“Results demonstrated the feasibility of a national genetic evaluation for bTB resistance. Selection for enhanced resistance will have a positive effect on profitability and no antagonistic effects on current breeding goal traits. Heritability estimates are lower than previously quoted but it still seems to be a win-win for all stakeholders (except those breeding bulls with susceptible traits).”

174 It is the Department’s view that the use of the “genetic index”² to be able to select semen from bulls that have a lower susceptibility to bTB, whilst still at an early stage of development, is starting to build momentum and credibility, and so would encourage uptake.

DAERA Proposal

175 The Department proposes that the industry should lead to encourage a move towards inclusion of bTB resistance as a desirable trait in the selection of breeding material, supported through CAFRE’s education and technology transfer programmes.

Question:

H6 Do you agree with the Department’s assessment that industry, with support, should proactively encourage farmers to select bTB resistance in the selection of breeding material?

² <https://dairy.ahdb.org.uk/technical-information/breeding-genetics/tb-advantage/#.WeR4hviSxaQ>

Transport Hygiene

TBSPG Recommendation 5.12

176 The TBSPG recommended that...

“ .. farmers thoroughly clean and disinfect vehicles and equipment after transportation of farm animals.”

DAERA Consideration of TBSPG Recommendation 5.12

177 The *M. bovis* organism can remain viable for extended periods of time in contaminated ground or in faeces. Therefore, the Department considers this to be a sensible recommendation and further suggests that similar conditions should apply to shared equipment and contractors' equipment, particularly slurry spreaders, as evidenced by the bTB Biosecurity Study.

178 The Department is of the view that the industry should take a lead in this and introduce a code of practice to ensure compliance with European Council Regulation No 1/2005 which states that transporters, (those that move animals including farmers and hauliers), must use transport that is:

“cleaned and disinfected immediately after every transport of animals or of any product which could affect animal health, and if necessary before any new loading of animals, using disinfectants officially authorised by the competent authority”.

179 A transporter must keep a register of the date and place of disinfection for a minimum of three years.

DAERA Proposal

180 The Department wishes to seek the views of stakeholders on the role of industry in ensuring compliance with the legislative requirement to clean and disinfect vehicles. The Department would wish to see full compliance, especially in the case where vehicles make regular or return visits to markets. They should be properly cleaned and disinfected after each use to prevent disease spread.

Question:

H7 Do you agree that industry should have a lead role to play ensuring that the legislative requirement, to clean and disinfect vehicles each time they are used to transport animals, is met?

Finance and Funding

Current position

- 181 The annual cost of the bTB programme to taxpayers is very significant. In 2016-2017, the cost of the programme was some £35.5 million. This figure includes almost £18.4 million paid to herd-keepers in direct compensation for animals compulsorily removed as part of ongoing bTB controls. For the financial year 2017-2018, it is estimated that the total compensation bill could be in excess of £24 million, pushing the total programme costs to approximately £40 million.
- 182 At present, public funding covers all costs relating to the bTB programme and compensation.³ Compensation for reactors⁴ and in-contact animals⁵ is currently paid at 100% of the market value of the animal, as determined by an on-farm valuation of the animals.⁶
- 183 It is acknowledged that, whilst compensation is paid at 100% of an animal's pre-disease value, this does not cover all of the additional costs incurred on farms due to the testing regime, the subsequent removal of animals from the herd or movement restrictions as a result of herd breakdowns.
- 184 The significant spending on the bTB programme, which has been increasing in line with increasing herd incidence, comes at a time of ongoing public spending restraint. Given that further cuts to Departmental budgets are expected over the coming years, it is essential that action is taken to move forward with the eradication of the disease, not only from a herd health perspective but also to reduce the ever increasing costs to both the taxpayer and the individual farmer.

TBSPG View

- 185 The TBSPG employed independent economic consultants to carry out a cost/benefit analysis of the full package of their interrelated recommendations. This analysis showed that the eradication of the disease would bring substantial financial savings for taxpayers and the farming community, compared to the status quo situation remaining for the next 40 years.
- 186 The cost/benefit analysis clearly illustrated that, while implementing the Strategy's recommendations would require significant additional investment (and funding) in the bTB programme, the investment would be worthwhile. Simply maintaining the status quo would result in an ongoing drain on public finances, and the benefits of eradication would not be achieved.

³ Compensation is paid under the Tuberculosis Control Order (Northern Ireland) 1999.

⁴ TB reactor: Animal that reacts positively to a bovine tuberculosis skin test. (Since 1 January 2010 any animal giving an inconclusive reaction to a second consecutive bovine tuberculosis test is classed as a reactor (previously a third test was permitted)).

⁵ TB in-contact: Another animal in a herd that has been in close contact with an infected animal.

⁶ Animals are valued at market value as if they were free of the disease.

- 187 For instance, initial estimates suggest additional investment of £244 million in the bTB programme would be required across a 40-year period, at 2016 prices, for full implementation of the TBSPG proposals. When added to ‘baseline’ ongoing programme costs, it is estimated that total programme costs to achieve disease eradication would be approximately £850 million over the next 40 years (at 2016 prices). However, continuing with the status quo programme for the next 40 years would cost a greater amount (estimated to be £1,055 million at 2016 prices), and would not deliver eradication. Therefore, while the TBSPG’s recommended measures result in increased programme costs in the short to medium-term, they are anticipated to lead to reduced disease incidence with associated reductions in compensation and testing activity over the medium to longer-term. Overall, initial estimates suggest that full implementation of the recommendations would lead to a saving of more than £200 million over 40 years (at 2016 prices).
- 188 In relation to the financing and funding of the programme, the TBSPG outlined the following objectives:
- to re-balance the cost of the disease between the public and private sectors, thereby encouraging a change of culture and attitude, and a shared commitment, to the control and eradication of bTB; and
 - to identify new sustainable arrangements which would allow Government to maximise and better deploy resources (to implement the additional measures outlined in the strategy as necessary for bTB eradication). In particular, it considered that a change to the compensation arrangements is required to incentivise farmers to take all possible actions to reduce the risk of bTB entering and spreading within their herd.
- 189 The TBSPG considered a range of options to address its financing and funding objectives including: introducing a levy; farmers paying for all or some bTB tests; and farmers paying directly for wildlife intervention. It concluded, however, that the most appropriate and effective method of delivering its objectives would be to amend the current compensation arrangements.

TBSPG Recommendations

TBSPG Recommendations 6.1

- 190 The TBSPG considered the level of compensation payments made in previous financial years and the profile of compensation paid for individual animals (pedigree and non-pedigree). It considered the number of farmers and animals that would be affected by a range of animal compensation cap levels, based on the 2015 compensation profile. The Group also recognised that farmers in Northern Ireland have invested in pedigree breeding to achieve high genetic merit for animals, and

such animals achieve higher market values. Following its analyses, the TBSPG recommended that...

