

**VALUE FOR MONEY REVIEW**

**TEMPORARY VETERINARY**  
**INSPECTOR (MEAT HYGIENE)**

**PROGRAMME**

**Department of Agriculture, Fisheries and Food**

**2009**



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## GLOSSARY OF TERMS

<i>AAI</i>	Assistant Agricultural Inspector
<i>AI</i>	Agricultural Inspector
<i>AP</i>	Assistant Principal Officer
<i>BSE</i>	Bovine Spongiform Encephalopathy is a disease of the nervous system in cattle and is one of a group of diseases known as transmissible spongiform encephalopathies (TSE). Other forms of TSE include scrapie in sheep and Creutzfeldt-Jakob disease (CJD) in humans.
<i>DAFF</i>	Department of Agriculture, Fisheries and Food
<i>FBO</i>	Food Business Operator
<i>FSAI</i>	Food Safety Authority of Ireland
<i>HEO</i>	Higher Executive Officer
<i>OA</i>	Official Auxiliary
<i>OTM</i>	Bovine animal aged over thirty months and so requiring testing for BSE
<i>OV</i>	Official Veterinarian
<i>PO</i>	Principal Officer
<i>SAO</i>	Supervisory Agricultural Officer
<i>SI</i>	Statutory Instrument.
<i>SOP</i>	Standard Operating Procedure
<i>SSVI</i>	Senior Superintending Veterinary Inspector
<i>TA</i>	Trained Auxiliary
<i>TAO</i>	Technical Agricultural Officer
<i>TSE</i>	Transmissible Spongiform Encephalopathy (see BSE above).
<i>TVI</i>	Temporary Veterinary Inspector
<i>VI</i>	Veterinary Inspector
<i>VPHIS</i>	Veterinary Public Health Inspection Service

## PREFACE

**This report is based on a detailed review, in accordance with agreed Terms of Reference, of issues relating to the use of the services of Temporary Veterinary Inspectors in slaughter plants which are under the supervision of the Department of Agriculture, Fisheries and Food.**

**The focus of the review has necessarily been on securing value for money without diminution in service standards.**

**At present TVIs are used extensively to carry out ante and post mortem inspections in slaughter plants. Trained auxiliaries may under law be used to carry out post mortem inspections, but in Ireland the use of auxiliaries is currently confined to poultry plants and for a variety of reasons (not least being the assurance that it gives to customers and consumers) post mortem work in other plants is undertaken by TVIs.**

**Usage of trained auxiliaries (or 'meat inspectors') on post mortem is common in other EU Member States and indeed in non-EU countries; and the core recommendation in the current review is to make a significant move in that direction.**

**The Steering Group for the review was satisfied that there is a strong argument for such a move. It was also acutely aware that this would represent very significant change with potential for major impact on stakeholders including TVIs, meat plants and Department staff; and on existing agreements and operating procedures. The proposed change would also have a potential impact on perception of food safety assurance.**

**As part of the review process, views were sought from stakeholders and responses received are summarised in Appendices 1A-1E of the report. Consideration was given to extending the review to engage in dialogue with stakeholders, but it was agreed that this would go beyond the Terms of Reference.**

**The report is then a stand-alone document. Decisions on implementation or otherwise of the recommendations are a matter for the Department and for discussion and negotiation between the Department and the various parties involved taking account of all relevant issues.**

**Similarly, the Steering Group was aware of the cap on Departmental staffing levels in a scenario where permanent staff replace contract personnel; but saw the impact of this constraint as a matter to be considered by the Department in the context of implementation. The Group considered it would be inappropriate to use the cap as a reason not to recommend cost saving measures assuming that the conditions on which these are based can be secured.**

*October 2009*

## EXECUTIVE SUMMARY

### *1. Background*

Under the Temporary Veterinary Inspector (Meat Hygiene) Programme, private veterinary practitioners are engaged on a contract for service basis to conduct official controls in DAFF approved slaughtering establishments. Expenditure on TVIs was approximately €22.2m out of a total outlay of €40.7m on the Department's meat inspection service in 2006, with some 800 TVIs receiving TVI fees in that year.

The EU regulations which apply in this area (the 'Hygiene Package') require that ante mortem inspections in meat establishments must be carried out by qualified veterinary surgeons. Post mortem inspection does not necessarily have to be done by a veterinarian and may be carried out by trained auxiliaries working under the direct supervision of the official veterinarian. (In addition post mortem inspection may be carried out by suitably trained plant employees under the direct supervision of the official veterinarian in plants that slaughter poultry and lagomorphs and that satisfy specific criteria relating to risk).

At present TVIs are used extensively to carry out ante and post mortem inspections in slaughter plants, and TSE testing of bovines and ovines. Auxiliaries are used only for post mortem inspections in poultry plants.

### *2. Recent developments*

A number of reviews of the TVI programme have been carried out and the Steering Group recognises that in particular the 2003 DAFF review made a very significant impact in terms of reducing costs. That review led to increased flexibility in the scheme leading to savings of approximately €3m pa on the then yearly budget of approx €1m. Between 2003 and 2006 activity and cost levels have been relatively static:

- the number of animals slaughtered (excluding poultry) rose by 2%;
- the number of TVI hours claimed remained very close to the 2003 level.

When backmoney payments made in 2006 are apportioned to the relevant years, the amount paid to TVIs rose by c.9%.

### *3. Effectiveness of current approach*

The Review Steering Group is satisfied that the current approach meets the objective of ensuring that all animals for slaughter are inspected in accordance with regulatory requirements relating to hygiene and food safety. In addition the group is conscious of other benefits of extensive usage of veterinarians, in particular:

- meeting the legislative requirement to have an official veterinarian on site at a slaughter plant while ante and post mortem inspection are ongoing;
- the flexibility of having a local pool of personnel to work on a shift basis at short notice;
- the fact that the veterinary qualification decreases the intensity of supervision required for evaluation that needs to be undertaken by the DAFF OV;
- the contribution veterinary presence makes to public perception of high food safety standards;
- the impact it may have on potential trading partners;
- and the fact that participation in the TVI programme can be an important component of sustainability in small rural veterinary practices.

#### *4. Cost recovery*

Experience indicates that full recovery of costs from the meat industry in respect of DAFF's meat inspection service, including the TVI component, is not feasible in practice while the current cost structure remains. A previous attempt to move in this direction led to the prospect of additional costs being passed to farmers and possibly to consumers and was abandoned. The Group considers that a more practical approach is to reduce costs where possible, thereby increasing the proportion of cost recovered via the fixed fee mechanism.

#### *5. Alternatives to current approach*

The Group considered a number of options under this heading, and these are set out in Section 5 of this report.

- The Group concluded that the option of recommending no change was impractical given the costs of the TVI Scheme combined with the fact that DAFF has invested heavily in the training of technical staff in meat plants as official auxiliaries.
- Privatisation was considered but dropped on the basis that it does not appear to offer a pragmatic solution at this stage in the development of Ireland's meat inspection service.
- The possibility of moving to a system where controls are increasingly driven by evidence of risk was not pursued as current EU regulation does not permit sufficient leeway in that regard.
- The option of using DAFF VIs in place of TVIs to conduct ante mortem inspections in larger plants was examined but was rejected on the basis that when employment costs (including pension, leave entitlements etc.) are added to VIs' salaries, this is not an economic proposition. This position could of course change if the employment status of TVIs was to change as a consequence of current legal proceedings.

The Group agreed instead that the best prospect of increasing value for money at this stage lies in the possibility of using auxiliaries for post mortem inspections. (In excess of 80% of TVI hours are spent on post mortem inspection, including TSE testing).

#### *6. Use of auxiliaries for post mortem inspections*

In addition to basic economic reasons, there are other factors, which lead the Group to believe that there is a significant opportunity for the Department to move in this direction. In particular:

- DAFF has invested approximately €4.34m up to 2007 and an estimated €6m was spent by the end of 2008 in the training of all technical staff in meat plants as auxiliaries;
- and the Group is aware that reviews of technical staffing are underway which may identify staff numbers that could be available for work as auxiliaries.

If the reviews of technical staffing identify staff that could be used as auxiliaries in post mortem inspection, the potential savings for the Department are more significant when allowance is made for the fact that the staff concerned would be on DAFF's payroll in any event; and that ongoing training is being delivered to all technical staff in meat plants (see Appendix 8). These savings are of course dependent on the staff being freely available and their release not impacting on the duties in which they are currently involved.

