

Executive Summary

1. Introduction and Terms of Reference

This Value for Money (VFM) evaluation examines the Bovine Tuberculosis Eradication Programme (BTEP), following procedures laid down under the government's Value for Money and Policy Review initiative. The terms of reference, set out in Chapter 1, closely follow the recommendations of the Department of Finance. The following is a short summary of the findings, conclusions and recommendations contained in the review. A more detailed summary is set out at the end of each Chapter and again in Chapter 9.

2. Methodology

The reference period for the review is 1996-2006. The reasons for the choice of this reference period are set out in Chapter 1. One of the principal tasks of this VFM review was to disaggregate expenditure on TB eradication from that on brucellosis eradication, given that the two programmes are normally accounted for conjointly. Primary research undertaken included the issuing and completion of questionnaires relating to staff costs, a series of semi-structured interviews and a benchmarking exercise with the relevant authorities in Northern Ireland, Great Britain and Spain. An advanced draft of the review underwent quality assessment by an independent evaluator prior to its finalisation.

3. Constraints to the eradication of bovine TB

Tuberculosis, in its various forms, is known to have existed for millennia and is one of the most intractable diseases known to man. Difficulties associated with the detection of the organism in live animals and in the laboratory, and the absence of an effective vaccine for cattle complicates the control and eradication of bovine tuberculosis and obliges government and industry to undertake comprehensive, protracted programmes involving the testing of the national cattle herd and the slaughter of animals reacting positively to the test. This complex process is rendered all the more difficult, when, as is the case in Ireland, disease transmission occurs not only between bovine animals, but also between bovine animals and a wildlife reservoir. Reviews of the Irish eradication programme, undertaken in the 1980s and 1990s, identified the presence of TB infection in badgers as constituting one of a number of constraints to eradication in this country. Although, in the intervening period, research and advances in technology have delivered partial solutions to certain of these, the control of infection within the badger population and between badgers and cattle remains the pre-eminent constraint to eradication in

Ireland. The Irish experience in this regard has been consistent with that of other countries, such as Great Britain and Northern Ireland, where wildlife vectors also play a critical role in the maintenance of the disease in cattle.

4. Programme Objectives

A programme for the eradication of bovine TB has been operative in Ireland since a pilot commenced in 1950. At its inception, the objective of the programme was to eradicate bovine tuberculosis in order to (i) to preserve the valuable trade in store cattle with Great Britain; (ii) to address concerns regarding the threat to human health; and (iii) to mitigate tuberculosis-related animal production losses. While eradication has remained the long-term objective of the Programme from its inception to the present day, the interim objective, since the early 1990s, has been *to control bovine tuberculosis at levels consistent with maintaining trade in bovine animals and their products, at minimum cost to the Exchequer, while overcoming the constraints to eventual eradication through investment in research and technology*. To improve measurability, the review proposes that the interim objective should be qualified by the introduction of quantifiable targets relating to the principal disease parameters. It recommends that these be expressed as five-year exponential moving averages in order to take account of the cyclical nature of the disease and the distortions arising from the use of annual reporting periods.

5. Programme resources and outputs

The Programme is complex, comprising a wide range of measures, including: compensation schemes that address losses arising as a result of the disclosure of tuberculosis in cattle herds; a comprehensive regime of surveillance and control tests; targeted badger removal; a research programme; a reactor collection service; and veterinary post-mortem inspection in slaughter premises. These programme measures are underpinned by a range of horizontal supporting measures, including quality control, herd registration, animal identification and tracing, and computerised management of testing and disease information. The review concludes that the various outputs of the Programme are clearly definable in both qualitative and quantitative terms. They are generally delivered in a timely and complete manner, and in compliance with the provisions of domestic and European legislation.

The gross cost of the programme (excluding staff costs) has been falling since peaking at €65.2m in 1999. Expenditure in 2006, which was just over €36m, was somewhat more than half of this level, reflecting the underlying reduction in TB levels in cattle over this period. The main areas of cost are compensation (€17.5m) and tuberculin testing (€12.7m), wildlife control (€2.6m), research (€1.8m) and the reactor collection service (€1m).

