

1. **Identification of the programme**

Member State: **Ireland**

Disease(s)<sup>1</sup>: **Bovine Tuberculosis**

Request of Community co-financing for<sup>2</sup>: **2012**

Reference of this document: **TB Programme 2012**

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<sup>1</sup> One document per disease is used unless all measures of the programme on the target population are used for the monitoring, control and eradication of different diseases.

<sup>2</sup> Indicate the year(s) for which co-financing is requested

## 2. Historical data on the epidemiological evolution of the disease(s)<sup>3</sup>:

A bovine tuberculosis eradication scheme commenced in Ireland in 1954, when an estimated 80% of cattle herds were infected. It was decided at that time that an individual herd represented a single epidemiological unit. i.e. all the animals in the herd regardless of ownership, is the unit. Individual herd registration and a herd numbering system commenced in the mid-1950s to facilitate the administration and management of all disease eradication programmes including bovine TB. The eradication scheme rapidly reduced the animal disease incidence from 17% overall to less than 0.5% in 1965. By 1965 all herds had individually at some stage over the previous 11 years achieved Officially Tuberculosis Free (OTF) status in accordance with Directive 64/432/EEC and no herds of unknown status remained in Ireland.

In April 1988 a specialised agency, ERAD, was established to implement a vigorous four-year TB eradication programme. The measures implemented included: pre-movement testing, a comprehensive testing programme using a more potent tuberculin and a more severe interpretation than that required by Directive 64/432/EEC. The ERAD programme involved additional and more frequent testing of administrative/local 'black spot' geographic areas with perceived higher disease prevalence, known high-risk herds, contiguous herds, herds that were linked epidemiologically and also extended herd-restriction. However, these measures failed to have any appreciable impact on the incidence of the disease and, in 1992, authority for determining policy and strategy and for managing the disease programme reverted to the Department of Agriculture, Fisheries and Food where it is managed by ERAD Division. One of the significant conclusions of the ERAD period was that one of the main factors affecting the disease levels was an endemic disease reservoir in a wildlife host (badgers) sharing the pasturage area.

The Table at paragraph 2.2b outlines the cattle population trend over the past four decades and a comparison of the disease incidence during that period. It describes (i) the considerable progress made in the early years of the Tuberculosis eradication programmes, (ii) the stagnation in efforts to reduce the incidence of the disease in the period 1965 to 1999 and (iii) the progressive reduction, with some annual variations, in the level of the disease since 1999 particularly regarding reactor numbers which fell from c.45,000 to 20,211 in 2010. The average number of reactors removed in the 5-year period 2006-10 was, at c.26,100, 25% lower than in the preceding 5-year period.

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<sup>3</sup> A concise description is given with data on the target population (species, number of herds and animals present and under the programme), the main measures (testing, testing and slaughter, testing and killing, qualification of herds and animals, vaccination) and the main results (incidence, prevalence, qualification of herds and animals). The information is given for distinct periods if the measures were substantially modified. The information is documented by relevant summary epidemiological tables, graphs or maps.

### **Main measures 1992 – 2011**

The measures implemented included an annual round screening test of all herds, controls on movement of animals, restriction of holdings, removal and slaughter of reactors and specific targeted testing, including the use of blood tests as an adjunct to the skin test, with appropriate follow-up testing, compensation for farmers whose herds are affected by disease, a focused badger population control where they have been implicated as a probable cause of TB and a research programme that includes continued work towards the development and introduction of a badger vaccine to prevent the spread of TB. A more detailed description of the programme measures is set out in Section 4.

### **Main results**

The Table below outlines the cattle population trend and compares the disease incidence during that period.

Year	Cattle Population Tested	Number of Animal Tests	NO. OF REACTORS	Percentage animal Disease Incidence	APT **	RPT ***
1960	4,683,700	*	139,881	2.99	-	29.9
1975	7,168,100	*	21,339	0.30	-	3.0
1985	6,907,200	11,180,602	32,608	0.47	2.9	4.7
1995	7,174,016	10,112,939	33,180	0.46	3.3	4.6
1996	7,412,933	10,073,859	30,400	0.41	3.0	4.1
1997	7,725,634	9,910,074	28,647	0.37	2.9	3.7
1998	7,946,989	10,677,291	44,498	0.56	4.2	5.6
1999	7,569,735	10,749,580	44,903	0.59	4.2	5.9
2000	7,032,407	10,304,162	39,847	0.57	3.9	5.7
2001	7,097,430	9,402,196	33,702	0.48	3.5	4.8
2002	7,025,096	9,400,065	28,930	0.41	3.1	4.1
2003	6,936,820	9,168,722	27,978	0.40	3.1	4.0
2004	6,992,264	8,825,720	22,967	0.33	2.6	3.3
2005	6,407,456	9,060,044	25,884	0.40%	2.9	4.0
2006	6,260,133	9,000,519	24,173	0.39%	2.7	3.9
2007	6,084,037	9,143,719	27,711	0.45%	3.03	4.5
2008	6,150,163	9,211,058	29,901	0.49%	3.25	4.9
2009	6,025,656	8,963,097	23,805	0.40%	2.66	4.0
2010	5751564	8,390,750	20,211	0.35%	2.41	3.5

\* Accurate figures for the total number of animal tests per year were not available until 1978.

\*\* The APT is used as a measure of the incidence of disease compared to the level of testing being carried out. The APT figures represent the number of reactor animals disclosed per 1,000 animal level tests

\*\*\* The RPT is used as a measure of the incidence of disease compared to the total population of animals. The RPT figures represent the number of reactor animals disclosed per 1,000 animals in population.

### **Note on Epidemiological unit classification**

As stated above, each single unique epidemiologically distinct herd is allocated a herdnumber for the purpose of disease control. An ‘epidemiological unit’ or herd is considered to be any number of animals that are held, kept or handled in such a manner that they share the same likelihood of exposure to infectious disease and that the control of the spread of infectious disease from the unit can be facilitated. The animals comprising the herd may be owned solely or jointly with others and the herd occupies parcels of land used solely or jointly with others which may comprise parcels of land that are separated by some distance but, because of general proximity and/or management practices, are considered to be one epidemiological unit. Where the parcels of land used by the farmer are located in more than one administrative division or are sufficiently far distant to warrant being treated as two (or more) epidemiological units or where disease management controls dictate that it is prudent to regard them as two (or more) epidemiological units, a herdnumber will be issued to each such unit (herd). Each herd is tuberculin tested at a minimum once annually and full disease and movement control measures apply to each such herd and such herds are considered to be epidemiologically related with mandatory tracing and checking in the event of suspicion of disease. All parts of a herd being the epidemiological unit are subject to control if and when disease is identified i.e. the movement restriction applies to all the fragments used by the herd and the legislation empowers the Veterinary Inspector to confine animals to particular fragments if disease control so warrants.

### **Background to Wildlife Policy**

Results from a number of small scale local reactor-removal trials in the 1980s identified a link between tuberculosis in badgers and tuberculosis in cattle in the same local areas. Formal studies i.e. the East Offaly Study (EOP), and the follow-up the Four Area Project (FAP), have shown that reducing the density of badgers over a wide area and maintaining these lower densities over a number of years resulted in significantly lower levels of tuberculosis in cattle locally than had been observed prior to the commencement of the trials and a reduction in risk of a herd restriction as a consequence of bovine TB.

Following on from these findings, the Department developed (i) an interim wildlife strategy which involves the capture and removal of badgers associated with bovine tuberculosis breakdowns and (ii) a Government funded, Wildlife Research Programme to establish the efficacy and to quantify the effects of vaccinating badgers, in support of the eradication of TB from the bovine population.