In round terms it is estimated that if technical staff were reassigned to post mortem inspection in cattle/sheep/pig slaughter plants on the basis of 5 hours per working day on the line (which would not be abnormal by international standards), the saving involved in TVI costs would amount to €1m per 11 staff so assigned.

#### *7. Detailed estimates of savings arising from use of auxiliaries (post mortem)*

Estimation of potential savings is complicated by the fact that typical staffing levels on slaughter lines vary, depending in particular on the species involved.

For the purposes of this review, two methods were used to estimate savings that could arise in different scenarios where official auxiliaries are substituted for TVIs.

The calculations attribute a cost to the use of auxiliaries, based on payment levels applicable in poultry plants at present.

The Group's key recommendation is designed to strike a balance, which will yield significant savings through use of auxiliaries for post mortem inspection while retaining a strong veterinary presence. The latter can be achieved by keeping a TVI on most slaughter lines, or in the case of a few very large plants eventually replacing all TVIs by auxiliaries and assigning an additional DAFF VI to the plant to act as support to the official veterinarian.

Based on the detailed calculations set out in section 6 and related appendices, the maximum potential annual saving arising from implementation of this recommendation is estimated to be between €4.3m - €5.6m.

It is important to emphasise that the estimate represents maximum savings potential. In practice there are logistical restrictions, applying particularly in smaller plants, which would limit these savings. Nonetheless, the bulk of TVI hours are worked in large/medium plants, where the logistics of substitution are more straightforward.

#### *8. Recommendations*

The main recommendation (number 1 in list at Section 8.5 below) is for greater use of official trained auxiliaries on post mortem inspections, on a phased basis.

The Group recommends that, initially, a number of large/medium cattle slaughtering establishments should be selected for pilot application of this recommendation. (Beef plants account for approximately 60% of TVI hours).

Close monitoring of the operation of these pilot programmes should demonstrate how best in practice to achieve effectiveness and efficiency through replacement of TVIs by auxiliaries. The process should then be rolled out to other large/medium cattle plants and to large/medium pig and sheep plants. (Auxiliaries are already employed in poultry plants).

Recognizing that there are benefits to having a veterinary presence on the slaughter line, the Group is of the view that

- in general one TVI should be retained on each slaughter line, unless there is an OV who can be present at all times. Typically this would involve one out of 3.5 positions in bovine slaughter lines, one out of three in the case of pigs and one out of two for sheep;
- in the case of a few very large plants all TVIs could eventually be replaced by auxiliaries and a support DAFF VI could be assigned to the plant instead.

The benefits of substitution of TVIs by auxiliaries would be eroded in plants with lower throughput/irregular hours. The flexibility provided by the TVI scheme is better matched to that scenario and accordingly it is expected that such plants will continue to engage TVIs on a contract for service basis, and the usage of auxiliaries may be quite limited in application.

The Steering Group also makes recommendations (numbers 2 and 3 in list at Section 8.5) in relation to:

- improvements that should be made to the TVI scheme in its current form, covering areas such as engagement, training, conditions of engagement, flexibility of shifts etc.;
- and development of formal performance indicators.

## **1. INTRODUCTION TO THE REVIEW**

### **1.1 Background**

The Comptroller and Auditor General (Amendment) Act 1993, the Strategic Management Initiative and the Public Service Management Act 1997 emphasised the need for increased efficiency and effectiveness in the use of public resources and set the background for the Expenditure Review process. Under this initiative, the Department of Agriculture, Fisheries and Food carries out Value for Money and Policy Reviews on major spending programmes on a periodic basis. Their aim is to:

- (a) assess the objectives, efficiency and effectiveness of the programmes and to identify mechanisms to improve the delivery of specific programmes; and
- (b) identify indicators, which will improve monitoring of the performance of the programmes and of the success in meeting their objectives.

Approximately €40.727 million was spent by DAFF on its meat inspection service in 2006 of which €22.243<sup>1</sup> million was expenditure relating to the cost of TVIs. The cost of the TVI programme has varied between 49% – 55% of the total cost of the meat inspection service in recent years.

### **1.2 Steering Group Membership**

For this review, a Steering Committee comprising the following representatives from the Department of Agriculture, Fisheries and Food (DAFF) and the Public Expenditure Division (PED) of the Department of Finance was established.

- Tom Loftus, PO, Meat Hygiene and Animal By-Products, DAFF.
- Paul McKiernan, AP, Meat Hygiene and Animal By-Products, DAFF.
- David Buckley, AAI, Economics and Planning Division, DAFF.
- James Conway, AAI, Economics and Planning Division, DAFF.
- Brendan Gleeson, PO, Finance Division, DAFF.
- Paula BarryWalsh, SSVI, Veterinary Public Health Inspection Service, DAFF.
- David Nolan, SSVI, Veterinary Public Health Inspection Service, DAFF.
- Shay Fogarty, AP, Meat Policy, DAFF.
- Marie Cuddy, HEO, Meat Policy, DAFF.
- Michael Mackessy, AP, Personnel Division, DAFF.
- Terry Jennings, AP, PED, Department of Finance.

The Steering Committee held its first meeting on February 15<sup>th</sup>, 2007. Terms of Reference for the review were prepared and agreed by the Secretary General of the Department of Agriculture, Fisheries and Food and the Assistant Secretary General of the PED in the Department of Finance. The Steering Committee met on a regular basis through 2007.

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<sup>1</sup> Sum of the base amount of €18.746 million plus €3.497 million in arrears equals €22.243 million.

### 1.3 Terms of Reference

The agreed Terms of Reference were:

1. Identify programme objectives;
2. Examine the current validity of those objectives and their compatibility with the overall strategy of the Department of Agriculture, Fisheries and Food;
3. Define the outputs associated with the programme activity and identify the level and trend of those outputs;
4. Examine the extent that the programme's objectives have been achieved, and comment on the *effectiveness* with which they have been achieved;
5. Identify the level and trend of costs and staffing resources associated with the programme and thus comment on the *efficiency* with which it has achieved its objectives;
6. Evaluate the degree to which the objectives warrant the allocation of public funding on a current and ongoing basis and examine the scope for alternative policy or organisational approaches to achieving these objectives on a more efficient and/or effective basis (e.g. through international comparison);
7. Specify potential future performance indicators that might be used to better monitor the performance of the programme.

### 1.4 Methodology

The Steering Committee utilised primary and secondary data throughout the VFM review process. Primary data was collected from various areas within DAFF including Meat Hygiene and Animal By-Products Division, Veterinary Public Health Inspection Service and Central Fees Unit. Secondary data sources included:

- a) Stakeholders' views. Views were invited from Meat Industry Ireland (MII), the Food Safety Authority of Ireland, Irish Farmers Association, Irish Poultry Processors Association (IPPA), Veterinary Ireland, IMPACT and Veterinary Officers Association (VOA). Replies received from MII, Veterinary Ireland, VOA, IMPACT and IPPA are summarised in Appendices 1A, 1B, 1C, 1D and 1E respectively;
- b) Previous reports on the Meat Inspection Service, details of which are outlined in Appendix 2;
- c) 'Review of Delivery of Official Controls in Approved Meat Premises', UK FSA, 2007;
- d) Report of visit by Steering Group members to Denmark, July 2007 – see Appendix 15.

Before being finalised the draft report was the subject of a quality assessment by Mr. Kealan Flynn of management consulting firm *iwrite*, who is a member of the Independent Panel of Evaluation Experts. The Steering Committee acknowledges Mr. Flynn's contribution.

## **2. TVI (MEAT HYGIENE) PROGRAMME**

### **2.1. Introduction**

The agri-food sector makes a significant contribution to the Irish Economy. In 2006, it accounted for approximately 8.1% of GDP, and total employment in the agri-food sector was 163,400, comprising 109,100 whose principal source of income is agriculture and 54,300 who are employed in the food, drinks and tobacco sector. Agri-food exports exceeded €8 billion in 2006, an increase of 10% on 2005.

Against this background, it is important that appropriate food safety inspection services should be in place. DAFF places huge emphasis on safety and quality of food, with around 2,000 of its 4,180 staff dedicated to maintaining and improving food safety and quality control measures.