In 2006, 375 full-time equivalent staff members, comprising 180 administrative, 118 technical, and 78 veterinary were engaged in administering the Programme. There has been a significant reduction in staff numbers in recent years, particularly as a result of the introduction of enhanced Information Technology systems. Total expenditure on staff was €33.8m in 2006. The relatively high staff numbers are largely attributable to: the inherent complexity of the Programme; the requirement to deliver the Programme through an extensive nationwide network of local offices; the high demand for field intervention; and the requirement for significant technical and veterinary input. The review recommends that the Department keep the level of staff and its deployment under active review in order to take advantage of efficiencies that may arise from continuing advances in technology, changes in disease dynamics, or novel methods of Programme delivery.

6. Programme impact

The impact of a programme can be thought of as the difference the programme has made to targeted beneficiaries and society as a whole over the medium to long-term, having made allowances for what would have occurred anyway in its absence. The review concludes that the net impact of the Programme has been to facilitate the growth of the Irish cattle industry by creating and enhancing export opportunities and by improving the productivity of cattle rearing. The export trade in cattle and beef, which was worth €1.8 billion in 2006, is dependent on the effective implementation of the eradication programme. The benefit of improved market access accrues to the farmer producer and to the processing sector in the first instance, while the benefits of improved animal productivity and public health accrue primarily to the farmer producer. Society at large also benefits from the Programme's impacts in these three areas to the extent that the

improved economic performance of the farming industry spills over into the wider economy and to the extent that the Programme contributes to enhanced public health.

7. Programme rationale and continuing validity

The original rationale for the programme remains valid. The requirement to access export markets for live cattle continues to apply today, despite the considerable changes in the scale and structure of the cattle industry and in the market for cattle and beef in the interim. It is clear that, in the absence of a comprehensive programme for the control and eradication of bovine tuberculosis, access to export markets would not be possible. Maintenance of a Programme continues, therefore, to be essential to provide the guarantees necessary to enable Irish cattle and their products to access EU and third country markets. This has consistently been the conclusion of the many previous Programme reviews.

8. Justification for and scale of public intervention

Public intervention is justified because of the uneven exposure to disease risk and the protected status of the badger (externalities) and the fact that the concerted action by individual farmers needed to control and eradicate the disease would be unlikely to take place (public good). However, the scale of public intervention has been limited through the implementation of market-type mechanisms, which reduce the extent of public exposure to the costs of the programme. The review concludes that these mechanisms, which include user charges in the form of payment by farmers for the majority of tuberculin testing and their contribution to the general cost of the programme through Bovine Disease Levies, have significantly reduced costs to the Exchequer. The Department also makes extensive use of outsourcing – another market-type mechanism – in the delivery of the programme. Outsourced elements include: tuberculin testing by Private Veterinary Practitioners; valuation of reactors by independent valuers; extensive use of private sector resources in the delivery of the Department’s Interim Wildlife Strategy; and the use of private hauliers in the collection of reactors. International experience would suggest that the use of outsourcing in the delivery of the BTEP is likely to have improved its efficiency. Market mechanisms are employed to a greater extent in Ireland than is currently the case in those countries against which benchmarking was carried out.

The review concludes that Bovine Disease Levies are an appropriate mechanism for sharing the costs of the programme between the State and the farming sector, which is the main beneficiary of the programme. However, it finds that greater efficiency and effectiveness could be achieved by consolidating the collection of the levies in other parts of the Department which already collect similar fees from the beef and dairy processing sectors and it recommends that the levies should contribute, using a multi-annual average, a minimum of 50% of the cost of compensation.

The level of public participation in the BTEP in the period under review can be regarded as appropriate, when account is taken of the market conditions facing cattle farmers over that time. The extent to which the programme delivery is outsourced is reasonable and the range of quality control measures in place is sufficient to guarantee an adequate standard of governance and the quality of inputs and outputs. No opportunities for extending the use of outsourcing can currently be identified.