“.. a cap in compensation levels should be introduced with a maximum of £1,500 for non-pedigree bovine animals and a 20% premium for pedigree bovine animals (to a maximum of £1,800) (with all valuations being independently determined by appointed valuers)”; and

“a herd keeper should be permitted to receive compensation up to a cap of £3,500 for one pedigree stock bull per year, with no carry-over from one year to the next.”

TBSPG Recommendations 6.2

191 The TBSPG recommended that...

“.. in the future, the TBEP should consider a reduction in the percentage of compensation paid.”

192 The TBSPG outlined that a percentage reduction in the compensation rate would further incentivise farmers to reduce all possible risks of bTB entering or spreading in their herd, and also release funds which could be bid for by DAERA, to be reinvested back into the eradication programme.

193 The TBSPG recommended that the percentage of compensation paid should be reduced to a level of 75% of market value,⁷ in addition to the introduction of a cap on the amount of compensation paid for individual animals. As regards timing, the TBSPG proposed that the cap on compensation for individual animals be implemented immediately, and later DAERA, along with the TBEP, should take into account the disease picture and other circumstances when seeking to introduce the reduction in the compensation rate paid. The TBSPG stated that it would expect DAERA to use any savings accrued through the cap and percentage reduction in compensation payments to further enhance the bTB eradication programme.

194 The TBSPG considered that the introduction of tiered caps and percentage reduction in compensation rates would:

- contribute to a cultural and attitudinal change by encouraging a shared financial responsibility; and

⁷ bTB compensation rates were previously set at 75% of market value.

- be cognisant of both the European Commission 2015 FVO Report⁸ and the 2009 Northern Ireland Assembly Public Accounts Committee⁹ (PAC) Report. These reports evaluated the Northern Ireland bTB programme and both were critical of 100% compensation payments and the existing burden on the taxpayer. Both reports also stated that the problem of the small minority of farmers who seek to abuse the compensation system needed to be addressed.

DAERA Consideration of TBSPG Recommendations 6.1 and 6.2

- 195 The Department has considered the TBSPG recommendations on finance and funding, being particularly mindful that there is a lack of an upper limit on current compensation payments, the reality of further budget cuts, the increasing long-term costs of the current bTB programme and the concerns raised within the FVO and PAC reports about the current compensation regime.
- 196 The Department agrees with the TBSPG that changing the current compensation arrangements provides an opportunity to strike a more appropriate balance between ensuring reasonable compensation for farmers and protecting the interests of taxpayers. It also encourages herd-keepers to take all reasonable steps to prevent disease in their herds.
- 197 The savings realised by reducing the total compensation cost would release money back into the public purse and provide the opportunity for the Department to seek additional resources to support other measures proposed by the TBSPG that are necessary to achieve the goal of eradication of bTB from Northern Ireland.

Cap on Compensation Payments

- 198 In Northern Ireland, compensation is currently paid to herd-keepers at 100% of an animal's full market value, with no fixed upper limit. This is not the case in England and Wales. In Wales, a cap on compensation is set at £5,000. In England, there is no overall published cap on compensation. However, compensation is effectively capped at the average sale price of a category of animal. To do this, use is made of statutory monthly table valuations which reflect the average sale prices over the last month (non-pedigree) or six months (pedigree) of bovine animals in 51 different categories. Animals are categorised based on their age, gender, type (dairy or beef) and status (pedigree/non-pedigree). The amounts of compensation paid to farmers in England can also be reduced in cases where bTB testing is overdue. The Department for Environment, Food and Rural Affairs (DEFRA) also recently

⁸ European Commission Directorate-General for Health and Food Safety, Directorate F – Food And Veterinary Office (2015) Final Report Of An Audit Carried Out In The United Kingdom From 01 June 2015 to 05 June 2015 In Order To Evaluate The Effectiveness Of And Progress Made By The Programmes Co-Financed By The European Union To Eradicate Bovine Tuberculosis In Northern Ireland [Online], Brussels, European Commission.

⁹ Northern Ireland Assembly Public Accounts Committee (2009) Report on the Control of Bovine Tuberculosis in Northern Ireland, Together with the Minutes of Proceedings of the committee relating to the report and the minutes of evidence [online], Belfast, Northern Ireland Assembly. Available at: http://archive.niassembly.gov.uk/public/2007mandate/reports/2008/report_40-08-09.htm

consulted on its proposal to widen the provisions for a reduction in compensation, and on introducing a cap of £5,000 on any individual animals valued outside the table valuations.

- 199 The Scottish Government has recently concluded a public consultation on introducing a cap on compensation payments of £5,000 per individual animal.
- 200 In the Republic of Ireland, compensation is paid at market value, but with a cap on payments of €3,000 for an individual bovine animal, €4,000 for one stock bull and €5,000 for one pedigree bull per breakdown per episode.
- 201 The Department assessed the impact of different compensation cap levels (using data on compensation payments in 2016-2017), as outlined in the tables in Annex D. In 2016-2017, at a cap of £2,000 on non-pedigree animals, 33 farmers would have been impacted, representing 0.1% of total non-pedigree farmers. At a cap of £5,000 on both pedigree and non-pedigree animals (same cap as Wales, and that proposed by England and Scotland), only 23 farmers would have been impacted, representing 0.1% of total farmers in Northern Ireland. Such caps are not likely to drive any meaningful change in behaviour or result in cost savings.
- 202 Overall, the disease situation and incidence levels in Northern Ireland are different to the rest of the UK and the Republic of Ireland and the ongoing programme costs could be considered unsustainable in the longer-term. The Department agrees with the TBSPG that changes to the compensation system are a necessary part of the holistic approach to the eradication of bTB. Therefore the Department proposes the introduction of a cap on the level of compensation payable on individual animals. It proposes cap levels of £1,500 for each non-pedigree animal, £1,800 for each pedigree animal, and £3,500 for one pedigree stock bull per herd-keeper per year, with no carryover from one year to the next. The Department believes the introduction of this new measure will ensure that the ongoing programme to eradicate bTB is financially viable, sustainable and equitable to the taxpayer and farmers alike.

Percentage Reduction in Compensation Payments

- 203 As referenced earlier, the Northern Ireland PAC 2009 Report and the European Commission FVO audit of the bTB programme in 2015 both queried whether a 100% compensation rate provides sufficient incentive for herd-keepers to prevent infection, and if the level of payment is consistent with a drive for bTB eradication.
- 204 The TBSPG evaluated such issues, and recommended consideration of the introduction of a percentage reduction in the compensation rate to a level of 75% of market value, subject to the compensation cap. The TBSPG believes that this would further incentivise farmers to reduce all possible risks to their herd and would release further public funds to be reinvested back into the programme of eradication.