In addition to its own staff DAFF engages part-time TVIs on a contract for service basis. The TVI programme is one element of the Department's meat hygiene service, which involves audit, inspection, surveillance and checks on the food business operator who carries out the slaughter and processing of meat products destined for the human food chain.

There is a very clear and important public health dimension to the work involved and the key responsibility is the need to verify the compliance of the food business operator with EU and national hygiene legislation.

There is an obligation on Member States of the European Union to provide official controls in relation to all food business operators, including meat establishments: Article 17 of the general food law Regulation (EC) 178/2002 provides that "*Member states shall enforce food law, and monitor and verify that the relevant requirements of food law are fulfilled by food and feed business operators at all stages of production, processing and distribution*".

Significant change has occurred in recent years with the introduction of a set of new new EU Regulations (known as the Hygiene Package), which specify inter alia how Member States should organise official controls on foods of animal origin. The Hygiene Package was given effect here by the European Communities (Food and Feed Hygiene) Regulations 2005, S.I. 910 of 2005.

### **2.2. Structure of the meat inspection service**

The structure of the Department's Veterinary Public Health Inspection Service (VPHIS) consists of a Deputy Chief Veterinary Officer, two Senior Superintending Veterinary Inspectors (SSVIs), a number of Superintending Veterinary Inspectors (SVIs), including six Regional Superintending Veterinary Inspectors (RSVIs) and 90 Veterinary Inspectors (VIs). Each VI's role is as the Official Veterinarian for the Department in relation to the establishment(s) under his/her supervision.

VIs are based in the larger meat and poultry slaughtering and processing plants and have overall responsibility for:

- a) the provision of ante and post mortem inspections;
- b) controls of structural and operational hygiene standards;
- c) controls of residues;
- d) controls on animal welfare;

- e) certification;
- f) verification of the plant's food safety management system.

Other (non-slaughtering) establishments are visited and inspected regularly by VIs to ensure compliance with health and hygiene regulations.

### **2.3. Specific Objectives of the TVI Programme**

The role of the Department is to carry out official controls to ensure that the processing of meat is in accordance with EU and national legislation and best international practice. There is a requirement to provide a veterinary presence at all times while ante mortem and post mortem inspection is taking place.

Certain of these controls are designated functions performed on behalf of the Department by Temporary Veterinary Inspectors (TVIs), who are private veterinary practitioners assigned on a roster basis to the plants concerned. In addition, Agricultural Officers (AOs) of the Department perform tasks related to the overall supervisory function of the Department. Responsibility for the verification of the food safety management systems operated by the FBO in each meat establishment is the responsibility of the Department's Official Veterinarian, the Veterinary Inspector (VI).

The role of TVIs is to augment and assist DAFF's veterinary presence at approved meat establishments. TVIs carry out ante mortem and post mortem inspections, and ancillary tasks such as TSE sampling.

At ante mortem inspection, duties include assessment of food chain information, assessment of animals presented for slaughter, diagnosis of class A disease and general welfare assessments relating to transportation, conditions in the lairage, and handling through to stunning and bleeding. On the basis of the ante mortem assessment, the animal is deemed fit or unfit for slaughter for human consumption.

Post mortem duties include assessment of suitability of carcasses and offals for human consumption, diagnosis of notifiable and other diseases, assessment of carcass hygiene and to take samples where necessary, such as for TSE in the case of bovines over thirty months of age. On the basis of the post mortem assessment, the animal is deemed fit or unfit for human consumption.

TVIs must adhere to DAFF's Standard Operating Procedures (SOPs) and Veterinary Procedural Notices (VPNs), as outlined in Appendix 3, in the performance of their ante mortem and post mortem duties.

The outcomes of the ante mortem and post mortem inspections assist DAFF in the overall objective of protecting public health from zoonotic diseases.

Appendix 17 contains a flow chart which sets out the checks carried out in a beef plant, from lairage intake to final carcass inspection. The detailed checks typically carried out by a TVI are indicated on the chart.

The specific objectives of the TVI scheme as agreed by the Steering Group are outlined below.

**Table 1: Objectives of the TVI Scheme.**

1. Support the Department in ensuring that animals are inspected ante and post mortem as per legislation.
2. Complement the Department's veterinary presence at slaughter plants in relation to designated tasks.
3. To assist DAFF fulfil its service contract with the Food Safety Authority of Ireland.

#### **2.4. How does the TVI Programme fit in with Current Policy?**

This section examines how the programme fits in with current national and EU policies by assessing its compatibility with the following documents:

- DAFF's Statement of Strategy 2005-2007;
- Agri-Vision 2015 Action Plan;
- Towards 2016;
- National Development Plan 2007-2013;
- Rural Development Plan 2007-2013
- Programme for Government - A Blueprint for Ireland's Future 2007-2012.

Based on the analysis below of issues highlighted in these policy documents, which are relevant to the role of the DAFF's meat inspection service, the Steering Group concluded that the objectives of the TVI programme are compatible with national and EU food safety and meat inspection policy.

##### **❖ *DAFF's Statement of Strategy 2005-2007***

The mission statement of the Department of Agriculture, Fisheries and Food is "*To lead the sustainable development of a competitive consumer-focused agri-food sector and to contribute to a vibrant rural economy and society*".

The Department's Statement of Strategy 2005-2007 lists five high level goals. The first goal relates to the development of agri-food trade in a national and international framework. The second goal relates to ensuring the highest standards of food safety, consumer protection, animal health and welfare and plant health are enforced. Both of these goals are relevant to the operation of the TVI programme.

##### **❖ *Agri Vision 2015 Action Plan***

The Minister for Agriculture and Food launched the 2015 Action Plan in March 2006. It underlines the fact that delivering safe, high-quality, nutritious food, produced in a sustainable manner, to well-informed consumers in high-value markets is the optimum road for the future of the Irish food industry, and therefore for our farmers. It sets out 166 actions that are being or will be taken to fulfil this vision. The first two actions, which relate to food safety, are:

- a) DAFF will enforce food legislation in accordance with the terms of its service contract with the Food Safety Authority of Ireland (FSAI);
- b) DAFF and other agencies involved will put the necessary measures in place to ensure the full implementation of EU Food and Feed legislation, including the EU Hygiene Package.

❖ ***Towards 2016***

Towards 2016 is the Government's ten-year framework Social Partnership Agreement. It reiterates the actions in the 2015 Action Plan and outlines that for the agricultural sector to achieve its future potential "*a competitive agri-food sector providing quality and safe foods on the domestic and international market place*" must be ensured.

❖ ***National Development Plan 2007 – 2013***

The National Development Plan aims to spend approximately €8 billion promoting the continuing modernisation and competitiveness of the farming and food processing sector as well as enhancing the quality of the rural environment. Production of food to the highest possible standards remains a top priority for DAFF which, in co-operation with the FSAI and other relevant government departments and agencies will continue to monitor and inspect services along the lines of the food chain.

❖ ***Rural Development Plan 2007-2013***

Under the Rural Development Plan , the overall objective for the Irish agri-food sector is to develop a competitive, consumer-focused sector, which contributes to a vibrant rural economy, society and environment, and, in particular, Ireland should "*focus on the requirements of the consumer at every stage in the value chain, especially in ensuring the highest standards of food safety*".

Measures taken in relation to improving the competitiveness of the agriculture and food sectors must ensure the highest level of food safety and have regard to the environment and animal welfare.

❖ ***Programme for Government - A Blueprint for Ireland's Future 2007-2012***

The current Programme undertakes (inter alia) to:

- Further exploit the potential of existing animal traceability systems for the marketing and labelling of food products
- In the beef sector, ensure that our high standards of food safety, quality labelling and traceability will be vigorously promoted to provide a competitive advantage against low cost imports
- In the sheepmeat sector, support a Quality Assurance programme, aid promotion and strengthen labelling with a view to ensuring wider and deeper penetration on home and EU markets.

### **3. OBJECTIVES AND OUTPUTS OF THE TVI SCHEME**

#### **3.1. Introduction**

The objectives of the TVI Programme as agreed by the Group are outlined in section 2.3 above. As far as the review group can ascertain, up until now the actual objectives of the programme have not been formally set out. This is not unusual, as the scheme has operated for many years and well before the formal documentation of the objectives of a specific programme was considered routine practice.