### **Future research on wildlife**

A number of field vaccination trials have commenced involving the introduction of a TB vaccine into badger populations over a number of areas for a period of at least 3 years. The objective of one trial is primarily to provide information as to the efficacy of an oral vaccine in reducing the level of TB infection in the wild badger population under field study. It is anticipated that the outcome of this research project will be reported on by 2015. Other projects underway or in prospect are designed to assess the impact of badger vaccination on the incidence of TB in cattle when compared to continued badger culling.

### **3. Description of the submitted programme<sup>4</sup>:**

#### **Main Objective**

Bovine Tuberculosis is a notifiable disease in Irish legislation and all herds in Ireland are included in the programme. The 2012 TB Programme is the second year of a new 5-year eradication programme covering the period 2011-2015. The objective of the programme is the eradication of TB from the cattle herd, based on a range of conventional test, slaughter and movement control methodologies; the programme also includes measures designed to deal with TB in the wildlife population by reducing the badger population in areas where they are seen to be contributing to bovine TB prevalence while a vaccine for TB in badgers is in development and under trial. Section 4 provides details on the measures.

There has been a significant improvement in the incidence of the disease since 1999. For example, reactor numbers have fallen from approximately 45,000 animals in 1999 to 20,211 in 2010. The herd incidence continues to fall and declined from 7.7% in 1999 to 4.65% in 2010. As referred to previously in this section, Ireland complies fully with EU Directive 64/432/EEC.

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<sup>4</sup> A concise description of the programme is given with the main objective(s) (monitoring, control, eradication, qualification of herds and/or regions, reducing prevalence and incidence), the main measures (testing, testing and slaughter, testing and killing, qualification of herds and animals, vaccination), the target animal population and the area(s) of implementation and the definition of a positive case.

#### 4. Measures of the submitted programme

##### 4.1. Summary of measures under the programme

###### First year: 2011

- |                                                          |                                                      |
|----------------------------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> Control ✓                       | <input type="checkbox"/> Testing ✓                   |
| <input type="checkbox"/> Slaughter of positive animals ✓ | <input type="checkbox"/> Killing of positive animals |
| <input type="checkbox"/> Vaccination                     | <input type="checkbox"/> Treatment                   |
| <input type="checkbox"/> Disposal of products            |                                                      |

###### Last year: 2015

- |                                                          |                                                      |
|----------------------------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> Eradication ✓                   | <input type="checkbox"/> Testing ✓                   |
| <input type="checkbox"/> Slaughter of positive animals ✓ | <input type="checkbox"/> Killing of positive animals |
| <input type="checkbox"/> Extended slaughter or killing   | <input type="checkbox"/> Disposal of products        |

###### ✓ Other measures (*specify*):

Section 3 details the measures of the programme which are summarised below:

- Epidemiological investigation of disease outbreaks including trace-back and trace-onward of infected/potentially infected animals, and of movement of animals into and out of restricted herds,
- The national herd is tested at a minimum once annually (round test screening), together with any consequential testing necessary arising,
- Early removal of reactors and the provision of compensation to farmers,
- Mandatory 30-day pre-movement test on animals exported,
- Targeted blood testing as an adjunct to the skin test in certain herds,
- Computerised system for recording and follow-up of tests and animal movements, traceback and trace forward of epidemiologically linked animals

- Implementation of various badger based research projects i.e. Badger vaccination trial and badger removal project

#### ***4.2 Organisation, supervision and role of all stakeholders<sup>5</sup> involved in the programme:***

##### **The Department of Agriculture, Fisheries and Food.**

###### ***4.2.1. Programme and Policy***

The initiation and drafting of the TB Eradication Programme and policy is the responsibility of the ERAD (Eradication of Animal Disease) Administrative and Veterinary HQ Divisions of the Department of Agriculture, Food and Marine under the responsibility of an Assistant Secretary and Deputy Chief Veterinary Officer. The programme is implemented through the Department's regional local offices.

###### **4.2.2. Veterinary Laboratory Services**

The Veterinary Laboratory Services (VLS) comprises the Central Veterinary Research Laboratory (CVRL) and the Regional Veterinary Laboratory at Backweston in Co. Kildare, the Brucellosis Laboratory, Cork, and five Regional Veterinary Laboratories located in Athlone, Cork, Kilkenny, Limerick and Sligo. The Bacteriology/Parasitology Division of the VLS provides a number of services to the BTEP, including:

- Culture and histopathological examination of diagnostic samples;
- Potency assays on the tuberculin protein purified derivative used in the TB test;
- DNA 'fingerprinting' of *M. bovis* isolates;
- Evaluation of new methods for the identification and typing of *M. bovis*;
- Serological tests to aid diagnosis in problem herds.

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<sup>5</sup> Describe the authorities in charge of supervising and coordinating the departments responsible for implementing the programme and the different operators involved. Describe the responsibilities of all involved.

#### **4.2.3. Veterinary Public Health Inspection Service**

The Veterinary Public Health Inspection Service (VPHIS) of the Department is responsible for ensuring food safety in slaughtering premises, cutting premises, cold stores, meat and meat products premises, and poultry slaughtering establishments. It has a permanent staff complement of c. 300 veterinary inspectors and technical staff and engages some 700 private veterinarians on a part-time basis. All cattle presented for slaughter in the State undergo a post-mortem inspection under the control and supervision of VPHIS staff in one of some 30 plants in which cattle are slaughtered, or, in the case of abattoirs, under the control and supervision of the veterinary staff of the various Local Authorities.

#### **4.2.4. Keepers**

Individual keepers are responsible for the testing of their herds so as to maximise herd health protection and certification status of herds and are responsible for arranging annual herd tests, within timescales prescribed for them by the Department, with their veterinary practitioners, and for payment of fees directly to practitioners in respect of, in general, one test/annum.

#### **4.2.5. Private Veterinary Practitioners**

TB testing is, in general, carried out by authorised private veterinary practitioners (PVPs), who are contracted to comply with the terms and conditions set out by the Department for tuberculin testing. PVPs are subject to supervision by the Department. The Department ordinarily pays for herd level TB tests additional to the legal yearly test requirement and where a herd is restricted following an outbreak of TB.

#### **4.2.6. Milk Processors**

Trade in milk is governed by Council Directive 2004/41/EC and by Regulation 2004/853/EC of the European Parliament and Council which establish that milk originating from herds that do not have OTF status must be heat-treated and that milk from animals showing a positive or inconclusive reaction to the tuberculin test must not be used for human consumption. The Department is legally obliged to inform persons to whom milk is supplied of the restriction or de-restriction of a herd.

#### **4.2.7. Valuers**

Valuations of reactor animals are carried out by suitably qualified valuers, who are authorised by the Department, on the basis of current market values and by reference to guidelines drawn up by Department staff. The work of valuers is closely supervised by the Department.

#### **4.2.8. Reactor Collection Service**

Reactors are, in general, transported free of charge from the holding to designated factories for slaughter. This service is operated by the Department on the basis of contracts awarded to private hauliers following a tender procedure. Hauliers are subject to supervision by the Department.

#### **4.2.9. Factories tendering to receive reactors**

Reactor animals (apart from those in feedlots and/or where no compensation is payable to the farmer) are slaughtered by factories selected by the Department on the basis of a weekly tendering arrangement. Prices paid by the factories for reactors are monitored by the Department on a regular basis.