- 205 Whilst the TBSPG did not recommend the immediate introduction of a percentage reduction in compensation, the Department is proposing that it is introduced with the cap but on a phased basis. This would result in savings to Government, strengthening bids for resources for other significant aspects of the bTB eradication strategy proposed by the TBSPG.
- 206 Therefore, the Department proposes to introduce a reduction of 10% to the compensation rate (currently set at 100%) in year one, and a further 15% reduction in year two. This means that compensation would reduce to 90% of market value in year one, and 75% of market value in year two. A 75% compensation rate would align the bTB programme with the compensation regimes for other diseases, such as Brucellosis. As the compensation cap and reduction in the compensation rate are proposed to be introduced simultaneously for each compulsorily removed animal the Department envisages paying **the lesser of:**
- the compensation value as derived by applying the compensation rate to each animal's market value; and
 - the compensation cap for that category of animal.
- 207 Both policy changes will require amendment through secondary legislation to the Tuberculosis Control Order (Northern Ireland) 1999 (as amended).
- 208 Annex D details how the changes would financially impact on farmers.
- 209 The introduction of this new regime would be subject to further consideration. A second, more detailed, consultation with relevant impact assessments would follow, which would outline the legislative changes required for introduction of a new regime.

Questions:

- F1** Do you agree to the principle that there should be a reduction in the compensation rate from the current level of 100% of an animal's market value?
- F2** Do you agree that the compensation rate paid should be set at 90% of market value in year one, reducing to 75% of market value in year two, subject to the compensation cap also being applied?
- F3** Do you agree to the principle that there should be a cap on the level of compensation paid per animal?
- F4** Do you agree that, if a compensation cap is introduced, it should be set at £1,500 for a non-pedigree animal, £1,800 for a pedigree animal, and £3,500 for the removal of one pedigree stock bull per herd-keeper each year?

210 The Department also considered two further options for changing the current finance and funding policy:

- Introduction of a bTB levy; and
- Introducing payments for herd tests.

Introduction of a bTB Levy

211 The Department considered introducing a levy as a means of contributing to the cost of the bTB programme as an alternative to changing the current compensation regime.

212 There are currently two levies in place in the agriculture industry in Northern Ireland:

- The Dairy Council for Northern Ireland has a voluntary levy from its members in place on milk produced and milk processed. The levy is used to fund projects relating to the local dairy industry;
- Since 2003, the Livestock and Meat Commission for Northern Ireland (LMC) has collected statutory levies from beef and sheep producers and slaughterers in Northern Ireland to provide a range of services to the red meat industry.

213 In the Republic of Ireland, farmers and industry have been subject to levies collected as a result of the Bovine Disease Levies Acts of 1979 and 1996. Levies are collected on slaughtered animals, exported animals and on milk production. Levies are charged to farmers on the following basis: in relation to dairy cattle and milk production, the amount of 0.6 cent per litre of milk processed is charged, whilst for animals slaughtered or exported live, the amount is €1.27 per animal.

214 Predominantly focused on the agriculture industry in England and Wales, the Agriculture and Horticulture Development Board (AHDB) raises specific levies relating to each sector in the agricultural industry. This is a statutory obligation as a result of the Agriculture and Horticulture Development Board Order 2008.

DAERA Consideration of the option of introducing a bTB levy

215 While a levy similar to that established in the Republic of Ireland could potentially provide an important source of revenue to help fund the new TBSPG measures proposed, the Department does not believe that a levy would bring about the desired culture change and shared ownership of the disease that would come from an adjustment in compensation arrangements. Therefore, at this time, the Department is not proposing to introduce a bTB levy but intends to keep the matter under review in consultation with the TBEP. Views therefore, on the introduction of a levy, would be welcomed.

Question:

- F5** Do you agree with the Department's approach to keep the introduction of a specific levy for the bTB programme under review but not to introduce one at this time?

Introducing Payment for Herd Tests

- 216 The cost of cattle testing of the bTb Eradication Programme is significant and cost approximately £9.1million in 2016. The cost related to the PVP testing contract, Veterinary Service Testing costs and expenditure on tuberculin.
- 217 As previously discussed, the vast majority of the bTB testing programme's costs are met by Government, and are funded by taxpayers. There is no charge for routine surveillance bTB testing applied to farmers.
- 218 In England, Scotland and Wales the costs associated with the payment of routine surveillance testing is met by Government.
- 219 In the Republic of Ireland farmers pay their PVPs for one herd test per year (with the cost of additional risk and restricted herd testing being borne by the taxpayer). Additionally, they contribute a levy towards disease eradication costs.
- 220 In New Zealand, which has an extensive bTB eradication programme in place and which the TBSPG looked at while formulating its Strategy, the industry contributes to funding the overall bTB programme covering the cost of bTB testing.
- 221 The Department therefore is proposing to introduce a requirement that each farmer should pay for one herd test per year, similar to the policy in operation in the Republic of Ireland, where they have successfully driven down their rates of bTB in recent years. This change to the programme will help to ensure a more equitable way of encouraging contribution from the industry and sense of cost sharing between both Government and industry for the bTB programme. The cost to the Department for a PVP to carry out a bTB test in 2016/17 is detailed below. The average size of a herd test in 2016/17 was 82 animals. The costs below do also include a number of other additional services provided by PVPs through the PVP TB testing contract:

First Animal	£54.50
For each animal tested between 2 and 100 animals	£2.50 each
For each animal tested from 101 animals	£2.28 each

This would require an amendment to the Tuberculosis (Examination and Testing) Scheme Order (Northern Ireland) 1999 (as amended). The introduction of this proposal would be subject to further consideration. A second, more detailed,

consultation with relevant impact assessments would follow, which would outline the legislative changes required.

Question:

F6 Do you agree that each herd-keeper should pay for one herd test per year?

Summary of DAERA position

222 The Department wishes to see a shift in culture from a position where bTB is accepted as a feature of farming life to one where the focus is on a concerted collective effort to eradicate the disease. It follows, as outlined in the TBSPG Strategy, that the responsibility and costs associated with the eradication of this disease need to be shared between public and private stakeholders. The changes proposed by the Department provide a financially viable and sustainable solution to funding the programme required for the eradication of bTB.

Research

The Current Position

- 223 The Department's agricultural policy is based on the key principle of robust evidence. There is an overall strategy for research, however, the detailed evidence and innovation activities are co-ordinated through four Programme Management Boards (PMBs), which align broadly to the Department's strategic goals.
- 224 The PMBs annually prioritise the Department's evidence and innovation needs, consult stakeholders and make recommendations on the content of a work programme for their areas of responsibility. An overarching Evidence and Innovation Priorities Group (EIPG) then makes final decisions on the Department's directed Research Work Programme.
- 225 There is still much that is not known about how bTB spreads, how it can be diagnosed more effectively, and what can be done to prevent its spread between cattle and between wildlife and cattle. Due to the complex nature of the disease, research into bTB can, at times, be inconclusive in its findings. It can also be very expensive to undertake, and care needs to be taken when commissioning and prioritising this research. However, research in this area remains a priority for the Department given the significance of the disease.