Each of the objectives as set out below will now be considered in greater detail in an attempt to evaluate the effectiveness of the programme.

- Support the Department in ensuring that animals are inspected ante and post mortem as per legislation.
- Complement the Department's veterinary presence at slaughter plants in relation to designated tasks.
- Assist DAFF to fulfil its service contract with the Food Safety Authority of Ireland.

#### **3.2. Ante and post mortem inspection**

The requirement for ante and post mortem inspection is laid out in Council Regulation (EC) 854/2004. All animals sent to a slaughter plant must receive ante mortem inspection prior to slaughter. The purpose of this inspection is to ensure their suitability for slaughter. Ante mortem is designated as a specific task of the official veterinarian in the slaughterhouse, and the examination is directed at the detection of diseases affecting animal health and public health, particularly those of zoonotic importance. The welfare of the animal is also taken into consideration at this inspection. On occasion it is necessary to subject animals to a more detailed clinical examination where problems are detected.

Post mortem inspection of the carcass and accompanying offals of all animals deemed suitable for slaughter must be carried out without delay under the supervision of the official veterinarian (OV). Particular attention is paid to the detection of zoonotic and animal health diseases at this inspection.

#### **3.3. Complementing DAFF's veterinary presence at slaughter plants**

The TVI supports the OV in ensuring that DAFF, as competent authority, implements the required official controls relating to public health, animal health and animal welfare in approved slaughtering establishments.

This includes assessing (a) food chain information, (b) hide condition, (c) animal welfare and the segregating of animals and carcasses that require further attention by way of detention or specific sampling.

Where the OV is not present during slaughter, the TVI may act as a temporary OV for the period of the absence and so ensure compliance with Regulation (EC) 854/2004 which requires the continuous presence of an OV during ante and post mortem.

#### **3.4. Assisting DAFF in fulfilling its service contract with the FSAI**

The FSAI's remit in relation to enforcement of food legislation is outlined in the FSAI Act, 1998. This includes the inspection, licensing or registration of establishments, the inspection, sampling and analysis of food, the inspection and analysis of food labelling and the provision of food safety and food hygiene education.

The FSAI manages its enforcement functions through a series of service contracts with official agencies, including DAFF.

### 3.5. Outputs of the TVI programme

Outputs are what a programme produces and they may be goods or services<sup>2</sup>. This Review has identified five outputs from the scheme. The importance, level and trend of each is outlined in the tables below.

#### ❖ *Number of animals ante and post mortem inspected*

The number of animals inspected is the first major output of the TVI Scheme. While TVIs cannot control the number of animals entering a lairage they are responsible for ensuring that the animals that are presented get an ante mortem inspection.

The number of slaughtering days per annum is decided by the FBO based on trade demand.

**Table 2: Ante and Post Mortem Inspections 2002 – 2006**

Year	Cattle	Sheep	Pigs	Poultry	Total
2002	1,658,670	2,903,644	3,011,555	76,267,616	83,841,485
2003	1,733,697	2,789,601	2,809,542	76,940,391	84,273,231
2004	1,724,792	3,228,783	2,706,576	80,425,684	88,085,835
2005	1,606,214	3,279,874	2,618,349	78,346,561	85,850,998
2006	1,691,975	3,148,251	2,618,501	75,010,726	82,469,453
<b>% change 2002 - 2006</b>	<b>+ 2%</b>	<b>+8%</b>	<b>-13%</b>	<b>-2%</b>	<b>-2%</b>

The total number of animals inspected has decreased by approximately 2% from 2002 to 2006 primarily as a result of a decrease in the number of pigs and poultry slaughtered. The number of inspections of cattle and sheep increased by 2% and 8% respectively over the 2002 – 2006 period.

#### ❖ **Number of OTMs Tested/Number of Animals Detected with Suspect TSE**

While the number of BSE suspects detected as a result of active surveillance is decreasing there was a 22% increase in the number of OTM tests as identified in table 3 below.

**Table 3: OTMs Tested/Suspect TSE Cases Detected 2004-2006**

Year	Number of OTMs Tested	Number of Suspect TSE Cases Detected	Proportion of OTMs Tested which were positive
2004	604,971	32	0.0053%
2005	678,657	17	0.0025%
2006	739,982	10	0.0014%
<b>% change 04 - 06</b>	<b>+ 22%</b>	<b>- 69%</b>	<b>- 74%</b>

<sup>2</sup> The Department of Finance Value for Money and Policy Review Initiative Guidance Manual – 7<sup>th</sup> March 2007

❖ *Numbers of Animals Detected with Suspect TB lesions*

All animals are examined for the presence of TB, and additional samples are taken when suspect TB lesions are found. These samples are specially packaged and forwarded to the TB unit at Backweston.

**Table 4: Suspect TB Lesions 2003-2006**

<b>Year</b>	<b>Submissions</b>	<b>Confirmed Positive</b>	<b>% of Submissions Proving Positive</b>
2003	5,139	3,136	61%
2004	4,362	2,800	64%
2005	4,136	2,755	67%
2006	4,680	3,173	68%
% change 03 - 06	- 9%	+ 1%	+ 11%

❖ *Number of Animals Sampled for Residues and Prohibited Substances*

A comprehensive residue monitoring programme is conducted on an annual basis by DAFF under service contract to the FSAI. The total number of samples taken has decreased by 47% over the three-year period 2004 – 2006, in accordance with the National Residue Plan, as prescribed by EU regulation.

**Table 5: Residue/Prohibited Substance Samples 2004-2006**

<b>Year</b>	<b>Number of Samples Taken</b>	<b>Number of Positives Recorded</b>	<b>% Positive</b>
2004	47,873	184	0.38%
2005	43,223	90	0.21%
2006	25,268	48	0.19%
% change 04 - 06	- 47%	- 74%	- 50%

Residue sampling is not a core task of TVIs. It is often done by TAOs and OVs. A further breakdown by species is contained in Appendix 5.

❖ *Number of Animals Deemed Unfit for Human Consumption*

Statistics available for cattle, sheep and pigs are set out in Tables 6-8 below.

**Table 6: Number of Cattle Carcasses Condemned 2004-2006**

<b>Year</b>	<b>Condemned Whole</b>	<b>Condemned Part</b>	<b>Livers Condemned for Fluke</b>
2004	1,830	1,669	468,908
2005	1,890	2,219	456,714
2006	2,441	1,872	529,276
% change 04 - 06	+33%	+12%	+13%

**Table 7: Number of Sheep Carcasses Condemned 2004-2006**

Year	Scrapie Condemnations	Condemned Whole	Condemned Part	Livers Condemned for Fluke
2004	3,143	3,070	1,439	679,698
2005	2,465	4,716	2,951	1,008,489
2006	1,993	2,552	2,303	968,156
% change 04 - 06	-37%	-17%	+60%	+42%

**Table 8: Number of Pig Carcasses Condemned 2006**

Year	Condemned Whole	Condemned Part
2006	8928	17682

### 3.6. Effectiveness of TVI programme

The Review Steering Group is satisfied based on analysis of the outputs that the current approach is effective in meeting its objectives as set out at 2.3. The Group is also conscious of additional benefits of extensive usage of veterinarians, in particular:

- meeting the legislative requirement to have an official veterinarian on site at a slaughter plant while ante and post mortem inspection are ongoing;
- the flexibility of having a local pool of personnel to work on a shift basis at short notice;
- the fact that the veterinary qualification decreases the intensity of supervision required for evaluation that needs to be undertaken by the DAFF OV;
- the contribution veterinary presence makes to public perception of high food safety standards;
- the impact it may have on potential trading partners;
- and the fact that participation in the TVI programme can be an important component of sustainability in small rural veterinary practices.

Comments received from Veterinary Ireland and the Veterinary Officers Association in this regard are also relevant - see Appendices 1A and 1C.

## **4. EFFICIENCY OF THE TVI PROGRAMME**

### **4.1 Introduction**

Efficiency is a comparison of inputs to outputs and can be viewed in two different ways:

- a) Whether the same level of outputs could be achieved with a lower quantity of inputs;
- b) Whether a higher quality or quantity of outputs can be produced from a fixed level of inputs.

The input mix is especially important in this VFM Review because of the range of grades involved i.e. VIs, SAOs, TAOs and TVIs. While issues of efficiency and economy are often studied together, for the purpose of this review economy will be dealt with separately.