#### 4.3 Description and demarcation of the geographical and administrative areas in which the programme is to be implemented<sup>6</sup>

The programme is operational throughout the 26 counties of Ireland and is implemented by the Department of Agriculture through regional District Veterinary Offices (DVOs). These offices are currently undergoing a rationalisation programme scheduled for completion by the end of 2011 that involves reducing the number of DVOs from 28 to 16. Each DVO has a team of administrative staff, Technical Agricultural Officers and Veterinary Inspectors. A Superintending Veterinary Inspector (SVI) who reports to supervisory veterinary inspectorate oversees the veterinary aspects of the programme. The administrative staff in the DVO report to a Higher Executive Officer in the DVO, who in turn reports to a Regional Assistant Principal Officer (R/AP). The DVOs are managed by two Area Management Teams, consisting of a Senior Supervisory Veterinary Inspector (SSVI), an SVI, a R/AP and an Area Superintendent, covering the North and South of the country. These management teams report to ERAD (Admin) and ERAD (Veterinary) in relation to implementation of the TB eradication programme,



#### 4.4. Description of the measures of the programme<sup>7</sup>:

**4.4.1. Notification of the disease:** In full compliance with Directive 64/432/EEC, Bovine Tuberculosis is a notifiable disease under the Diseases of Animals Act 1966. Under legislation, veterinary surgeons are required to notify the Superintending Veterinary Inspector at the District Veterinary Office of details where, on clinical grounds, tuberculosis is suspected. Keepers who have reason to suspect that the disease may be present in their herds are also obliged to notify the District Veterinary Office.

<sup>6</sup> Describe the name and denomination, the administrative boundaries, and the surface of the administrative and geographical areas in which the programme is to be applied. Illustrate with maps.

<sup>7</sup> A comprehensive description needs to be provided of all measures unless reference can be made to Community legislation. The national legislation in which the measures are laid down is mentioned.

**4.4.2. Target animals and animal population:** All bovine animals in Ireland are included in the programme. There is no category of herd, or individual animal greater than 6 weeks old or animals involved in cultural or sporting events excluded or exempted from tuberculin testing. For trade within Ireland, the current legal requirement is that each animal moving to the open market must have been tested within the previous 12 months and the holding is not under restriction. In this regard, S.I. No. 32 of 2003 provides the current legal basis, which requires cattle to have been tested within this time frame.

With regard to fattening/feedlot herds, a 'Feedlot' herd is a herd that comprises a **'non-breeding' unit which disposes of all cattle direct for slaughter** and fulfils at least one of the following three criteria: (i) the cattle are permanently housed (never on pasture) **or** (ii) there are no contiguous holdings/lands with cattle **or** (iii) the boundaries are walled, double fenced or equivalent so as to prevent any direct contact with cattle on contiguous lands/premises/holdings. Herds on the Feedlot register may or may not have stock throughout the year i.e. a number of feedlots on the register may operate on a seasonal basis only e.g. from October to April for winter-finishing. In common with all other herds in Ireland, herds included on DAFF's 'Feedlot' register are required to be tested at least once yearly. Further, Feedlot herds that finish female cattle may find that an occasional female will have been pregnant when acquired and will give birth. Such herds must have the capability of rearing any calves for life or until tests to restore OTF status have been completed in the event of being restricted as a consequence of TB. In the event that TB is diagnosed in Feedlot herds, they pose a minimal risk of infecting other cattle because of the effective isolation from other herds, If a 'Feedlot' herd is restricted under the TB Order, either by virtue of test reactors or detection of *M. bovis* in a slaughtered animal, a special official supervisory protocol is established to allow the enterprise function as a commercial entity while complying with animal health legislation and practice. This includes a requirement that a herd test must be completed prior to any animals being put out on grass and further tests conducted as determined by the epidemiological profile of the outbreak. Feedlot herds that continue to acquire and finish cattle while restricted are ineligible for compensatory payments for test reactors. When TB is diagnosed, the restriction notice (ER22) specifies conditions with respect to disinfection of premises and equipment and also storage and spreading of manure/slurry. Test reactors must be removed by permit (ER26a) within the timeframe specified (ER30) by the DVO. OTF status will only be restored to a restricted feedlot herd in full compliance with Directive 64/432/EEC.

**4.4.3. Identification of animals and registration of holdings:** All herds are registered as the epidemiological units in accordance with Directive 64/432/EEC. Holdings are registered in accordance with Council Regulation (EC) No 73 of 2009. Ireland has operated a system of herd (epidemiological unit) registration and individual bovine tagging

since the 1950s. The current national system (S.I. No. 77 of 2009 refers) is in accordance with Regulation 1760/2000. Ireland currently continues to maintain an individual animal passport on which the details of the animal's tuberculin tests are recorded as part of the disease control measures in operation. This system is enhanced by the linkage of the Animal Health Computer System (AHCS) with the Animal Identification and Movement system (AIM) at markets and slaughter premises. The most recent test dates for individual animals in the herd are also available to the keeper who has access to his herd profile electronically.

**4.4.4. *Qualifications of animals and herds***<sup>8</sup>: The eradication programme is conducted under the Bovine Tuberculosis (Attestation of the State and General Provisions) Order, 1989 and amendments thereto under the Diseases of Animals Act 1966. The attribution, maintenance, suspension and withdrawal of qualifications are in accordance with Directive 64/432/EEC as amended.

**4.4.5. *Rules on the movement of animals:***

**4.4.5.1 *General rule on movement of animals:*** Bovine animals may not be moved into a herd or from a herd to the open market unless the animal has been tested within the previous 12 months. An animal may only be moved out of or into a herd or accepted for routine slaughter at a registered abattoir if the individual animal is accompanied by its passport or a movement permit issued by an authorised officer of DAFF. All animals moved for slaughter purposes receive an examination in accordance with Regulation 854/2004/EC. Ireland complies fully with EU Directive 64/432/EEC in that it carries out 30-day pre-movement TB testing on all eligible bovines exported to the EU.

Regulation (EC) no 854/2004 of the European Parliament and of the Council laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption provides that animals that are presented to a slaughterhouse for slaughter must as a general rule be slaughtered there. Accordingly, where an animal not tested within the previous 12 months leaves a holding and is presented for slaughter, the animal will be slaughtered. However, appropriate action must be taken at herd level in order to ensure compliance with TB testing rules and to minimise the risk of onward spread of disease to other herds.

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<sup>8</sup> To mention only if applicable.

#### **4.4.5.2. Movement of animals FROM a 'restricted' holding**

Controlled trading rules apply to herds with restricted status (OTF suspended/withdrawn). These herds are risk-categorised on the basis of infection levels and are subject to a customised testing (interpretation and test frequency) regime. In Ireland, animals can only be moved from a restricted herd if an officer, authorised by the Minister under the animal disease legislation, issues a permit allowing such movement. The officer may attach special conditions relating to the movement as considered necessary. The vast majority of permits are for animals moving directly to slaughter. An authorised officer may also issue a movement permit for movement from a restricted holding where the officer is satisfied that the movement is necessary (e.g. for immediate, urgent or necessary veterinary treatment in a veterinary hospital; or to another holding (e.g. feedlot see section 4.4.2) where animal welfare reasons dictate that such movement is necessary to prevent unnecessary suffering (See also rule on movement to fattening herds “feedlots” below) and should not result in the spread of TB to other animals. Such movements are relatively rare and, when allowed, have conditions attached to ensure that the eradication programme is not compromised as a result of the movement. Movement conditions attached to permits cover, bearing in mind the animals involved and the location to which the movement was being permitted, aspects such as isolation of the animal(s) involved, disinfection, transport, restriction of the new holding location, testing requirement and frequency as is considered relevant to the particular circumstances.