TBSPG View on Research

- 226 The TBSPG commented in its report that the overall approach to bTB must be science-led and must utilise all available evidence to eradicate bTB in the cattle population in Northern Ireland. The TBSPG also recommended that a mechanism is put in place to allow stakeholders to influence the commissioning of relevant research. The TBSPG noted and welcomed the additional investment DAERA has made in research, however, it also noted that evidence and innovation gaps remain.
- 227 The TBSPG recommended that DAERA must continue to invest in bTB as a research priority. It stated that scientific developments, through research, should be communicated by DAERA to all relevant stakeholders, including the science community.
- 228 The TBSPG stated that the TBEP should be involved in all Department-led processes for identifying evidence gaps and innovation needs to be addressed through research and development. The TBSPG stated this should also include being involved in the commissioning process.
- 229 The TBSPG made a number of recommendations under the Herd Health Management section of its report. Recommendation 5.8 related to a review of farm

fragmentation data to help determine what impact this has on disease. Given the research based nature of this recommendation, the Department considers it more appropriate to address Recommendation 5.8 within this section of the consultation.

TBSPG Recommendations on Research

TBSPG Recommendation 7.1

230 The TBSPG recommended that...

“.. DAERA continue to invest in bTB research to facilitate future policy development and new innovations to help tackle the disease.”

DAERA Consideration of TBSPG Recommendation 7.1

231 The Department proposes to accept this recommendation. New Evidence and Innovation proposals are currently considered on an annual basis.

232 The current programme of bTB and wildlife research and studies will help improve the detection and control of bTB and guide the eradication strategy in the future. The Department needs to ensure that its research effort is targeted to get maximum value for such public expenditure. It is pursuing bTB and wildlife research to identify new and better ways of preventing transmission between cattle and between wildlife and cattle. However, it is important to perform research that complements research undertaken in other parts of the United Kingdom and the Republic of Ireland. It is equally important to extract the relevant findings from that work and to collaborate where appropriate.

TBSPG Recommendation 7.2

233 The TBSPG recommended that...

“.. the TBEP is recognised as a significant stakeholder in the research agenda and is able to input into the identification of gaps and the research commissioning process.”

DAERA Consideration of TBSPG Recommendation 7.2

234 The Department proposes to accept the recommendation that the TBEP should be recognised as a significant stakeholder in informing the research agenda. The Department is currently reviewing the research commissioning process, and a new approach is in development. However, the Department is keen to facilitate the TBEP's inclusion in the research commissioning process to provide input into identifying bTB related evidence gaps.

TBSPG Recommendation 7.3

235 The TBSPG recommended that...

“ .. a representative(s) from TBEP sit on the steering group which will oversee the proposed new programme of bTB research. This would ensure that the TBEP has access to emerging research findings to ensure that future strategic reviews were based on best and most up to date evidence and would have a role in the dissemination of relevant research to stakeholders.”

DAERA Consideration of TBSPG Recommendation 7.3

236 The Department proposes to accept the recommendation that the TBEP has access to emerging research findings, including a role in the dissemination of relevant research to stakeholders. It is noted, however, that there may be instances when it is scientifically or commercially inappropriate to share emerging findings outside the Department and project partners.

237 The Department regularly shares finalised research papers with stakeholders and commits to making research papers available to the TBEP and any other interested stakeholders. The Department is keen to maintain communications with stakeholders as well as to receive relevant input from them.

TBSPG Recommendation 5.8

238 The TBSPG recommended that...

“ DAERA undertakes a review of existing farm fragmentation data to establish whether the practice of farm fragmentation (including conacre) adversely impacts on the control of disease following a bTB breakdown.”

DAERA Consideration of TBSPG Recommendation 5.8

239 The Department proposes to accept the recommendation. It agrees that there is benefit in commissioning research upon which any future policy direction can be proposed. It is important to have scientific evidence of the extent of the impact of farm fragmentation on disease spread to enable the design of a proportionate response to the issue. There is currently no such evidence upon which to justify potential policy.

Early Actions

240 The Department has commissioned AFBI to complete research into the gamma interferon test. Other bTB research projects include the following:

- Investigating bTB transmission dynamics using genome epidemiology;
- An evaluation of the role of multiple reactor and chronic breakdown herds in the epidemiology of bovine tuberculosis in Northern Ireland;
- The role of endemic diseases and other factors in the occurrence of bTB;
- A study of Resuscitation Promotion Factors (Rpf) - enhanced culture of *Mycobacterium bovis* from clinical tissue;
- Optimisation and enhancement of the test format for the interferon gamma assay;
- To improve reliability of genomic prediction for bTB resistance in cattle;
- bTB molecular epidemiology - analysis of cattle movements and optimisation of epidemiological investigations; and
- TVR wildlife intervention research project.

241 The Department looks forward to these being completed in the coming years.

Questions:

- R1** Do you agree that the TBEP should be recognised as a significant stakeholder in the research agenda and should be able to input into the identification of gaps and the research commissioning process?
- R2** Do you agree that a representative(s) from the TBEP should sit on the steering group which will oversee the proposed new programme of bTB research?

Part 4 Consultation Summary

No.	TBSPG ref. no.	TBSPG recommendation	DAERA proposal	Consultation ref. no.
1	1.1	A new governance structure should be put in place, with the establishment of bodies at a regional, sub regional and local level with a focus on disease eradication and an ability to influence policy and disease control.	The Department proposes new partnership structures (as outlined in Figure 1) which will give stakeholders a greater voice in policy development, programme delivery and input to local decisions relating to bTB eradication.	59
2	3.2.2	The use of the gamma interferon (IFNG) test is expanded to remove infected animals as quickly as possible.	The Department proposes that, where it is considered necessary, gamma interferon testing should be mandatory. This would remove the option for herd-keepers to retain any animals which have tested positive to the gamma interferon test.	82
3	3.2.3	There should be a renewed approach to dealing with chronic herds. This should involve using relevant measures and processes, already identified, in a package targeted at resolving or minimising their impact.	The Department proposes to tailor its approach to dealing with chronic herds by prioritising herds based on potential impact and available resources.	91
4	3.2.4	DAERA should move to prevent restocking of all breakdown herds until after the first herd retest and subsequent removal of any reactors.	The Department proposes to introduce measures to prevent restocking of breakdown herds through a phased approach in order to minimise potential hardship for herd-keepers whilst moving towards compliance with EU legislation.	95