Economy is essentially concerned with the price of inputs and is therefore especially relevant here because of the significant difference in the hourly cost of the different grades. The hourly rates for each grade are set out in Appendix 6.

The main inputs of the TVI programme are:

- 1) Financial:– TVI fees were €22.243<sup>1</sup> million in 2006, including arrears;
- 2) Personnel:– during 2006 DAFF used the services of some 800 TVIs.

The six outputs of the TVI Scheme were discussed in chapter 3 and the relationship of inputs to outputs is also set out in the programme logic model in Appendix 4.

### **4.2 TVI Scheme/Meat Inspection Service Costs**

The annual cost of the DAFF meat inspection service over the years 2003-2006 is shown in table 9 below.

**Table 9: Overall Cost and Income of Meat Inspection Service (MIS) 2003 – 2006**

<b>Year</b>	<b>MIS Income (€m)</b>	<b>MIS Cost (€m)*</b>	<b>Cost Recovery %</b>
2003	€7.900	€6.360	49.23%
2004	€5.776	€2.832	48.05%
2005	€7.627	€6.339	48.50%
2006	€5.373	€0.727	37.75%
% change 2003 - 2006	- 14%	+12%	

*\*The Meat Inspection Service figures are estimates and comprise the cost of TVIs, VIs and AOs only.*

The cost of TVIs forms a major component of the overall cost of the service. Over the 2003 – 2006 period the cost of TVIs as a percentage of the total cost of the service varied from 49% to 55% (when payment of arrears in 2006 is included).

<sup>1</sup> Sum of the base amount of €8.746 million plus €3.497 million in arrears equals €22.243 million.

**Table 10: TVI Expenditure, 2003 – 2006.**

Year	TVI Expenditure	MIS Cost	TVI Expenditure as a % of MIS
2003	€18.133 m	€6.360m	50%
2004	€17.777 m	€2.832m	54%
2005	€17.939 m	€6.339m	49%
2006	€22.243m*	€40.727m*	55%
<b>% change 2003 - 2006</b>	+ 23%	+12%	

\*The 2006 figures include €3.497m in respect of arrears payments to TVIs

EU regulation provides for the recovery by a competent authority of the cost of providing a meat hygiene inspection service at approved meat plants. Recovery may comprise

1. a system of standard unit charges as applied in this country (which may or may not recover the full cost of the service) or
2. recovery of the actual cost of the service. This can be through a standard slaughter charge per animal or on an individual plant basis.

Fees are received from slaughter plants, cutting plants, coldstores and products plants, for meat inspection work and also in respect of overtime worked in these areas.

The Exchequer in effect currently funds over half the cost of the service because the fees that are charged to meat establishments represent less than half the actual cost of the service on average.

The Hygiene Package stipulates that standard fees can be charged for different species, up to full cost recovery. Minimum levels of fees are set down. The current legislative basis for these charges is Regulation (EC) 882/2004. The Central Fees Unit of DAFF is responsible for the collection of meat inspection fees and charges, which are outlined in appendix 7.

Experience indicates that full recovery of costs from the meat industry in respect of DAFF's meat inspection service, including the TVI component, is not feasible in practice while the current cost structure remains. A previous attempt to move in this direction led to the prospect of additional costs being passed to farmers and was abandoned. The Group considers that a more practical approach is to reduce costs where possible, thereby increasing the proportion of cost recovered via the fixed fee mechanism.

#### **4.3. Efficiency of TVI Expenditure.**

This section compares the most important output of the TVI Scheme (number of animals inspected/slaughtered) with costs to give a broad indication of how efficiently this expenditure is being converted into outputs/outcomes.

Table 11 compares TVI expenditure and time with the number of animals (excluding poultry) slaughtered during the period 2003-2006.

**Table 11: Overall Cost/Time per Animal Slaughtered (excl poultry), 2003 – 2006**

Year	Total Number of Animals Slaughtered (excl poultry)	TVI Expenditure (excl poultry)	Average Cost per animal	Number of TVI Hours Claimed (excl poultry)	Average number of seconds per animal
2003	7,332,840	€16.653 m	€2.27	237,876*	116.8
2004	7,660,151	€16.235 m	2.12	234,473	110.2
2005	7,504,437	€16.485 m	2.20	228,859	109.8
2006	7,458,727	€20.171 m	2.70	236,807	114.3
<b>% change 03 - 06</b>	<b>+ 2%</b>	<b>+ 21%**</b>	<b>+19%***</b>	<b>-0.4%</b>	<b>-2.1%</b>

\*In 2003 TVIs claimed for 79,292 shifts of an assumed length of 3 hours or 237,876 hours.

\*\*When allowance is made for arrears paid in 2006 the increase is estimated at +9%

\*\*\* When allowance is made for arrears paid in 2006 the increase is estimated at +7%

Tables 12-15 give a breakdown by species of the cost/time per animal slaughtered in single species plants.

**Table 12: Overall Cost and Time per Animal Slaughtered in Cattle Only Plants, 2003 – 2006**

Year	Total Number of Cattle Slaughtered per annum	TVI Expenditure	Average Cost per animal	Number of TVI Hours Claimed	Average Number of Seconds per animal
2003	1,161,669	€7.102 m	€6.11	108,675*	336.8
2004	1,066,269	€6.612 m	€6.20	98,225	331.6
2005	1,137,425	€7.301 m	€6.42	105,435	333.7
2006	1,287,690	€8.892 m	€6.91	116,012	324.3
<b>% change 03 - 06</b>	<b>+ 10%</b>	<b>+ 25%</b>	<b>+13%</b>	<b>+ 7%</b>	<b>- 4%</b>

\*In 2003 TVIs claimed for 36,225 shifts of an assumed length of 3 hours or 108,675 hours.

**Table 13: Overall Cost/Time per Animal Slaughtered in Pig Only Plants, 2003-2006**

Year	Total Number of Pigs Slaughtered per annum	TVI Expenditure	Average Cost per animal	Number of TVI Hours Claimed	Average Number of Seconds per animal
2003	2,017,478	€2.507 m	€1.24	38,364*	68.5
2004	2,146,754	€2.427 m	€1.13	36,062	60.5
2005	2,429,353	€2.942 m	€1.21	42,490	63.0
2006	2,387,505	€3.242 m	€1.36	42,341	63.8
<b>% change 03 - 06</b>	<b>+ 18%</b>	<b>+ 29%</b>	<b>+ 10%</b>	<b>+ 10%</b>	<b>- 7%</b>

\*In 2003 TVIs claimed for 12,788 shifts of an assumed length of 3 hours or 38,364 hours.

**Table 14: Cost/Time per Animal Slaughtered in Sheep Only Plants, 2004–2006**

Year	Total Number of Sheep Slaughtered per annum	TVI Expenditure	Average Cost per animal	Number of TVI Hours Claimed	Average Number of Seconds per animal
2004	1,358,226	€1.031 m	€0.76	15,321	40.6
2005	1,468,166	€1.049 m	€0.71	15,155	37.2
2006	1,356,624	€1.183 m	€0.87	15,383	40.8
<b>% change 04 - 06</b>	<b>- 0.1%</b>	<b>+ 15%</b>	<b>+ 15%</b>	<b>+ 0.4%</b>	<b>+ 0.5%</b>

**Table 15: Cost/Time per Animal Slaughtered in Poultry Only Plants, 2003 – 2006**

Year	Total Number of Poultry Slaughtered per annum	TVI Expenditure	Average Cost per animal	Number of TVI Hours Claimed	Average Number of Seconds per animal
2003	76,940,391	€1.479 m	€0.02	22,638*	1.1
2004	80,425,684	€1.542 m	€0.02	22,904	1.0
2005	78,346,561	€1.454 m	€0.02	20,998	1.0
2006	75,010,726	€2.071 m**	€0.03**	27,037	1.3
<b>% change 03 - 06</b>	<b>- 3%</b>	<b>+ 40%**</b>	<b>+ 50%**</b>	<b>+ 19%</b>	<b>+ 18%</b>

\*In 2003 TVIs claimed for 7,546 shifts of an assumed length of 3 hours or 22,638 hours.