**4.4.5.3 Movement of animals INTO a 'restricted'** The general rule is that, animals may not be moved into a restricted holding. However, the following categories of exceptions are provided for:

- Newly established herds
- Introduction of a replacement stock bull(s). Emergency replacement suckler calf (where a calf to a suckler cow dies)
- Following the completion of a clear reactor retest, where the SVI/VI-in-charge of the herd is satisfied that the risk of exposure to the moved-in animals is minimal or movement onto a geographically discrete fragment with separate testing facilities, which the SVI/VI has established is not associated with any current infection on the holding and where the SVI/VI-in-charge of the herd is satisfied that the risk of exposure to the moved-in animals is minimal. The original resident animals must be confined by order onto the infected fragment(s) of the holding.

#### ***4.4.5.4 Movement from herds contiguous to a high risk breakdown and movements of animals disclosing an inconclusive test result***

It is intended for the 2012 TB Programme that in the case of high risk breakdowns, when an initial notification is sent to the farmer advising him/her that a neighbouring herd is infected, if the herd has not been tested within the previous 4 months, the herd status will be suspended, pending DVO assessment of the index (infected) herd. Following the outcome of this assessment, the DVO will advise keepers of contiguous holdings that either the herd status remains suspended until a herd test has been conducted or that the status is restored and no test is required. It is intended that this measure will commence prior to the completion of the 2011 programme. It is also intended for the 2012 TB Programme that any animal that discloses an inconclusive reaction will be prevented from moving for the duration of its lifetime, except to slaughter. It is intended that this measure will commence prior to the completion of the 2011 programme.

#### **4.4.5.5 Pre-movement tests**

Ireland complies fully with EU Directive 64/432/EEC in that it carries out 30-day pre-movement TB testing on all eligible bovines exported to the EU.

Ireland avails of the derogation provided for under point 1.1 (c) of Annex A to the Directive, which does not require pre-movement testing on all domestic movements. Ireland does not operate a network system as referred to in Article 14 of the Directive. For normal trade between herds within Ireland, S.I. No. 32 of 2003 provides the current legal basis. Each animal must have been tested within the previous 12 months and the holding not restricted. Special emphasis is placed on pre-movement testing and keepers are encouraged to acquire pre-movement tested animals as a key husbandry practice to assist herd health protection decided with their veterinary practitioners. It is a legal requirement that the date of the most recent tuberculin test is displayed on an electronic screen when an animal is presented for sale at market. Markets and slaughter premises have access to an on-line system so that the latest test-data available on the Animal Health Computer System (AHCS) is available for electronic display. The date of tuberculin test must, currently, also be entered onto the animal's passport by the testing veterinary practitioner. In this manner, the person acquiring an animal is informed of the interval since the last tuberculin test. In 2009, 259,395 animals were specifically pre-movement tested (private test) for TB at individual animal level and many others would have been tested during a herd level test immediately prior to movement. Research has indicated that the benefits of a nation-wide compulsory pre-movement test do not indicate that this is the most appropriate manner to expend resources.

#### **4.4.6 Tests used and sampling schemes:**

##### ***4.4.6.1 Types of tests used***

The principal test used in the programme is the Single Intradermal Comparative Test as specified in Council Directive 64/432 EEC (as amended).

The Interferon Gamma assay is used under practical field conditions as an adjunct to the tuberculin test in infected herds. The use of the interferon-gamma assay is targeted towards herds classified as high risk where the assay is of particular use if tuberculin testing has failed to speedily resolve the problem or where complete depopulation of the herd would be the only alternative. In all herds experiencing a high risk breakdown classified as a 'H' breakdown, following disclosure of reactors to the tuberculin test, consideration is given to having the remaining animals, particularly breeding animals, blood tested so that further infected animals will be removed. This test makes available a mechanism to remove infection from the herd earlier than on foot of the follow-up tuberculin retest set at a mandatory minimum of 60 days from the removal of the last positive reactor.

Following disclosure of a reactor, a special contiguous testing programme for herds adjoining infected herds is implemented. Experimentally, the use of Gamma Interferon assay was also assessed in these potentially exposed herds. However, while it continues to be used as an adjunct to the skin test in high risk herds, it did not prove suitable to use as an additional screening test ~~even~~ in contiguous herds; this shall be re-evaluated when the expected modified assay is available.

#### **4.4.6.1 Annual "Round" screening test**

Ireland requires each herd, including herds on the 'Feedlot' register, to be tested at least once every 12 months. The Department issues herds for test to private veterinary practitioners throughout the year. Farmers, under cost-sharing agreements, pay the private veterinary practitioners directly to carry out, in general, one test per annum. Reminders are sent out as appropriate to ensure testing is carried out on the prescribed dates. Where necessary, holdings are restricted for non-compliance with the instruction to test under the Round test regime.

#### **4.4.6.2 Consequential/Supplementary testing**

In accordance with Article 5 of Annex B of Directive 64/432, supplementary testing is part of the Irish TB programme. The epidemiological investigation indicates the focus of risk and thus forms the basis for requiring testing (termed special check testing) outside the normal frequency of testing in Officially Free Status herds as proscribed by the Directive. The title of the test (test type) also determines the prioritisation for completion e.g. a round test is the annual test issued in conformity with the Directive for those

herds with risk category D (default) – this is the lowest risk category – and, while it must be completed within the prescribed time frame (i.e. yearly), it has the lowest priority. Thus, **more frequent testing** is conducted in higher risk areas and on higher risk herds e.g.:

- following restoration of status after a high-risk breakdown, herds are placed on a 6-monthly herd-testing regime for the succeeding one and a half years (**Post-de-restriction/ special check test**).
- check testing of herds in problem areas (**special check test**);
- following disclosure of a reactor, a special testing programme for herds assessed as at risk by virtue of being contiguous to infection (**contiguous tests**); tests are additionally conducted on herds with epidemiological links, including traceback and trace-onward indicating a risk of infection (**special check test**).

The effect of the first two tests mentioned above is to ensure that higher risk herds are subject to herd tests at six-monthly intervals for a two year period.

**4.4.7. Vaccines used and vaccination schemes:** As previously detailed there is no TB-vaccine approved and licensed for use in either bovine animals or affected wildlife species.

Over the last 10-years Ireland has been involved in a research project to develop such a vaccine for use in badgers; efficacy of a candidate vaccine has been confirmed at laboratory level and a 3-4 year duration field trial commenced in 2009 (Aznar et al. 2010 Vet Micro – in press) to evaluate efficacy in badgers in a natural environment. If the trial demonstrates sufficient efficacy it is Ireland's intention to progress to a situation where badger vaccination will be incorporated into the programme as a matter of routine.

**4.4.8. Information and assessment on bio-security measures management and infrastructure in place in the holdings involved:** Advice on appropriate bio-security measures is provided by the Department to herdowners via direct advice from the local DVO in the event of a breakdown, leaflets, publicity etc. In addition, payment of compensation is conditional on the disinfection of the holding following a breakdown. Further, the legislation empowers the veterinary inspector to confine animals to or exclude them from particular areas of the holding if the disease epidemiological situation so warrants.

**4.4.9. Measures in case of a positive result<sup>9</sup>:** Under legislation, veterinary surgeons are required to notify the Superintending Veterinary Inspector at the District Veterinary Office of details of all positive and inconclusive test results. Some 98% of test results are communicated electronically from the office of the testing Veterinary Practitioner and the local District Veterinary Office (DVO) of the Department of Agriculture via a link to AHCS.