No.	TBSPG ref. no.	TBSPG recommendation	DAERA proposal	Consultation ref. no.
5	3.2.6	DAERA considers permitting limited moves from bTB breakdown herds to approved rearing/finishing herds which are 100% housed and meet strict biosecurity conditions.	The Department proposes to work to put in place mechanisms, in compliance with EU legislation, which will enable limited moves from bTB breakdown herds to approved rearing/finishing herds which are 100% housed and which meet defined, strict biosecurity conditions.	100
6	3.3.1	Private Veterinary Practitioners (PVPs) should apply DNA tags to any animals that they detect with reactor readings when they are reading the test results.	The Department proposes to bring forward amendments to relevant secondary legislation to enable PVPs to apply DNA tags at disclosure.	104
7	3.3.2	DAERA develops a preliminary field trial and associated research to help establish counter measures to prevent occurrences of cattle being presented as reactors which have not given a natural response to the injection of tuberculin.	The Department will carry out quality assurance checks on bTB reactors. A pilot started in November 2017. The Department will consider the findings of the pilot and consider further policy changes as appropriate, which could include introducing a policy on bTB reactor quality assurance and further actions where fraud is suspected.	109
8	3.4.2	The use of molecular techniques should be expanded as we seek to eliminate bTB from cattle.	The Department proposes to expand the use of molecular techniques to support efforts to eradicate bTB from cattle in Northern Ireland.	114

No.	TBSPG ref. no.	TBSPG recommendation	DAERA proposal	Consultation ref. no.
9	4.1	In relation to bTB transmission, we recommend that the TBEP should keep the position in relation to wild deer and camelids under review.	The Department recognises that wild deer and camelids are known to be sources of infection. The Department proposes that it should undertake further research as resources allow.	136
10	4.2.1	We recommend that badger vaccination should form part of a longer-term sustainable badger intervention strategy in support of an effective disease control strategy.	The Department shares the TBSPG's aspiration that vaccination would be the preferred method of controlling TB transmission in badgers.	125
11	4.2.2	Once an effective oral bait vaccine for badgers has been developed and is available, the TBEP should consider how it could most effectively be deployed.	The Department acknowledges that the development of an effective oral bait vaccine could be an important aspect of an eradication strategy.	125
12	4.3	A badger control policy should be implemented to reduce the overall level of infection in the badger population. This intervention should include the culling of badgers in areas of high levels of bTB in cattle and, in order to mitigate the risks associated with the perturbation effect, the vaccination of badgers, combined with culling of test positive badgers in a surrounding area.	The Department's preferred option is to introduce a combined approach of two or more interventions broadly in line with TBSPG's proposals.	127

No.	TBSPG ref. no.	TBSPG recommendation	DAERA proposal	Consultation ref. no.
13	4.4	The RTA Survey should be expanded to have uniform coverage throughout NI and the methodologies should be refined.	The Department broadly supports the recommendations TBSPG made in respect of the badger RTA Survey, subject to resources.	141
14	5.1	Herd-keepers should be proactively encouraged to improve herd health management and take responsibility for herd health management on individual holdings.	The Department proposes to work with the TBEP, industry, PVPs and CAFRE to develop an integrated approach to encouraging improved herd health management on farms, at marts and agricultural shows.	159
15	5.5	The farming industry should lead in the adoption of an “informed purchasing” approach for farmers bringing in stock to their farms.	The Department proposes that it will support the farming industry as appropriate, including farmers and livestock markets, to adopt an informed purchasing approach to bringing stock onto holdings.	163
16	5.6	Livestock markets should be encouraged to display as much information as is practically and legally possible to better inform prospective purchasers to help them assess the risks involved in any purchase.	The Department believes there is benefit in farmers ensuring that they have as much information as possible when bringing animals into their herds. The Department proposes that the farming industry takes a lead, with the support of the Department, to implement this recommendation.	161

No.	TBSPG ref. no.	TBSPG recommendation	DAERA proposal	Consultation ref. no.
17	5.7	Informed purchasing should be put in place as an integral part of an overall communications strategy.	The Department proposes that it will support the industry to promote information openness and transparency at livestock markets and awareness raising by the industry.	163
18	5.9	DAERA should introduce segregation notices to protect those herds that are at risk of disease spread from high risk groups within bTB breakdown herds.	The Department proposes to work with the farming industry to develop and introduce segregation notices to protect those herds that are at risk of disease spread from high risk groups within bTB breakdown herds.	163
19	5.10	The TBEP should keep under review the potential benefits of the use of herd classification and purchasing based on herd bTB history as operated, for example, in New Zealand.	The Department proposes to keep under review, the potential benefits of herd classification and purchasing based on herd bTB history.	171
20	5.11	Industry leaders should actively encourage farmers to use the “TB Advantage” genetic index.	The Department proposes that it should support and focus the industry in a move towards inclusion of bTB resistance as a desirable trait in their selection of breeding material through CAFRE’s education and technology transfer programmes.	175

No.	TBSPG ref. no.	TBSPG recommendation	DAERA proposal	Consultation ref. no.
21	5.12	It is recommended that farmers thoroughly clean and disinfect vehicles and equipment after transportation of farm animals.	The Department proposes that the industry should take a lead to ensure that vehicles which make regular or return visits to markets should be properly cleaned and disinfected before and after use to prevent disease spread.	180
22	6.1	A cap in compensation levels should be introduced with a maximum of £1,500 for non-pedigree bovine animals; a 20% premium for pedigree bovine animals to a maximum of £1,800, and a cap of £3,500 for one pedigree stock bull per year, with no carry-over from one year to the next.	The Department proposes that there should be a cap on compensation of £1,500 for each non-pedigree animal and £1,800 for each pedigree animal. It also proposes compensation up to a cap of £3,500 for one pedigree stock bull per year, with no carry-over from one financial year to the next.	202
23	6.2	The TBEP should consider a reduction in the percentage of compensation paid.	The Department proposes to introduce a reduction of 10% of the compensation payment in year one, increasing to 25% of the compensation payment in year two. The reduction would be in conjunction with the introduction of caps on compensation paid.	206
24		No recommendation	The Department proposes to introduce a requirement that each farmer should pay for one herd test per year	221