\*\*Cost increase due to introduction of in-plant TVI ante mortem inspection

Based on the analysis in Tables 11-15, and when allowance is made for pay increases and the introduction of cost-increasing requirements on the poultry side, the Group concluded that in recent years there has been some improvement in the efficiency of the TVI programme in relation to the delivery of its major output.

#### 4.4. Economy

The issue of economy is crucial to any expenditure review. Economy is concerned with the cost of inputs to the scheme and involves procuring resources at the lowest cost consistent with desired quality<sup>3</sup>.

Under the hygiene legislation, DAFF could employ its own VIs to conduct ante mortem inspections and employ trained official auxiliaries<sup>4</sup> to conduct post mortem inspections (under the direct supervision of the OV, who would also be responsible for the evaluation of the auxiliaries).

The Group has carefully calculated the full hourly costs for the personnel involved, and the underlying calculations are set out in Appendix 6.

When these hourly costs are expressed in ratio terms a TVI is 2.2 times more expensive than a TAO and 1.75 times more expensive than a SAO.

**Table 16: Relative Costs of TVIs, VIs, SAOs and TAOs (2006 levels)**

VI	TVI	SAO	TAO
€80.56	€76.50	€43.64	€34.81
2.3	2.2	1.3	1.0

Based on a comparison of hourly costs, and given that, on average, over 257,000 TVI hours have been claimed annually over the period 2004 – 2006, it appears there is significant potential for cost reduction in substituting DAFF technical staff for TVIs where permissible and practical. This issue is considered along with other options in Section 5 below.

<sup>3</sup> [http://audgen.gov.ie/documents/vfmreports/56\\_ImprovingPerformance.pdf](http://audgen.gov.ie/documents/vfmreports/56_ImprovingPerformance.pdf).

<sup>4</sup> All calculations in this Review concerned with the introduction of trained auxiliaries are based on an SAO hourly cost of €43.64. Trained auxiliaries already operate at SAO level within Poultry Slaughterhouses. However of the 250 technical staff presently receiving training, approximately 67% are TAOs. Where greater use of TAOs as trained auxiliaries occurs, potential savings should be larger due to the lower hourly cost of €34.81 for TAO's. See Appendix 6 for full calculations of hourly costs.

## **5. ALTERNATIVE APPROACHES CONSIDERED**

### **5.1. Introduction**

The Steering Group is satisfied that public funding must be allocated to this programme on an ongoing basis, as the programme objectives are based on legal requirements.

This Section outlines the alternative approaches identified and investigated by the Group, through which the objectives of the TVI Programme as stated in Sections 2 and 3 might be better achieved.

### **5.2 'No change' option**

The Steering Group is satisfied that the current approach is effective in meeting its objectives as set out at 2.3 above. The Group is also conscious of additional benefits of extensive usage of veterinarians, in particular the contribution this makes to public/market perception of high food safety standards.

It can also be said that in recent years there has been some improvement over time in the efficiency of the TVI programme in relation to the delivery of its major outputs.

However as outlined at 4.4 the current usage of TVIs is expensive.

The Group agreed that recommending no change was impractical given in particular the high relative costs of the TVI Scheme combined with the fact that DAFF has invested heavily in the training of technical staff in meat plants as auxiliaries.

### **5.3. Improvements to present TVI system**

The TVI Programme has been in place for many years. Over that time particular issues have been identified and the Steering Group considers that some modifications would improve the operation of the present TVI system. The Group agreed that the following proposals should be recommended:

- a) Improve the TVI engagement process. It is considered that the current process needs to be strengthened so that DAFF can be more certain of the competence and suitability of applicants for TVI panels;
- b) Formalise training provision. Induction training, health and safety training and ongoing professional development must be provided for, otherwise the quality of the service provided may suffer;
- c) TVIs should be required to sign a Conflict of Interest Declaration to comply with Article 4.2 (b) of Regulation (EC) No. 882/2004. This does not mean that TVIs with a conflict of interest will not be engaged, rather that DAFF should be aware of any such conflict so that management decisions can be better informed;
- d) The 2003 review of the TVI programme introduced significant flexibility in shift lengths. The current system can be improved if shifts of 2.75, 3.25 and 3.75 hours are included;
- e) TVIs over 65 should be required to provide an annual medical certificate. 151 or 19% of the 800 TVIs whose services were used in 2006 were over 65 years of age. It is important that their fitness for the specific tasks of ante/post mortem inspection in an industrial environment should not be in doubt;
- f) Attendance of TVIs is recorded manually at present. This is not best practice. Attendance should be verified by recently introduced electronic swipe cards and payment based on this verification;
- g) Conditions of engagement are not sufficiently clear at present. Documentation should be provided to TVIs which clearly outlines the terms and conditions of their engagement, their responsibilities in such

engagement, and which sets down unambiguous disciplinary procedures in the event of disputes; and

- h) The management of TVI panels needs to be improved. A current requirement is that allocation of shifts should be on an equitable basis. Management should also be allowed take account of the availability of TVIs on a regular and ongoing basis.

#### **5.4. Use of Plant Personnel**

The Hygiene Package requires that ante mortem inspections in a meat establishment must be carried out by a veterinary surgeon.

However post mortem inspection does not necessarily have to be done by a veterinarian and may be carried out by trained auxiliaries working under the direct supervision of the official veterinarian.

In addition post mortem inspection may be carried out by suitably trained plant employees under the direct supervision of the official veterinarian in plants that slaughter poultry and lagomorphs and that satisfy specific criteria relating to risk.

While there are no DAFF approved establishments that slaughter lagomorphs, poultry is a significant sector of the Irish meat industry with over 75 million birds slaughtered in 2006. Overall approximately 27,191 TVI hours or c.€m was spent on TVI fees in poultry plants in 2006.

The potential for significant savings from the use of slaughterhouse staff in post mortem inspections is however very limited for three reasons:

- a) Only 12 plants under DAFF supervision were slaughtering poultry in 2006 and they accounted for approximately 10% of total TVI costs. In addition it is estimated that approximately half of the poultry TVI hours claimed in 2006 were for ante mortem inspection work and therefore are required to be conducted by a veterinarian;
- b) The poultry sector already uses official auxiliaries for post mortem;
- c) The use of slaughterhouse staff must be proposed by the FBO and can only occur where stringent criteria are met.

In the circumstances the Group did not examine this option further.

#### **5.5. Risk-based DAFF Veterinary Supervision**

Under the Hygiene Package responsibility for food safety assurance rests with the FBO and official controls should be risk-based. Regulation (EC) 882/2004 stipulates the obligations of Member States to carry out official controls to verify compliance of FBOs with the requirements of the food and feed regulations. Official controls should be carried out regularly, on a risk basis with appropriate frequency; and should utilise approaches such as monitoring, surveillance, verification, audit, inspection, sampling, and analysis.

However current regulation is also very prescriptive in relation to specific checks which must be carried out as part of slaughterhouse inspections.

Following its 'Review of Delivery of Official Controls in Approved Meat Premises', the UK FSA in July 2007 endorsed the principle that meat hygiene regulation should be aligned more closely with the regulation of the rest of the food chain, adopting a more risk and evidence-based approach. This involves working to change the current EU regulatory position. In the same vein, Meat Industry Ireland has urged DAFF to 'actively promote a rapid move to genuine risk-based meat inspection, by pursuing this agenda at EU level and in Codex Alimentarius'.

The Steering Group believes that in the longer term it is likely that controls will increasingly be driven by evidence of risk, so that food business operators with a good track record will benefit from 'light touch' controls. For the moment however consideration of this option is limited by the prescriptive nature of current regulation.

## **5.6. Privatisation**

Literature review indicates the debate on privatisation of meat inspection services has taken place in a number of countries, notably Australia, Canada and the UK.

In general the argument for privatisation is that it may drive down costs and ultimately the price to the consumer, the argument against is that it might reduce independence of the inspection service and may fragment controls.

Depending on the way in which it would be implemented, privatisation could transfer responsibility for the recruitment and remuneration of meat inspectors to third parties. Rostering and conditions of engagement would no longer be a matter for DAFF. However inspectors would still require approval by the Department and continue to report to and be supervised by the OV.

DAFF initiated discussions with interested parties during 2003 to consider the possibility of having the TVI element of the meat inspection service privatised.

Veterinary Ireland representing the bulk of the TVIs was strongly opposed to privatisation and indicated they were instead prepared to discuss a more flexible system of TVI shifts. The 2003 review proceeded on that basis and introduced a more flexible shift regime, leading to a reduction in costs.