In all herds where bovine TB reactors are identified, and/or suspect lesions detected at slaughter if not already restricted, the holding is restricted, the status of the herd is suspended (or withdrawn), and reactor animals are removed for slaughter to designated premises. Where reactors are eligible for compensation they will be removed via the reactor collection service, which is organised by the Department. Animals are not permitted to be moved onto or off a restricted holding except under and in accordance with the terms of a movement permit issued by the local DVO. A formal restriction notice is issued in respect of the holding and the restriction can only be lifted by issue of a formal derestriction notice. On receipt of the restriction notice, the farmer is required to surrender all passports in respect of the eligible animals on the holding, if they have not already been surrendered at the time of the test. Slurry and manure storage and premises disinfection requirements are specified on the restriction notice. Further procedures are notified directly to the farmer and appropriate follow-up re-testing takes place until the final clearance test shows the herd to be clear and the status is then restored in accordance with Directive 64/432/EEC. A special contiguous testing programme is conducted for herds adjoining the infected herd (in 2012 it is intended that some such herds will have movement restrictions imposed and that this will commence during the 2011 programme) and tests are additionally conducted on herds with epidemiological links indicating a risk of infection. Following restoration of status after a high risk breakdown (within herd spread evident), herds are placed on a 6-monthly herd-testing regime for the succeeding one and a half years.

Notwithstanding the above, in certain circumstances, as provided for in Directive 64/432/EEC Annex A I 3A(b), where herds disclose a single tuberculin reactor and the herd is classified as low-risk as determined by the epidemiological criteria set down below, the disease status of herds is ‘suspended’ rather than ‘withdrawn’ and the holding is restricted. Criteria for consideration under “singleton” measure are as follows:

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<sup>9</sup> A short description is provided of the measures as regards positive animals (slaughter, destination of carcasses, use or treatment of animal products, the destruction of all products which could transmit the disease or the treatment of such products to avoid any possible contamination, a procedure for the disinfection of infected holdings, the therapeutic or preventive treatment chosen, a procedure for the restocking with healthy animals of holdings which have been depopulated by slaughter and the creation of a surveillance zone around the infected holding,).

- 1) one reactor disclosed at the index test
- 2) the bovine minus avian increase differential must be less than 12 millimetres
- 3) no oedema present at the bovine site.
- 4) the herd must not have had its trading status withdrawn during the 3 years prior to this reactor and
- 5) none of the contiguous herds concurrently undergoing a High risk breakdown

The holding will be de-restricted where the criteria for eligibility continue to be met: TB is not confirmed at post mortem, laboratory examination is negative, the herd has been subjected to SICTT conducted at least 42 days after the removal of the reactor animal and the results of the herd level SICTT are negative.

Where a suspect TB lesion is detected in a carcase from an animal originating in a clear herd, the holding is immediately restricted, the suspect lesion is subjected to laboratory examination and the herd is then subjected to the appropriate testing regime as defined in Council Directive 64/432/EEC, as amended.

Serious consideration is given to herd depopulation, full or partial, where the level of infection in the herd is such that, despite standard and repeated tuberculin testing, the application of the Interferon- $\gamma$  assay, epidemiological assessment and strategic removal of individual animals within the herd, disease continues to spread. The herd or infected group must be subjected to the Interferon- $\gamma$  assay where it has not already been used, and then the suitability for removal of the entire infected group (partial depopulation or in-contact removal) must be assessed. When the assay and/or in-contact removal has failed to resolve the problem, depopulation of the herd must be considered. As a more general rule, cases where more than 30% of the herd has tested positive may lead to depopulation being considered, whereas if 50% of the herd are reactors then depopulation must be considered. Depopulation must also be considered where the epidemiological assessment determines that control of TB in the herd or area will be otherwise compromised such as by an inability to implement satisfactory controls in the herd. Where herd depopulation has been deemed necessary, the SVI determines an appropriate rest period for the land usually of about four months during which the keeper may not restock. Further, unless badgers have been excluded as a cause of the outbreak a badger capture programme will be conducted and a programme of testing undertaken in contiguous herds.

#### **4.4.10. Compensation scheme for owners of slaughtered and killed animals:**

##### **4.4.10.1 Compensation of market value of animals removed as reactors**

It is recognised that where reactors are removed and a herd is restricted for a prolonged period because of disease, a keeper can suffer significant income loss. The programme continues to take account of this income loss and compensation in line with market values is provided for under the On-Farm Market Valuation Scheme, which, prior to their removal, provides for the independent valuation of reactor animals/herds on the basis of current market prices, together with a right of appeal for the keeper. The keeper is paid the carcase-salvage value directly by the slaughter plant and the differential between this salvage value and the market valuation is paid by the Department. As was recommended by the Task Force, compensation reflects individual animal market value and is subject to ceilings.

##### **4.4.10.2 Other compensation arrangements**

In addition to compensation for the slaughter of individual animals, the Department also provides compensation to farmers for other losses, subject to conditions such as co-operation and timely compliance with tests, under the following schemes:

**Depopulation scheme:** In certain circumstances a monthly Depopulation Grant is paid for each animal removed under the depopulation measure while the holding remains under restriction preventing return to normal farming practice. The objective of this payment is to compensate the herdowner for the loss of income during the rest period.

**Income Supplement:** This grant is payable in cases where disease breakdown results in the removal of **more than 10%** of animals in a herd and where depopulation is not deemed appropriate. The objective is to compensate the herdowner for the loss of income arising from the removal of cattle as reactors.

**Hardship Grant:** This grant is designed to alleviate the additional feeding costs of some owner/keepers whose holdings are restricted on foot of a **herd re-test** during the period November to March.

Eligibility for compensation is conditional on compliance with various legislative provisions relating to the eradication programme. A penalty system, which varies with the degree of non-conformance, is in place and is kept under regular review. Farmers contribute towards the cost of compensation in the form of levies collected.

#### **4.4.11. Control on the implementation of the programme and reporting:**

Control and implementation of the programme rests with the Competent Authority at headquarters and regional level. The implementation of the programme takes place in regional District Veterinary Offices. Controls on implementation include scheduling of tests, checks on testing returns, removal of infected animals, epidemiological investigations and all aspects of the programme including evaluation of results, delivery and quality control aspects. To facilitate control and implementation, considerable use is made of computerised systems developed by the Competent Authority specifically for the task, such as the Animal Health Computer System (AHCS) and Herdfinder and, where appropriate, availing of synergies between national and/or EU requirements such as the Animal Identification and Movement system (AIM):

- The AIM (Animal Identification and Movement) is live at markets, export points and slaughterhouses. This system provides information in real time before sale/slaughter on animal status, TB test data and movement/export eligibility, information including an animal's compliance with identification, Animal Health requirements and eligibility for sale/slaughter. Linkage of Veterinary Practitioners electronically to AHCS is designed to facilitate herd profile production (download) immediately preceding testing and prompt upload of test results to the Department of Agriculture local District Veterinary Offices.
- The AHCS and the AIM are interlinked and thus more closely monitor the testing of the national herd, ensure that animals cannot evade the annual or any herd-level test, allow greater analysis of data, trace-onward/back and epidemiological investigation tracking. The Geographic Information System based 'Herd Finder' programme is used to rapidly locate and identify herds that may be, or may have been, at risk of exposure. Additionally, resources have been allocated to continue to provide intensive laboratory analysis, including culturing and strain typing at the Department's Central Veterinary Laboratory.

As well as these IT support tools, the comprehensive testing programme is supported by the Reactor Collection Service organized by the Department, a secure tag identification system and a comprehensive research programme.