No.	TBSPG ref. no.	TBSPG recommendation	DAERA proposal	Consultation ref. no.
25	7.1	DAERA continue to invest in bTB research to facilitate future policy development and new innovations to help tackle the disease.	The Department proposes to accept this recommendation. New evidence and Innovation proposals are currently considered by the Department on an annual basis.	231
26	7.2	TBSPG recommend that the TBEP is recognised as a significant stakeholder in the research agenda and is able to input into the identification of gaps and the research commissioning process.	The Department proposes to accept the recommendation that the TBEP has access to emerging research findings, including a role in the dissemination of relevant research to stakeholders.	234
27	7.3	A representative(s) from the TBEP sit on the steering group which will oversee the proposed new programme of bTB research.	The Department proposes that it will make research papers available to the TBEP and any other interested stakeholders. The Department is keen to maintain communications with stakeholders as well as to receive relevant input from them.	236
28	5.8	DAERA undertakes a review of existing farm fragmentation data to establish whether the practice of farm fragmentation (including conacre) adversely impacts on the control of disease following a bTB breakdown.	The Department proposes to accept this recommendation. There is benefit in commissioning research upon which any future proportionate policy direction can be proposed.	239

Annexes

Annex A - Representative Bodies on Stakeholder Forums

Annex B - Proposed Partnership Structures

Annex C - Consideration of potential badger intervention options

Annex D - Compensation Caps and Reductions

Annex E - Glossary of Terms



Annex A - Representative Bodies on Stakeholder Forums

bTB Stakeholder Working Group	
Association of Veterinary Surgeons Practising in Northern Ireland (AVSPNI)	NI Badger Group
Council for Nature Conservation and the Countryside (CNCC)	North of Ireland Veterinary Association (NIVA)
National Beef Association (NBA)	Ulster Farmers' Union (UFU)
National Trust	Ulster Wildlife Trust (UWT)
NI Agricultural Producers Association (NIAPA)	
Animal Health & Welfare Stakeholder Forum	
Agri-Food & Biosciences Institute (AFBI)	Northern Ireland Livestock Auctioneers Association (NILAA)
Animal Health & Welfare Northern Ireland (AHWNI)	Northern Ireland Meat Exporters Association (NIMEA)
Association of Veterinary Surgeons Practising in Northern Ireland (AVSPNI)	Northern Ireland Poultry Federation (NIPF)
Dairy UK	Northern Ireland Veterinary Association (NIVA)
Livestock and Meat Commission (LMC)	Poultry Association Northern Ireland (PANI)
National Beef Association (NI) (NBANI)	Soil Association
National Sheep Association (NSA)	Ulster Farmers' Union (UFU)
Northern Ireland Aberdeen Angus Club (NIAAC)	Ulster Pork and Bacon Forum (UPBF)
NI Agricultural Producers Association (NIAPA)	Ulster Society for the Prevention of Cruelty to Animals (USPCA)
Northern Ireland British Blue Club (NIBBC)	Veterinary Northern Ireland (VETNI)
Northern Ireland Holstein Friesian Breeders Club (NIHFBC)	

Annex B - Proposed bTB Partnership Structures

TBEP	
Membership (appointed through public process).	Independent Chair; Farmers (2); Nature Conservationist; PVP; Scientific Expert; Meat Processor.
Regularity of Meetings.	Minimum six per year.
Geographical Remit.	Northern Ireland.
Strategic Role.	<p>Work closely with DAERA to support the implementation of an agreed bTB Eradication Strategy for Northern Ireland, including participating in a formal review of the Programme at five-year intervals.</p> <p>Provide a high level collaborative interface between the key players.</p> <p>Provide advice and considered views on the development of goals to ensure that the direction of the programme towards eradication is established and maintained.</p> <p>Provide advice and considered views on targets for control, reduction and eradication of bTB.</p> <p>Have a monitoring role in relation to the delivery of the bTB Strategy and related targets.</p> <p>Work in partnership with DAERA and all key stakeholders on the development of a communication plan for the Strategy.</p> <p>Consider reports from the REPs and take action as appropriate.</p> <p>Consider scientific findings and facilitate wider dissemination of information and findings.</p>
Operational Role.	No direct operational role. Role is to review the effectiveness of the programme and provide strategic advice to the Department on policy and programme changes that might be worthy of consideration.
DAERA Membership.	CVO and AHWPD Director as ex officio members.
Chair.	Independent Chair to be recruited by public appointment process.
Other members.	To be recruited by public appointment process.

REP	
Membership (appointed through public process).	Independent Chair; Farmers (2); PVP; Nature Conservationist; Representative from CAFRE.
Regularity of Meetings.	Minimum six per year.
Geographical Remit.	Three regional bodies
Strategic Role.	<p>Specific focus on bTB eradication in their particular geographical region.</p> <p>Work collaboratively and in partnership with Government and stakeholder representatives to effect the eradication of bTB in their area.</p> <p>Provide feedback to the TBEP.</p> <p>Review reports from DRTs and recommend appropriate actions.</p>
Operational Role.	<p>Operational issues to be raised by REPs directly with bTB Programme Delivery Manager.</p> <p>Provide a forum where key players can collaborate on bTB eradication actions.</p>
DAERA Membership.	DVO as ex officio member plus other DAERA reps as circumstances require.
Chair.	Independent chair by public appointment process.
Other members.	Farmers (2), private veterinary practitioner, nature conservationist, CAFRE representative.

DRT	
Membership (self-nomination).	Convened by local Patch Veterinary Officer (VO) under the direction of the Veterinary Manager; flexible but will include local farmers; PVPs; and relevant DAERA staff. May, as required, include local field sports clubs, conservationists and landowners.
Regularity of Meetings.	Ad hoc - responsive to outbreak.
Geographical Remit.	Local outbreak focused.
Strategic Role.	Not a strategic body though some of the agreed actions may have longer-term strategic benefits for the area.
Operational Role.	<p>Bring affected farmers together to agree how disease control measures can be implemented.</p> <p>Consider disease risk factors and contact between farms.</p> <p>Organise communications and events to involve local farmers.</p> <p>Escalate issues and report to the REP as necessary.</p>
DAERA Membership.	Patch VO. Other DAERA reps as circumstance require.
Chair.	Local farmer agreed by REP in consultation with DVO.
Other members.	Local farmers, local veterinary practitioners, local nature conservationists, other relevant stakeholders (e.g. mart operators, hauliers, contractors, hunt groups).

Annex C - Consideration of potential badger intervention options

1. This annex outlines the following potential stand-alone badger intervention options. This looks at each option on a strategic level, rather than considering detailed proposals for each option on an area basis.

“Do Nothing”

2. This option would involve no direct intervention with the badger population and would therefore not form part of the holistic approach to eradicating the disease. To eradicate bTB in cattle, all potential sources of infection must be addressed.
3. While, DAERA would, in this instance, continue to encourage herd-keepers to take biosecurity measures to limit opportunities for disease spread, these measures, which are essentially good herd health management, will not on their own achieve the overall objective of addressing the bTB reservoir in badgers to help eradicate the disease from cattle herds and contribute to the health of the badger population. The Department, however, will continue to encourage such measures, even if a badger intervention policy should be introduced.