The Group notes that the State in effect currently funds over half the cost of the service because the fees that are charged to meat establishments represent less than half the actual cost of the service on average. Because of that it is unlikely that privatisation would reduce costs to industry/consumers in the medium term.

The Group also considers that the independence of the current meat inspection service contributes significantly to public/market perception of high food safety standards. Privatisation could bring that independence into question, which in turn could raise issues relating to acceptability in some markets.

Privatisation is not likely to appeal to the meat industry given that the cost of meat inspection would then fall directly on the food business operator rather than DAFF.

It is likely (as in 2003) that TVIs and Veterinary Ireland would also have reservations about the change in contractual arrangements for its members, assuming they continued to be engaged as meat inspectors.

Farming organisations would be concerned if such arrangements might lead to an increase in the costs of having their animals slaughtered.

On balance the Group considers that while privatisation may be an option at some future point in the development of Ireland's meat inspection service, it does not offer a pragmatic solution at this stage.

### **5.7 Use of DAFF VIs in Ante Mortem Inspection**

The option of routinely using DAFF VIs in place of TVIs to conduct ante mortem inspections was examined but was rejected on the basis that when employment costs (including pension, leave entitlements etc.) are added to VIs' salaries, the saving as compared with TVI rates is insignificant. This position could of course change if the employment status of TVIs was to change as a consequence of current legal proceedings.

The Group does however recommend that in a few very large plants, an additional DAFF VI should be assigned to act (instead of a TVI) as support to the official veterinarian. This measure can be justified by additional savings arising, by virtue of the fact that the VI could supervise two slaughter lines and/or spend some time on ante as well as post mortem inspection. An example is given in the case study at 6.6 below.

### **5.8. Use of Trained Auxiliaries**

The Group agreed that the best prospect of increasing value for money at this stage lies in the possibility of using auxiliaries for post mortem inspections. (In excess of 80% of TVI hours are spent on post mortem inspection, including TSE sampling).

The Hygiene Package, in Regulation (EC) 854/2004, allows the competent authority to appoint official auxiliaries under the responsibility of the official veterinarian to carry out post mortem inspections. Presently all post mortem inspections in Ireland with the exception of an element of post mortem in poultry slaughterhouses are carried out by TVIs.

The position in this regard varies across other EU member states, but greater usage of auxiliaries is common. For instance in Denmark, which members of the Steering Group visited (see Appendix 15), the majority of post mortem inspections are carried out by trained auxiliaries under permanent OV supervision, with TVIs only used in times of staff shortages such as holidays and sickness.

In addition to basic economic reasons, there are other factors which lead the Group to believe that there is a significant opportunity for the Department to move in this direction.

In particular, DAFF has invested approximately €4.34m up to 2007 and an estimated €6m by the end of 2008 in the training of all 250+ technical staff in meat plants as auxiliaries (see Appendix 8). The Group understands that additional costs will arise for practical training.

The Group is also aware that reviews of technical staffing are underway which may identify staff numbers that could be available for work as auxiliaries. The availability of such staff from within the existing complement would augment savings arising from the use of auxiliaries.

In round terms it is estimated that if technical staff were reassigned to post mortem inspection in cattle/sheep/pig slaughter plants on the basis of 5 hours per working day on the slaughter line (which would not be abnormal by international standards), the annual saving involved in TVI costs would amount to €1m per 11 staff so assigned.

The use of trained auxiliaries in Ireland is not new and has operated for a number of years in poultry establishments. The greater use of trained auxiliaries in species other

than poultry should ensure that DAFF realises value for the multi-million investment in the training of technical staff in meat plants.

### **5.9 Substitution scenarios**

A variety of scenarios involving different levels of substitution of TAs for TVIs are costed in Appendices 9 and 10. These range from minimal substitution up to substitution of all TVIs working on post mortem inspection on slaughter lines. The possibility of engaging additional veterinary support by having either a support DAFF VI or TVI assigned to each line is examined in tandem with this analysis.

Having considered a wide range of permutations, and assuming the current usage of auxiliaries in poultry plants will continue to be rolled out, the Group decided to focus on two options in particular, i.e.

- Option 1: Full replacement of post mortem TVIs by auxiliaries in cattle/pig/sheep plants;
- Option 2: Substitution of auxiliaries up to the point where one TVI is retained on each slaughter line.

Based on the detailed calculations set out in Appendices 6 and 9 –12, the maximum annual potential saving (at 2006 cost levels) arising from these options is estimated to be as follows:

- in the range ~~€~~6.2m-~~€~~8.2m for Option 1;
- between ~~€~~4.3m-~~€~~5.6m for Option 2.

It is important to emphasise that the estimates represent maximum savings potential. In practice there are logistical restrictions, applying particularly in smaller plants, which would limit these savings. Nonetheless, the bulk of TVI hours are worked in large/medium plants, where the logistics of substitution are more straightforward.

Having examined the matter closely the Group is of the view that Option 1 is not appropriate or practical. It would reduce veterinary presence and the benefits arising therefrom by too great an extent. It would also impose additional pressures on OVs, because of the need to supervise auxiliaries and the loss of a part time OV (the TVI), which in turn would lead to costs not factored in to the savings estimates above.

The Steering Group is of the view that in general Option 2 strikes the best balance between retention of veterinary presence, the capacity to meet regulatory requirements and meaningful reduction of the overall cost of the meat inspection service. (In the case of a few very large plants the Group recommends eventually replacing all post mortem TVIs by auxiliaries and assigning an additional DAFF VI to the plant to act as support to the OV).

The Group considers that greater use of trained auxiliaries in the recommended manner will allow for the continued delivery of a high quality meat inspection service at a considerably reduced cost.

Detailed costings/savings for the Group's recommended approach are set out in Section 6 and related appendices.

## **6. USE OF TRAINED AUXILIARIES –ESTIMATED COSTS/SAVINGS**

### **6.1. Introduction**

Estimation of costs/potential savings arising from use of auxiliaries on post mortem inspection is complicated by the fact that typical staffing levels on slaughter lines vary, depending in particular on the species involved.

For the purposes of this review, two methods (analysis at macro and micro levels) were used to estimate savings that could arise in different scenarios where official auxiliaries are substituted for TVIs.

The calculations attribute a cost to the use of auxiliaries, based on payment levels applicable in poultry plants at present. However as noted above if the current reviews of technical staffing identify numbers of staff that could be used as auxiliaries, the potential savings for the Department would be enhanced when allowance is made for the fact that the staff concerned would be on DAFF's payroll in any event.

The tables which follow focus on a comparison between the costs of the present system (based on 2006 figures) and the Steering Group's generally recommended option i.e. substitution of auxiliaries up to the point where one TVI is retained on each slaughter line. (It is assumed that the current usage of auxiliaries in poultry plants will continue to be rolled out).

Based on the detailed calculations set out below and in Appendices 6 and 9-12, the maximum annual potential saving (based on 2006 figures) arising from implementation of the Group's recommended option is estimated to be in the range €4.3m-€5.6m.

The estimate represents maximum savings potential. In practice there are logistical restrictions, applying particularly in smaller plants, which would limit these savings. Nonetheless, the bulk of TVI hours are worked in large/medium plants, where the logistics of substitution are more straightforward.

### **6.2. Macro Analysis of Post Mortem Inspection Costs**

Using this approach, the estimated cost (at 2006 levels) of providing the present TVI programme for post mortem inspections is €10.9m in single species plants and approximately €4.4m across all plants (i.e. including multi species plants. Appendix 16 provides details of the numbers of single species and multi species plants).

On this basis of estimation, the Group's preferred solution could deliver potential savings of €4.3m across all plants.

Further background on these figures is presented in tables 17 and 18 below.