## 5. Benefits of the programme<sup>10</sup>:

### Benefits of the programme<sup>11</sup>:

The agriculture, fisheries and food sector continues to make a significant contribution to the Irish economy and the most recent figures available suggests it accounts for 6.33% of GVA at factor cost, 7.5% of employment and 10% of exports. Within agriculture, over 75% of all farmers in Ireland are specifically involved in the production of beef and milk. Given the predominant position of the dairy and beef sector in Irish agriculture and as a generator of very substantial foreign earnings from the export of livestock and livestock products, the projected expenditure of c. € 70m (which includes staff costs) (will insert revised figure when costs confirmed with Angela) will yield significant benefits, in terms of maintaining (i) the overall health of the national herd population and (ii) the ability of Irish farmers and exporters to trade in livestock and livestock products. For maximum efficiency in utilisation of limited national resources, Bovine Tuberculosis testing is predominantly carried out in conjunction with Brucellosis testing of herds.

The programme is aimed at the eradication of Bovine Tuberculosis in Ireland. The existence of Bovine Tuberculosis in the country results in significant income losses to farmers in terms of (i) reduced productivity, restrictions on trade and (ii) testing costs. In addition, the existence of the disease involves considerable public expenditure on disease eradication measures, thereby imposing a heavy burden on the Irish taxpayer. A successful eradication policy – or a significant reduction in the incidence of the disease – would reduce the financial burden arising from these losses/costs to farmers and taxpayers. A recent value for money review of the TB eradication scheme concluded that the public expenditure on the programme has enabled the Irish Livestock industry to maintain and develop exports markets for cattle and beef. In addition, it found 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

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<sup>10</sup> A description is provided of the benefits for farmers and society in general.

<sup>11</sup> A description is provided of the benefits for farmers and society in general.

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. In addition, any improvement in the disease situation will reduce the burden on the national exchequer and, accordingly, the taxpayer.

6. Data on the epidemiological evolution during the last five years<sup>12</sup>

6.1. Evolution of the disease<sup>13</sup>

6.1.1. Data on herds<sup>(a)</sup> (one table per year and per disease/species)

**Year: 2010 - 2006**

**Situation on date: 31/12/2010**

**Disease<sup>(b)</sup>: Tuberculosis**

**Animal species: Bovine**

Region <sup>(c)</sup>	Total number of herds <sup>(d)</sup>	Total number of herds under the programme	Number of herds checked <sup>(e)</sup>	Number of positive herds <sup>(f)</sup>	Number of new positive herds <sup>(g)</sup>	Number of herds depopulated	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100	11 = (6/4)x100
2010	116,815	116,815	114,011	5,520	5,304	28	0.53%	97.6%	4.84%	4.65%
2009	117,287	117,287	115,121	6,065	5,860	21	0.35%	98.2%	5.27%	5.09%
2008	118,030	118,030	116,184	7,042	6,837	25	0.36%	98.4%	6.06%	5.88%
2007	120,652	120,652	116,964	7,235	7,046	21	0.29%	96.9%	6.22%	6.02%
2006	122,392	122,392	118,925	6,736	6,386	21	0.31%	97.2%	5.66%	5.40%

- (a) Herds or flocks or holdings as appropriate.  
 (b) Disease and animal species if necessary.  
 (c) Region as defined in the eradication programme of the Member State.  
 (d) Total number of herds existing in the region including eligible herds and non-eligible herds for the programme.  
 (e) Check means to perform a herd level test under the programme for the respective disease with the purpose of maintaining or upgrading, the health status of the herd. In this column a herd must not be counted twice even if has been checked more than once.  
 (f) Herds with at least one positive animal during the period independent of the number of times the herd has been checked.  
 (g) Herds which status in the previous period was *Unknown, Not free-negative, Free, Officially Free* or *Suspended* and have at least one animal tested positive in this period.

<sup>12</sup> The data on the evolution of the disease are provided according to the tables below where appropriate.

<sup>13</sup> No data to provide in case of rabies.

6.1.2. Data on animals (one table per year and per disease/species)

Year: 2010-2006

Situation on date: 31/12/2010

Disease<sup>(a)</sup>: Tuberculosis

Animal species: Bovine

Region <sup>(b)</sup>	Total number of animals <sup>(c)</sup>	Number of animals <sup>(d)</sup> to be tested under the programme	Number of animals <sup>(d)</sup> tested	Number of animals tested individually <sup>(e)</sup>	Number of positive animals	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered <sup>(f)</sup>	% coverage at animal level	% positive animals Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
2010	5,751,564	5,751,564	5,613,505	5,613,505	20,211	20,211	21,544	97.6%	0.36%
2009	6,025,656	6,025,656	5,914,324	5,914,324	23,805	23,805	25,114	98.2%	0.40%
2008	6,150,163	6,150,163	6,054,387	6,054,387	29,901	29,901	32,345	98.4%	0.49%
2007	6,084,037	6,084,037	6,009,402	6,009,402	27,711	27,711	29,277	98.8	0.46%
2006	6,260,133	6,260,133	6,260,131	6,260,131	24,173	24,173	25,654	99.9%	0.39%
Total									

- (a) Disease and animal species if necessary.  
 (b) Region as defined in the approved eradication programme of the Member State.  
 (c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.  
 (d) Includes animals tested individually or under bulk level scheme.  
 (e) Include only animals tested individually, do not include animals tested by bulk level samples (for instance: milk bulk tank tests).  
 (f) Include all positive animal slaughtered and also the negative animals slaughtered under the programme.

## 6.2. Stratified data on surveillance and laboratory tests

### 6.2.1. Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

**Year: 2010-2006**

**Disease<sup>(a)</sup>: Tuberculosis**

**Animal species/category: Bovine**

**Description of the used serological tests:** Interferon Gamma Assay and anamnestic ELISA in already infected herds, for inconclusive reactor animals and for research purposes.

**Description of the used microbiological or virological tests:** Culture is most often used for NVL (No visible Lesion) samples taken for investigative/confirmatory purposes; for many lymph node lesions a diagnosis is based on histopathological examination alone and culture is only done if there is a difficulty in making a decision based on the histopathological findings. The accuracy of histopathological decisions is quality controlled by conducting random culture confirmations. The Bacteriology/culture procedure is as follows: Samples are decontaminated with 5% oxalic acid before culture. One vial of Bactec 12 B medium, one tube of Stonebrinks medium and one tube of Lowenstein Jensen medium with pyruvate are inoculated and incubated at 37 C for 7 weeks. If Rhodococcus equi infection is suspected a blood agar plate is also inoculated. Isolates are identified based on growth characteristics including cording, AccuProbe and 'in house' PCR identification tests.

#### Description of the other used tests:

Region <sup>(b)</sup>	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested <sup>(c)</sup>	Number of positive samples <sup>(d)</sup>	Number of samples tested <sup>(c)</sup>	Number of positive samples <sup>(d)</sup>	Number of samples tested <sup>(c)</sup>	Number of positive samples <sup>(d)</sup>
2010	Gamma interferon 7,399, Elisa 1977	GIF 2.434 Elisa 140	6,337 bovine, 144 Deer, 930 Badger, 18 Sheep, 16 Goats	2,979 bovine, 125 Deer, 117 Badgers, 5 Sheep, 2 Goats	1,214 Goats SICCT	4
2009	Gamma Interferon 7,063 bovine. 989 goats	1770 Bovine 20 goats	6,318 bovine ,2 Sheep, 105 Goats, 23 Deer, 1,129 Badgers	3,165 Bovine, 0 Sheep, 60 Goats, 15 Deer, 159 Badgers	2,009 Goats SICCT	15
2008	Gamma Interferon, 20,389 Bovine, 31 Sheep, 320 Goats	5,410 Bovine 2 Sheep 80 Goats	6,656 Bovine, 1,754 badgers, 138 deer, 147 goats, 14 sheep, 4 pigs	3,411 Bovine, 399 Badgers, 57 deer, 48 Goats, 3 Sheep	5,000 Goats SICCT	
2007	17,320	~17% this symbol means approximately	7,142	3,924	242 (sheep/deer/misc)	50
2006	10,888	~18%	6,417	3,645	114 (sheep,deer,badger)	48 (culture)
<b>Total</b>						

(a)Disease and animal species if necessary. (b)Region as defined in the approved eradication programme of the Member State. (c) Number of samples tested. (d) Number of positive samples.