Vaccination

4. In the absence of an oral bait vaccine, any stand-alone vaccination intervention would have to be carried out using an injectable vaccine. Vaccines can be used to reduce the spread of disease in a population, and an injectable Bacillus Calmette-Guérin (BCG) vaccine for badgers has been licensed since 2010 (Badger BCG). However, vaccines are likely to have no clinical effect in animals that are already infected. Badger vaccination has been deployed in parts of England, Wales and the Republic of Ireland.
5. Dr Cecil McMurray and Dr George McIlroy supported by AFBI, reviewed a range of evidence in relation to badgers as part of their scientific appraisal of the TBSPG recommendations. This scientific appraisal was peer reviewed by Professor Simon More (University College Dublin). They looked specifically at the issue of vaccination and determined that it was reasonable to conclude that vaccination would not be effective in heavily infected populations but that there is merit in applying vaccination following a period of badger removal to reduce the density of badgers and the infection load in such areas. The TBSPG concluded that vaccination alone would not achieve the desired effect (in both badgers and cattle) within a reasonable timescale.
6. The Department has also considered the possibility of applying badger vaccination as a stand-alone intervention strategy. To date, no field studies have been carried out to demonstrate that vaccination of badgers has a beneficial impact on disease levels in cattle although the effects of badger vaccination have been modelled. Having examined the evidence in scientific literature, the Department considers

that, while vaccination could have a protective effect in badgers, a large scale intervention of repeated vaccination of badgers is unlikely to have a significant impact in such areas without being preceded by a badger removal programme.

7. The Department is aware, however, that vaccination has taken place in Wales as an intervention and that there are ongoing vaccination trials in the Republic of Ireland. As part of its ongoing review, the Department will consider the outcomes of such studies as results become available and use such evidence to modify its strategy, where necessary. It is noted that badger removal has preceded badger vaccination in the Republic of Ireland, which means that badger densities and infection load have already decreased prior to any large-scale vaccination of badgers. It is the Department's view that vaccination of badgers does have a role to play in tackling bTB infection in cattle and can also play a role in creating a healthier badger population. However, its role is seen as best utilised as part of a longer-term strategy, once the number of infected badgers in the population has been reduced through other types of intervention.
8. Vaccine developments, however, will be kept under regular review.

Culling

9. There have been several studies carried out across England and the Republic of Ireland involving proactive badger culling. Culling activities in England suggest that repeated proactive culling can lead to reduced prevalence of bTB in the badger population. The Randomised Badger Culling Trials (RBCT) in England and the East Offaly and Four Area Trials in the Republic of Ireland have provided evidence that intensive, proactive, removal of badgers has reduced bTB in contiguous cattle populations. Moreover, follow-up studies have shown that the initial impact of reduced levels of bTB in contiguous cattle has been maintained for several years after the removal exercise was concluded. In studies following up on the Irish Four Areas Project, the risk of herd breakdowns was lower in former culled areas relative to former control areas 10 years after the cull trial. Furthermore, herd breakdowns were associated with higher badger density areas earlier in the study period.
10. The Department is aware that bTB levels in cattle herds surrounding RBCT proactive cull areas increased in England, resulting in the perturbation effect hypothesis. Perturbation is the increased movement of badgers caused by disruption of social groups through badger removal. This increased movement of badgers is thought to have led to increased bTB infection levels in cattle herds, particularly outside the proactive cull zone (the perturbation effect). However, the perturbation effect has not been observed in the Republic of Ireland during their badger removal programme.
11. To date, proactive culling has not taken place in Northern Ireland, therefore the Department has no evidence as to whether or not the perturbation effect is likely to occur in Northern Ireland. While the Department believes that the evidence

indicates that proactive culling can be effective, it remains concerned about the possibility of any so-called perturbation effect and would have to consider any potential risks associated with it. Given this lack of evidence, the Department sees merit in considering the effectiveness of culling alongside some mitigating measure such as Test and Vaccinate or Remove (TVR) (see below) or vaccination in surrounding areas.

12. The Department is aware that DEFRA currently has a policy of issuing licences to permit groups of farmers to apply to cull badgers in certain areas. Whilst it is understood that these are not scientific studies but are policy interventions, DAERA will continue to closely monitor the outcomes of these interventions.

“TVR” Approach

13. DAERA has recently completed the fourth year of a five-year research project designed to describe the effects of implementing a TVR intervention approach in an area of high cattle bTB prevalence in County Down. This is an ongoing research project and fieldwork is due to be completed in October 2018. Results from this study are expected to become available from 2019. The TVR Study has, however, provided some evidence that the methodologies can be practically deployed in a field situation. This is a unique study, and it is the first time that such an intervention approach has been trialled anywhere. In 2013, modelling work was commissioned by the then Food and Environment Research Agency, now the National Wildlife Management Centre within the Animal and Plant Health Agency (APHA). This modelling helped design the original research project. One of the objectives of the TVR Study is to test the outputs of the model. DAERA hopes to commission this research, the outputs of which may help inform future intervention strategies along with other future research findings as they are published.
14. Given that the outputs from the TVR study are not currently known and this is the only research of its kind, there is insufficient evidence to determine whether TVR as a policy intervention would be effective. Results from the TVR Study will not start to become available until 2019. Moreover, the TVR Study is only being carried out in one area and hence interpretation of the impact on bTB levels is likely to be inconclusive (as will be extrapolation of any results to other areas). In the meantime, bTB levels are continuing to increase and the Department is of the view that decisions should be made on the basis of the currently available evidence. Any policy for wildlife intervention must be subject to regular review. Therefore, the Department is minded to review the feasibility of TVR as a policy intervention once results of the TVR Study become available and along with all other emerging evidence from elsewhere.
15. The Department is aware that the Welsh Government recently announced plans to carry out a TVR approach in high-incidence areas in order to reduce the number

of bTB breakdowns. In these areas, chronic herds will have individual action plans with disease control measures specifically aimed at clearing up infection in cattle. In chronic breakdown herds, where there is evidence of infection in the badger population, the Welsh Government will consider, where necessary, cage-trapping, testing and, where necessary, removing infected badgers. The Department will monitor any outcomes from that intervention.