9. Tuberculin testing

All herds undergo at least one test per annum. In 2006, some 9 million animal tests were carried out on the approximately 6.5 million animals in the national herd. Over the period under review, the average number of tests per animal was 1.36 and the programme consistently covered in excess of 97% of the national herd in any given year. The programme of field surveillance and control is based on the diagnosis of disease using the intradermal test (SICTT) and an ancillary blood-based test, known as the interferon-gamma (IFN- γ) assay, which has been introduced in recent years. While it is more expensive and less accurate than the SICTT, the assay plays a valuable role in resolving disease, in conjunction with the SICTT, in known infected herds. The review concludes that a series of quality control measures provide assurances as to the adequacy of tuberculin testing by veterinarians and the quality of tuberculin used in the Programme.

Department expenditure on testing, which stood at €31.4m in 1995, was €8.9m (excluding the cost of tuberculin) in 2006 in respect of the approximately 9 million animal tests carried out that year, a unit cost of €1.02/test. The unit cost in 2006 of those tests paid for by the Department was €3.64. The reduction in expenditure between 1995 and 2006 is due largely to the transfer of the bulk of the cost of testing from the

Department to the farming sector from 1996 onwards. This additional cost to the farming sector was offset by a reduction in the disease levies.

The review finds that the majority (85%) of the tests undertaken under the programme are carried out in accordance with trade Directive 64/432/EEC and that the cost-effectiveness of those tests that are not specifically required for trade under the terms of this Directive is greater than that for surveillance testing carried out in compliance with the Directive. It concludes that the existing testing programme should be maintained and that the cost-effectiveness of tests should be maximised by the continued use of measures aimed at ensuring their appropriate targeting.

10. Possible Use of Lay Testers

Bovine TB testing is currently performed by veterinary practitioners. The review concludes that TB testing by non-veterinarians in Ireland would appear to require an amendment to the Veterinary Practice Act, 2005. Separately, the provision of veterinary certification on the basis of procedures carried out by lay testers would also require close examination. The economic benefits of using non-veterinarians to deliver some, or all, of the TB testing programme in Ireland would seem to be limited for a number of reasons, including the already relatively low unit cost of intradermal testing in this jurisdiction. Furthermore, the supply of private veterinary resources in this country would currently appear to be sufficient to meet the demand for tuberculin testing under the BTEP. However, the review recommends that the Department should establish the precise legal position in relation to the use of lay testers in consultation with the Veterinary Council, which is responsible for implementing the Veterinary Practices Act.

11. *Post-mortem* surveillance

Post-mortem examination at slaughterhouses forms part of the TB surveillance programme. Irish research has pointed to a degree of variability between individual slaughter premises in the detection of tuberculosis and there is a need to ensure that performance is actively monitored on an ongoing basis to ensure that any such variability is minimised.

12. Compensation

Farmers who experience a disease breakdown are entitled to compensation. The annual cost of compensation (excluding valuers' fees) fell from a peak of €41.6m in 1999 to €16.6m in 2006 as a result of a reduction in the number of reactors. The On-Farm Market Valuation Scheme (OFMVS), which replaced the Reactor Grant Scheme from April 2002, while somewhat more expensive to operate than the latter, is more equitable and effective as it better reflects market value and therefore encourages co-operation, discourages fraud and contributes to the resolution and the containment of infection. The OFMVS incorporates quality control mechanisms designed to ensure value for money in respect of the substantial amounts that are channelled to affected herdowners via this mechanism. These quality control mechanisms are in line with, or exceed, those in other jurisdictions that operate similar schemes. However, the review concludes that the scheme would benefit from the introduction of a code of practice for valuers.

Other compensation measures include the Depopulation, Income Supplement and Hardship Grant schemes, which are unique to Ireland among the countries examined for this review. These measures, which cost €3.3m in 2006, serve a very useful function in alleviating the income losses incurred by herdowners as a result of a disease breakdown. However, there is evidence to suggest that the schemes, in particular the rates of grant and categories of animals, need to be reviewed, specifically to better target those categories of animals and herds for which restriction and removal of animals give rise to the biggest income loss.

13. Reactor Collection Service

The Exchequer cost of operating the Reactor Collection Service (€1m in 2006), which is provided free of charge to farmers, is partially offset as a result of the efficiencies arising from the existence of a centralised reactor collection service. These ultimately result in higher salvage prices paid by meat factories. The review finds, however, that the cost-effectiveness of the service could be improved by reducing the need for direct involvement by Department staff in its routine operation. Separately, the review finds that the operation of a centralised Reactor Collection Service enhances the effectiveness of disease control measures.