### 6.3 Data on infection (one table per year and per disease/species)

**Year: 2010-2006**

**Disease<sup>(a)</sup>: tuberculosis**

**Animal species: Bovine**

We are unsure of what information is required under this heading- Commission Decision 2004/450/EC does not provide any definition for term 'infection'. In seeking to provide an objective measure of infection, we have been guided by Council Directive 64/432/EEC, which provides for the suspension of status of a herd where infection is not confirmed and for a different frequency of testing for the restoration of status in herds that are not confirmed as infected. The data provided below relates to animals and herds where infection has been confirmed – tuberculosis lesions having been identified in skin test reactor cattle or tuberculosis lesions having been confirmed in animals from previously OTF herds. Whilst this is a relatively crude measure of infection, it is objective and relatively comparable. We trust that this will be of value to you.

Region <sup>(b)</sup>	Number of herds infected <sup>(c)</sup>	Number of animals infected
2006	4,942	12,127
2007	5,278	12,480
2008	4,760	12538
2009	3,999	10,537
2010	Awaiting data	

(a) Disease and animal species if necessary.

(b) Region as defined in the eradication programme of the Member State.

(c) Herds or flocks or holdings as appropriate.

**6.4. Data on the status of herds at the end of each year<sup>14</sup>**  
**Year: 2010- 2006**                      **Disease<sup>(a)</sup>: Tuberculosis**

**Animal species: Bovine**

Region <sup>(b)</sup>	Status of herds and animals under the programme <sup>(c)</sup>													
	Total number of herds and animals under the programme		Unknown <sup>(d)</sup>		Not free or not officially free from disease				Free or officially free from disease status suspended <sup>(g)</sup>		Free from disease <sup>(h)</sup>		Officially free from disease <sup>(i)</sup>	
					Last check positive <sup>(e)</sup>		Last check negative <sup>(f)</sup>							
	Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>
2010	116,815	5,7515,64	0	0	1,617	181,699	1,232	123,519	263	27,207	0	0	113,703	5,419,139
2009	117,287	6,025,656	0	0	1,712	186,151	1,510	153,915	292	34,207	0	0	113,773	5,651,382
2008	118,030	6,150,163	0	0	1,974	221,125	1,850	191,328	303	34,046	0	0	113,903	5,703,664
2007	120,652	6,084,037	0	0	2,303	235,513	1,733	166,470	334	33,670	0	0	116,282	5,648,384
2006	122392	6,260,133	0	0	2,124	228,856	1,596	162,854	383	41,053	0	0	118288	5,827,368

- (a) Disease and species if necessary  
(b) Region as defined in the approved eradication programme of the Member State  
(c) At the end of the year  
(d) Unknown: No previous checking results available  
(e) Not free and last check positive: Herd checked with at least one positive result in the latest check  
(f) Not free and last check negative: Herd checked with negative results in the latest check but not being *Free* or *Officially Free*  
(g) Suspended as defined in Community or national legislation for the respective disease at the end of the reporting period.  
(h) Free herd as defined in Community or national legislation for the respective disease.  
(i) Officially free herd as defined in Community or national legislation for the respective disease.

(j) Include animals under the programme in the herds with the referred status (left column).

<sup>14</sup> Only data to provide for bovine tuberculosis, bovine brucellosis, ovine and caprine brucellosis (*B. melitensis*), enzootic bovine leucosis (EBL) and Aujeszky's disease



6.6. Data on wildlife<sup>16</sup>

6.6.1. Estimation of wildlife population

Year: 2010

Method of estimation<sup>(a)</sup>: Capture returns indicate density in the range 1.5-2 animals/sq.Km

Regions <sup>(b)</sup>	Estimation of the population of the concerned wild species			
	Species:	Species:	Species:	Species:
2010	Badger – Meles meles – 105-140,000			
Total				

- (a) The hunting bag is considered to be the standard method of estimation. If other method is used, explain
- (b) Region as defined in the approved eradication programme of the Member State

<sup>16</sup> Data only to provide in case the programme comprises measures as regards wildlife or if the data are epidemiologically relevant for the disease. .

6.6.2. *Monitoring of wildlife (one table per year and per disease/species)*

**Year: 2010 - 2007**

**Disease<sup>(a)</sup>: Tuberculosis**

**Animal species: Badger**

**Description of the used serological tests:**

**Description of the used microbiological or virological tests: Culture of pooled samples taken from each badger for a representative number of badgers captured.**

**Description of the other used tests:**

Region <sup>(b)</sup>	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
2010	930	117 (13%)				
2009	1,129	159 (15%)				
2008	1,754	399 (23%)				
2007	898	242 (27%)				
<b>Total</b>						

(a) Disease and species, if necessary

(b) Region as defined in the approved eradication programme of the Member State

6.6.3. *Data on vaccination or treatment of wildlife*

Year: 2010-2009

Disease<sup>(a)</sup>: Bovine Tuberculosis – M.bovis Animal species: Badger

**Description of the used vaccination, therapeutic or other scheme: NO APPROVED VACCINE CURRENTLY AVAILABLE. Project vaccine still at development and field trial stage. The details in the table relate to the research trial currently underway.**

(a) Disease and species if necessary

Region <sup>(b)</sup>	Square km	Vaccination or treatment programme		
		Number of doses of vaccine or treatment to be administered	Number of campaigns	Total number of doses of vaccine or treatment administered
2010 - – experimental project to determine efficacy	70,000	Experimental projects only	2	
2009 – experimental project to determine efficacy	70,000	Experimental project only	1	
<b>Total</b>				

(b) Region as defined in the approved eradication programme of the Member State – N/A for research trial?

**7. Targets**

**7.1. Targets related to testing (one table for each year of implementation)**

*7.1.1. Targets on diagnostic tests*

**Disease<sup>(a)</sup>: Tuberculosis      Animal species: Bovines, Goats, Badgers**

<b>Region<sup>(b)</sup></b>	<b>Type of the test<sup>(c)</sup></b>	<b>Target population<sup>(d)</sup></b>	<b>Type of sample<sup>(e)</sup></b>	<b>Objective<sup>(f)</sup></b>	<b>Number of planned tests</b>
Ireland	Tuberculin Skin test	All Bovines		Programme implementation	9,000,000
	Gamma Interferon Assay	Bovines	Heparinised Blood	Programme implementation and Research	15,000
	ELISA & Anamnestic ELISA	Bovines	Clotted blood	Programme and Research – focus to detect anergy	1,000
	Multiplex Assay	Bovines, Goats, Badgers	Clotted samples	Programme and Research – test under development	1,000
<b>Total</b>					

- (a) Disease and species if necessary
- (b) Region as defined in the approved eradication programme of the Member State
- (c) Description of the test (for instance SN-test, AB-Elisa, RBT, )
- (d) Specification of the targeted species and the categories of targeted animals (for instance sex, age, breeding animal, slaughter animal,).
- (e) Description of the sample (for instance blood, serum, milk,)
- (f) Description of the objective (for instance qualification, surveillance, confirmation of suspected cases, monitoring of campaigns, seroconversion, control on deleted vaccines, testing of vaccine, control of vaccination,

7.1.2. Targets on testing herds and animals<sup>17</sup>

7.1.2.1 Targets on the testing of herds<sup>(a)</sup>

In our assessment and prediction of targets, we are also guided by what we have learnt from the application of badger control treatments in East Offaly and the Four Area study, where improvement in ‘Herd Period Prevalence’ followed on approximately three years after the initial wildlife treatment. The targets set for 2009 and 2010 reflect this belief and are challenging, yet at the same time are realistic and achievable.