Annex D - Compensation Caps and Reductions

Table 1. Cap level impact on non-pedigree animals

Cap level per non-pedigree animal	Total no. of herd-keepers in 2016-17 who would have been impacted by a cap at this level i.e. had compensation paid for any animal above this level	% of the total number of NI total herd-keepers impacted	% of the total number of NI herd-keepers compensated in 2016-17 impacted	Annual savings to DAERA (based on 2016-17 profile)
£1,000	1,729	7.1	72.6	£2,757,439
£1,100	1,529	6.3	64.2	£2,026,129
£1,200	1,299	5.3	54.6	£1,408,484
£1,300	1,026	4.2	43.1	£926,284
£1,400	742	3	31.2	£573,730
£1,500	464	1.9	19.5	£337,535
£1,600	295	1.2	12.4	£188,970
£1,700	177	0.7	7.4	£97,960
£1,800	75	0.3	3.2	£58,320
£1,900	58	0.2	2.4	£38,920
£2,000	33	0.1	1.4	£24,700

Table 2. Cap level impact on pedigree animals

Cap level per pedigree animal	Total no. of herd-keepers in 2016-17 who would have been impacted by a cap at this level i.e. had compensation paid for any animal above this level	% of the total number of NI total herd-keepers impacted	% of the total number of NI herd-keepers compensated in 2016-17 impacted	Annual savings to DAERA (based on 2016-17 profile)
£1,200	252	1	10.6	£1,547,755
£1,320	246	1	10.3	£1,385,255
£1,440	230	0.9	9.7	£1,231,670
£1,560	208	0.9	8.7	£1,092,240
£1,680	190	0.8	8	£967,905
£1,800	142	0.6	6	£863,900
£1,920	137	0.6	5.8	£774,340
£2,040	113	0.5	4.7	£695,000
£2,160	109	0.4	4.6	£629,100
£2,280	96	0.4	4	£570,000
£2,400	81	0.3	3.4	£517,900
£3,500 pedigree stock bull	36	0.1	1.5	N/A ¹⁰

Table 3. Cap level for pedigree or non-pedigree animals over £3000

Cap level per animal, commercial or pedigree	Total no of herd-keepers in 2016-17 who would have been impacted by a cap at this level i.e. had compensation paid for any animal above this level	% of the total number of NI total herd-keepers impacted	% of the total number of NI herd-keepers compensated in 2016/17 impacted	Annual savings to DAERA (based on 2016-17 profile)
£3,000	76	0.3	3.2	£348,400
£4,000	37	0.2	1.6	£193,700
£5,000	23	0.1	1.0	£114,350

¹⁰ Numbers are extremely low to quantify and therefore are less relevant to overall calculations in provided table.

Table 4. Percentage Reduction only on DAERA 2016-17 TB Compensation profile

% reduction	Annual savings to DAERA (based on 2016-17 profile)
5	£882,150
10	£1,764,300
15	£2,646,450
20	£3,528,600
25	£4,410,750
30	£5,292,900

Table 5: Percentage Reduction and Cap levels applied to DAERA 2016-17 TB Compensation profile

Category	Cap	Following 10% reduction in Year One. % of herd-keepers compensated in 2016-17 that would have been impacted by cap in 2016-17	Following 10% reduction in Year One. % of total herd-keepers in NI that would have been impacted by cap in 2016-17	Annual savings to DAERA with 10% reduction and subsequent cap (based on 2016-17 profile)	Following 25% reduction in Year Two. % of herd-keepers compensated in 2016-17 that would have been impacted by cap in 2016-17	Following 25% reduction in Year Two. % of total herd-keepers in NI that would have been impacted by cap in 2016-17	Annual savings to DAERA with 25% reduction and subsequent cap (based on 2016-17 profile)
Non-pedigree	£1,500	11.5	1.1	£1,533,275	1.6	0.15	£3,571,909
Pedigree	£1,800	8.2	0.8	£986,135	5.5	0.5	£1,242,291
Stock bull	£3,500	0.4	0.04	negligible ¹¹	0.13	0.01	negligible ¹¹

¹¹ Numbers are extremely low to quantify and therefore are less relevant to overall calculations in provided table.

Annex E - Glossary of Terms

Term	Explanation
AERA Committee	NI Assembly Committee for Agriculture, Environment and Rural Affairs.
AFBI	Agri Food and Biosciences Institute.
AHDB	Agriculture and Horticulture Development Board.
AHWNI	Animal Health & Welfare NI.
AHWPD	Animal Health and Welfare Policy Division.
Animal Incidence	The incidence of disease describes the frequency of new cases of disease amongst previously non-diseased animals over a period of time.
BCG Vaccine	Bacillus Calmette-Guérin (BCG) vaccine is a vaccine primarily used against tuberculosis.
bTB	Bovine Tuberculosis.
BVD	Bovine Viral Diarrhoea.
CAFRE	College of Agriculture, Food and Rural Enterprise.
CHT	Check Herd Test.
CNCC	Council for Nature Conservation and the Countryside.
Conacre	The subletting for a single season of small portions of a farm.
CVO	Chief Veterinary Officer.
DAERA	Department of Agriculture, Environment and Rural Affairs.
DEFRA	Department for Environment, Farming and Rural Affairs (GB).
DPP	Dual Path Platform.
DRT	Disease Response Team.
DVO	Divisional Veterinary Office/Officer.
EIA	Environmental Impact Assessment.
EIPG	Evidence and Innovation Priorities Group.
Epidemiologist	Scientist who studies the patterns, causes, and effects of health and disease conditions in defined populations.
EU	European Union.
FOIA	Freedom of Information Act.
FVO	Food and Veterinary Office (within European Union).
GIS	Geographical Information System.
IFNG	Gamma interferon test carried out on a blood sample.
LMC	Livestock and Meat Commission NI.

Term	Explanation
<i>M. bovis</i>	<i>Mycobacterium bovis</i> .
Minister	Minister of Agriculture, Environment and Rural Affairs.
NVL	Non visible lesion.
OTF	Officially Tuberculosis free.
OTS	Officially Tuberculosis free status suspended.
OTW	Officially Tuberculosis free status withdrawn.
PAC	NI Assembly Public Accounts Committee.
PVP	Private Veterinary Practitioner.
PMB	Project Management Board.
RBCT	Randomised Badger Culling Trials.
RDP	Rural Development Programme.
REP	Regional Eradication Partnerships.
RIA	Regulatory Impact Assessment.
RTA	Road Traffic Accident.
Sensitivity	The ability of a test to correctly identify an infected animal as positive, i.e. the higher the sensitivity of the test, the lower the probability of incorrectly classifying an infected animal as uninfected (a false negative result).
SICCT test	Single Intradermal Comparative Cervical Tuberculin test (the skin test).
Specificity	The ability of a test to correctly identify an animal that is free from infection as negative, i.e. the higher the specificity, the lower the probability of classifying an uninfected animal as infected (a false positive result).
TBEP	Tuberculosis Eradication Partnership.
TBSPG	Tuberculosis Strategic Partnership Group.
TVR	Test and Vaccinate or Remove study.
UCD	University College Dublin.
VEU	Veterinary Epidemiology Unit (DAERA).
VNTR	Variable Number Tandem Repeats.
VO	Veterinary Officer.
WGS	Whole Genome Sequencing.

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