14. Wildlife strategy

While considerable progress has been made in overcoming the constraints to eradication through investment in research and technology and while progress has been made in reducing the incidence of the disease, the existence of an infected wildlife reservoir remains a continuing and substantial obstacle to the eventual eradication of bovine TB. The strategic approach adopted by the Department to this constraint has been twofold. In the long-term, the objective is to develop a vaccine for use in badgers. In the shorter term, the Department is implementing a strategy, agreed through Social Partnership, that concentrates badger capturing in those areas of the country where the highest levels of cattle disease occur. The strategy adopted is underpinned by the findings of research already undertaken and it will continue to be subjected to scrutiny in the light of findings from current and planned research. While the significant reduction in the incidence of TB since 1998 may be attributed to a number of factors, the enhancement of the interim wildlife strategy from the early years of this decade can reasonably be regarded as having made an important contribution to this improving situation. The important role played by infective badgers in maintaining bovine tuberculosis in Ireland justifies the continuation both of the targeted interim wildlife strategy and investment in the development of a badger vaccine.

15. Research

Research carried out by and on behalf of the Department has strongly influenced the formation of bovine TB policy and has been instrumental in overcoming many of the factors previously identified as constraining progress towards eradication of the disease. Much of the current research programme is aimed at overcoming the factors that continue to constrain progress, in particular those arising from the infected wildlife reservoir. This should continue to be the central focus of research activity.

16. Information and Communication Technology:

The Department has invested considerably in developing and upgrading ICT resources over the period under review, the most significant advance being the development of the Animal Health Computer System (AHCS), which has automated many of the previously labour-intensive tasks associated with programme management, and brought significant efficiency gains to the Department, farmers, veterinary practices and consumers.

17. Performance Measurement

The Bovine TB Eradication Programme already utilises a wide variety of measures capable of monitoring efficiency and effectiveness, although many of these are not formally denominated performance indicators. The review contains proposals for new indicators for a number of measures, including compensation, tuberculin testing, the wildlife programme, reactor collection and post-mortem surveillance. These proposed indicators complement those already in place and, together with the latter, should provide the basis for providing a comprehensive and accurate account of Programme performance.

18. Programme Effectiveness

Over the period under review, the BTEP has met its interim objective of controlling bovine tuberculosis at levels consistent with maintaining trade in bovine animals and their products. Bovine TB levels were successfully maintained at or below the long-term trend for 9 of the 11 years under review, the exceptions being 1998 and 1999, when they rose significantly above these values. In view of the cyclical nature of the disease, disease trends should be viewed over the medium- to long-term, rather than on an inter-annual basis. The long-term trend over the period under review has been downwards; for example, the average number of reactors in the 5 year period 2002-06 was, at 26,000 per annum, 32% lower than in the preceding 5 years 1997-2001.

19. Programme Efficiency

The Review finds that the sharing of the costs of the programme with its principal beneficiaries, together with a steady reduction in disease levels from 1999 onwards, significantly mitigated public expenditure on bovine TB Eradication over the period under review. The unit costs of the various programme measures (cost of testing, compensation etc) are generally in line with or below those in countries against which the BTEP was benchmarked.

20. Scope for Alternative Policy or Organisational Approaches

While the review finds that the programme is generally implemented in an efficient and effective manner, it identifies a number of areas in which efficiency or effectiveness might be improved by adopting alternative organisational and policy approaches. Proposals for the adoption of changed practice are presented and a number of

recommendations are brought forward under the following headings: measures to enhance disease control for high-risk herds; the use of lay testers; reactor collection; field visits; and collection of bovine disease levies.

21. Recommendations

The recommendations of the review are summarised below.

Rationale

Recommendation 1 (Chapter 2)

The interim objective of the programme, previously articulated, should be clarified by the following statement:

“As long as the constraint imposed by the existence of an infected wildlife reservoir continues to exist, progress towards the interim objective will be considered adequate if the herd incidence, the absolute number of reactor animals and the number of reactor animals per thousand animal tests (APT) continue to follow a declining trend, as represented by the respective five-year exponential moving averages. The interim objective will be formally reassessed in 2013, at which time it is expected that research into badger vaccination will have reached a point that will enable projections to be made as to its likely long-term impact on bovine tuberculosis”.