Disease<sup>(b)</sup>: Tuberculosis

Animal species: bovine

Region <sup>(c)</sup>	Total number of herds <sup>(d)</sup>	Total number of herds under the programme	Number of herds expected to be checked <sup>(e)</sup>	Number of expected positive herds <sup>(f)</sup>	Number of expected new positive herds <sup>(g)</sup>	Number of herds expected to be depopulated	% positive herds expected to be depopulated	TARGET INDICATORS		
								Expected % herd coverage	% positive herds Expected period herd prevalence	% new positive herds Expected herd incidence
1	2	3	4	5	6	7	$8 = (7/5) \times 100$	$9 = (4/3) \times 100$	$10 = (5/4) \times 100$	$11 = (6/4) \times 100$
2012	115,500	115,500	114,600	5,100	5,000	24	0.47%			
2011	116,000	116,000	115,100	5,300	5,100	25	0.47%	98.5%	5.2%	5%
2010	116,500	116,500	114,752	6,436	6,212	15	0.23%	98.5%	5.4%	5.2%
2009	117,287	117,287	115,121	6,065	5,860	21	0.35%	98.2%	5.27%	5.09%
Total										

(a) Herds or flocks, or holdings as appropriate.

(b) Disease and animal species if necessary.

(c) Region as defined in the approved eradication programme of the Member State.

(d) Total number of herds existing in the region including eligible herds and non-eligible herds for the programme.

(e) Check means to perform a herd level test under the programme for the respective disease with the purpose of maintaining, upgrading, etc., the health status of the herd. In this column a herd must not be counted twice even if it has been checked more than once.

(f) Herds with at least one positive animal during the period independent of the number of times the herd has been checked.

(g) Herds which status in the previous period was *Unknown, Not free-negative, Free, Officially Free* or *Suspended* and have at least one positive animal in this period.

<sup>17</sup>

Data not to provide in case of rabies.

7.1.2.2. Targets on the testing of animals

Disease<sup>(a)</sup>: Tuberculosis

Animal species: Bovine

Region <sup>(b)</sup>	Total number of animals <sup>(c)</sup>	Number of animals <sup>(d)</sup> under the programme	Number of animals <sup>(d)</sup> expected to be tested	Number of animals to be tested individually <sup>(e)</sup>	Number of expected positive animals	Slaughtering		TARGET INDICATORS	
						Number of animals with positive result expected to be slaughtered or culled	Total number of animals expected to be slaughtered <sup>(f)</sup>	Expected % coverage at animal level	% positive animals (Expected animal prevalence)
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
2012	5,700,000	5,700,000	5,605,500	5,600,500	18,500	18,500	19,500	98.34%	0.33%
2011	5,600,000	5,600,000	5,500,000	5,500,000	19,500	19,500	20,500	98.21%	0.35%
2010 (actual for reference only see previous tables)	6,000,000	6,000,000	5,910,000	5,910,000	26,000???	26,000???	27,800???	98.5%	0.44%
???									
Total									

- (a) Disease and animal species if necessary.
- (b) Region as defined in the approved eradication programme of the Member State.
- (c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.
- (d) Includes animals tested individually or under bulk level scheme.
- (e) Include only animals tested individually, do not include animals tested by bulk level samples (for instance milk bulk tank tests).
- (f) Include all positive animals slaughtered and also the negative animals slaughtered under the programme.

7.2. Targets on qualification of herds and animals<sup>18</sup> (one table for each year of implementation)

Disease<sup>(a)</sup>: Tuberculosis

Animal species: Bovine

Region <sup>(b)</sup>	Total number of herds and animals under the programme		Targets on the status of herds and animals under the programme <sup>(c)</sup>											
			Expected unknown <sup>(d)</sup>		Expected not free or not officially free from disease				Expected free or officially free from disease status suspended <sup>(g)</sup>		Expected free from disease <sup>(h)</sup>		Expected officially free from disease <sup>(i)</sup>	
					Last check positive <sup>(e)</sup>		Last check negative <sup>(f)</sup>							
			Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>	Herds	Animals <sup>(j)</sup>
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2012	115,500	5,700,000	0	0	1480	173,500	1180	118,000	240	24,000	0	0	111,800	5,150,000
2011	116,000	5,600,000	0	0	1,500	175,000	1,200	120,000	250	25,000	0	0	112,000	5,200,000
2010(actual for reference only see previous tables)	116,500	6,000,000	0	0	1,400	150,000	1,350	150,000	350	46,000	0	0	112,900	5,658,000

- (a) Disease and species if necessary  
 (b) Region as defined in the approved eradication programme of the Member State  
 (c) At the end of the year  
 (d) Unknown: No previous checking results available  
 (e) Not free and last check positive: Herd checked with at least one positive result in the latest check  
 (f) Not free and last check negative: Herd checked with negative results in the latest check but not being *Free* or *Officially Free*  
 (g) Suspended as defined for the respective disease in Community or national legislation where appropriate or according national legislation.  
 (h) Free herd as defined for the respective disease where appropriate in Community or national legislation where appropriate or according national legislation  
 (i) Officially free herd as defined for the respective disease where appropriate in Community or national legislation where appropriate or according national legislation  
 (j) Include animals under the programme in the herds with the referred status (left column)

<sup>18</sup> Data to provide only for bovine tuberculosis, bovine brucellosis, ovine and caprine brucellosis (*B. melitensis*), enzootic bovine leucosis (EBL) and Aujeszky's disease

**7.3. Targets on vaccination or treatment (one table for each year of implementation) *Not applicable – NO VACCINATION and NO TREATMENT***

**7.3.1. Targets on vaccination or treatment<sup>19</sup>**

**Disease<sup>(a)</sup>:**

**Animal species:**

Region <sup>(b)</sup>	Total number of herds <sup>(c)</sup> in vaccination or treatment programme	Total number of animals in vaccination or treatment programme	Targets on vaccination or treatment programme					
			Number of herds <sup>(c)</sup> in vaccination or treatment programme	Number of herds <sup>(c)</sup> expected to be vaccinated or treated	Number of animals expected to be vaccinated or treated	Number of doses of vaccine or treatment expected to be administered	Number of adults <sup>(d)</sup> expected to be vaccinated	Number of young <sup>(d)</sup> animals expected to be vaccinated
<b>Total</b>								

- (a) Disease and species if necessary
- (b) Region as defined in the approved eradication programme of the Member State
- (c) Herds or flocks or holdings as appropriate
- (d) Only for Bovine brucellosis and Ovine, Caprine brucellosis (*B. melitensis*) as defined in the programme

<sup>19</sup> Data to provide only if appropriate.

7.3.2. *Targets on vaccination or treatment<sup>20</sup> of wildlife*

**Disease<sup>(a)</sup>:** bovine tuberculosis – M.bovis **Animal species:** Badger – *Meles meles*

Region <sup>(b)</sup>	Square km	Targets on the vaccination or treatment programme		
		Number of doses of vaccine or treatments expected to be administered in the campaign	Expected number of campaigns	Total number of doses of vaccine or treatment expected to be administered
2012	70,000+	~ 300	1	~ 300
2011	70,000+	200-500	3	200-500
2010- Field trials (experimental)–	70,000	200-400	2	200-400
<b>Total</b>				

- (a) Disease and species if necessary
- (b) Region as defined in the approved eradication programme of the Member State

<sup>20</sup> Data to provide only if appropriate.