Recommendation 2 (Chapter 3)

The Department should keep under review the level at which costs are shared between the state and the private sector in the delivery of the Programme with a view to achieving an appropriate level of private sector participation.

Recommendation 3 (Chapter 3)

The Department should keep under review the extent to which outsourcing is used in the delivery of the Programme in order to ensure that it does not fall below the high level currently obtaining. Decisions with regard to the further use of outsourcing should have regard to the practicability and cost-effectiveness of any proposed changes and take account of the need to ensure equity, good governance and the maintenance of critical core capacity.

Efficiency

Recommendation 4 (Chapter 5)

The rates of Bovine Disease Levies payable should be set on an annual basis, using a multi-annual average, so as to provide for a minimum of 50% of the estimated ongoing cost of reactor compensation.

Recommendation 5 (Chapter 5)

The existing quality control measures in the Programme should be retained and, where appropriate, strengthened. In particular, a Code of Practice for Valuers should be implemented following the completion of consultation.

Recommendation 6 (Chapter 5)

Given the dynamic nature of animal diseases and the ongoing development of technological resources, the staff complement and its deployment should be kept under active review to ensure that the Programme is delivered in the most efficient manner possible.

Recommendation 14 (Chapter 8)

The Department should clearly establish the legal position and the opinion of the Veterinary Council of Ireland in relation to the use of lay testers and should actively monitor international developments in this regard.

Recommendation 15 (Chapter 8)

The Department should scale back involvement by technical staff in the on-farm aspects of the Reactor Collection Service, limiting such involvement to particularly problematic cases and the undertaking of quality control inspections on a small percentage of reactor collections.

Recommendation 16 (Chapter 8)

The Department should keep the rationale for field activities undertaken as part of the BTEP under constant review and should ensure that work practices are sufficiently flexible to ensure that this component of the Programme is delivered in a cost-effective manner. It should ensure, in particular, that the full potential of existing and emerging technology is exploited in order to minimise the need for on-farm interventions.

Recommendation 17 (Chapter 8)

Overlap in the responsibility for the collection of disease levies/inspection fees between different Divisions in the Department should be removed by the transfer of responsibility for the collection of the disease levies to the Central Fees Unit and Dairying Division.

Substantive Effectiveness

Recommendation 7 (Chapter 6)

The rates of grant available under the Income Supplement Scheme should be reviewed to better reflect the seasonal variation in the income loss arising from the removal of reactors and the different levels of income loss for the different categories of cattle. The continuing eligibility of herdowners for this scheme should be reviewed after a period of 6 months on the basis of a comparison between herd composition and enterprise type at that time and the position prior to the breakdown.

Recommendation 8 (Chapter 6)

The rates of grant payable under the Hardship Grant Scheme should be reviewed, in particular, to better target the grants on those cattle where the cost of feed significantly exceeds the increase in value during the November-April period. The scheme should also be restricted to herdowners who can demonstrate that they have additional cattle and feed requirements in their herds as a result of the restriction imposed for disease control purposes.

Recommendation 9 (Chapter 6)

Research and technological development remain crucial to the resolution of the factors that continue to constrain progress towards the eradication of bovine TB and the Department should, consequently, maintain its support for these measures.

Recommendation 10 (Chapter 6)

The Department should reassess its policy in relation to the deployment of IFN- γ assay in light of the results of a study, currently being undertaken, on the effectiveness of the test in shortening restriction periods.

Recommendation 12 (Chapter 8)

Having regard to recent research findings, the Department should consider implementing one of the policy options outlined in this report aimed at enhancing disease control measures in respect of high-risk herds.

Recommendation 13 (Chapter 8)

The Department should consider implementing improved protocols for the management of herds contiguous to infective breakdowns.

Evaluative Effectiveness

Recommendation 11 (Chapter 7)

The Department should expand its existing range of Performance Indicators, by selectively adopting some of those additional indicators identified in this chapter. It should clearly identify those measures that are regarded as being the Key Performance Indicators for the Bovine TB Eradication Programme and these should be regularly published on the Department's website.