**Table 17: Costings of Post Mortem Scenarios (Single Species Plants Only)**

Options	Cost of PM TVIs p.a.	Overall Cost of PM p.a.	Potential Savings in TVIs p.a.	Potential Saving <sup>7</sup> in providing PM Service p.a.
Present System	€10.941 m <sup>6</sup>	€10.941 m <sup>6</sup>	€0 m	€0 m
Recommended Option <sup>5</sup>	€3.170 m	€7.603 m	€7.771 m	€3.338 m

**Table 18: Costings of Post Mortem Scenarios (All Plants)**

Options	Cost of PM TVIs p.a.	Overall Cost of PM p.a.	Potential Savings in TVIs p.a.	Potential Saving <sup>7</sup> in providing PM Service p.a.
Present System	€14.391 m <sup>6</sup>	€14.391 m <sup>6</sup>	€0 m	€0 m
Recommended Option <sup>5</sup>	€4.388 m	€10.093 m	€10.003 m	€4.298 m

A significant proportion of the potential savings would arise in beef establishments, for two main reasons:

- a) Almost 60% of all claimed TVI hours is for work conducted in beef establishments. In 2006 over 152,000 TVI hours out of a total of 263,844 TVI hours was for hours undertaken in beef plants.
- b) As Appendix 12 identifies there can be up to 4.5 TVIs at a time on duty in a beef slaughtering establishment; one on ante mortem and 3.5 on post mortem inspection. Therefore the replacement of TVIs with TAs in beef plants has the potential to deliver greater savings, unlike for instance poultry where there is only 1 post mortem inspection position.

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<sup>5</sup> Option 2 – TAs replace all but one TVI post mortem position per shift. (It is estimated that TAs currently conduct 20% of post mortem inspection hours in poultry plants. Therefore in both the micro and macro analysis in poultry plants, only 80% of the savings are included which in the micro analysis is €338,142 out of total potential savings of €422,677. In the macro analysis 80% of the estimated savings of €0.447 m are included which is €0.357 m. This is because 20% of the potential savings have already been delivered through the use of TA's in poultry plants).

<sup>6</sup> The approximate cost of post mortem TVIs in single species plants in 2006 was €10.941 m and €14.391 m across all plants.

<sup>7</sup> Estimated savings will be increased where VIs and TAs are drawn from existing staff within DAFF, as these employees' salaries would be paid in any event.

### 6.3 Micro Analysis of Post Mortem Inspection Costs.

In an attempt to confirm the potential savings identified by macro analysis in tables 17 and 18, a microanalysis of 11 meat plants (comprising 3 cattle, 3 pig, 3 poultry and 2 sheep plants) was undertaken.

The plants were selected and ranked into small, medium and large as outlined below. Full calculations are outlined in appendix 10. The names of all establishments have been removed to protect their privacy. The results of the analysis for each individual species are outlined in the tables that follow.

The 11 plants selected for this analysis are single species plants (due to the difficulties in allocating TVI hours between species in multi species plants). The thresholds for small, medium and large plants for all species are outlined below. Further details are contained in appendices 11 and 12.

**Table 19: Total Number of Slaughter Plants by throughput in 2006**

Species	Slaughter Threshold		No of Plants	Total Number of Plants
	Beef	Small	< 35,000 p.a.	3
Medium		35,001 – 65,000 p.a.	14	
Large		> 65,000 p.a.	6	
Pigs	Small	< 200,000 p.a.	4	8 <sup>9</sup>
	Medium	200,001 – 500,000 p.a.	2	
	Large	> 500,000 p.a.	2	
Poultry	Small	< 4 million p.a.	7	12
	Medium	4 – 9 million p.a.	2	
	Large	> 9 million p.a.	3	
Sheep	Medium	< 400,000 p.a.	2	4 <sup>10</sup>
	Large	>400,000 p.a.	2	

<sup>8</sup> This refers to cattle only slaughter plants i.e. does not include plants where cattle are slaughtered along with other species.

<sup>9</sup> This refers to pig only slaughter plants i.e. does not include plants where pigs are slaughtered along with other species. In addition it excludes 1 plant which slaughters less than 2,000 pigs per annum.

<sup>10</sup> This refers to sheep only slaughter plants i.e. does not include plants where sheep are slaughtered along with other species. There are very few sheep only slaughter plants with many sheep slaughtered in beef slaughter plants.

❖ *Micro Analysis of 3 Beef Plants*

Table 20 below sets out the annual costs of post mortem inspections in typical small, medium and large plants under the present system and compares with the estimated costs of the Group's recommended option. Tables 21 and 22 set out the estimated potential savings at plant level and overall.

**Table 20: Yearly Cost of Post Mortem Inspections in Typical Small, Medium and Large Beef Plants.**

<b>Plant Size</b>	<b>Present System</b>	<b>Recommended Option</b>
<b>Small</b>	€268,228	€207,478
<b>Medium</b>	€88,238	€71,502
<b>Large</b>	€499,316	€339,337

**Table 21: Potential Annual Savings Achievable in Typical Small, Medium and Large Beef Plants**

<b>Plant Size</b>	<b>Present System</b>	<b>Recommended Option</b>
<b>Small</b>	N/A	€60,750
<b>Medium</b>	N/A	€16,733
<b>Large</b>	N/A	€59,979

**Table 22: Potential Overall Annual Savings in Beef Only Plants**

<b>Plant Size</b>	<b>Savings Per Plant with Recommended Option</b>	<b>No. of Plants</b>	<b>Overall Saving Estimate</b>
Small	€60,750	3	<b>€182,250</b>
Medium	€16,733	14	<b>€1,634,262</b>
Large	€59,979	6	<b>€59,874</b>
<b>Overall Saving</b>	<b>N/A</b>	<b>23</b>	<b>€2,776,386</b>

❖ *Micro Analysis of 3 Pig Plants*

Table 23 below sets out the annual costs of post mortem inspections in typical small, medium and large plants under the present system and compares with the estimated costs of the Group's recommended option. Tables 24 and 25 set out the estimated potential savings at plant level and overall.

**Table 23: Yearly Cost of Post Mortem Inspections in Typical Small, Medium and Large Pig Plants**

<b>Plant Size</b>	<b>Present System</b>	<b>Recommended Option</b>
<b>Small</b>	€147,492	€103,936
<b>Medium</b>	€590,446	€421,365
<b>Large</b>	€671,976	€455,494

**Table 24: Potential Annual Savings Achievable in Typical Small, Medium and Large Pig Plants**

<b>Plant Size</b>	<b>Present System</b>	<b>Recommended Option</b>
<b>Small</b>	N/A	€43,556
<b>Medium</b>	N/A	€169,081
<b>Large</b>	N/A	€216,482

**Table 25: Potential Overall Annual Savings in Pig Only Plants**

<b>Plant Size</b>	<b>Savings Per Plant with Recommended Option</b>	<b>No. of Plants</b>	<b>Overall Saving Estimate</b>
Small	€43,556	4	<b>€174,224</b>
Medium	€169,081	2	<b>€338,162</b>
Large	€216,482	2	<b>€432,964</b>
<b>Overall Saving</b>	N/A	<b>8</b>	<b>€945,350</b>

❖ *Micro Analysis of 2 Sheep Plants*

Table 26 below sets out the annual costs of post mortem inspections in typical medium and large plants under the present system and compares with the estimated costs of the Group's recommended option. Tables 27 and 28 set out the estimated potential savings at plant level and overall.

**Table 26: Yearly Cost of Post Mortem Inspections in Typical Medium and Large Sheep Plants**

<b>Plant Size</b>	<b>Present System</b>	<b>Recommended Option</b>
<b>Medium</b>	€310,055	€233,951
<b>Large</b>	€251,379	€197,390

**Table 27: Potential Annual Savings Achievable in Typical Medium and Large Sheep Plants**

<b>Plant Size</b>	<b>Present System</b>	<b>Recommended Option</b>
<b>Medium</b>	N/A	€76,104
<b>Large</b>	N/A	€3,989

**Table 28: Potential Overall Annual Savings in Sheep Only Plants**

<b>Plant Size</b>	<b>Savings Per Plant with Recommended Option</b>	<b>No. of Plants</b>	<b>Overall Saving Estimate</b>
Medium	€76,104	2	<b>€152,208</b>
Large	€3,989	2	<b>€107,978</b>
<b>Overall Saving</b>	N/A	<b>4</b>	<b>€260,186</b>

❖ **Micro Analysis of 3 Poultry Plants**

Table 29 below sets out the annual costs of post mortem inspections in typical small, medium and large plants under the present system and compares with the estimated costs of the Group's recommended option. Tables 30 and 31 set out the estimated potential savings at plant level and overall.

**Table 29: Yearly Cost of Post Mortem Inspections in Typical Small, Medium and Large Poultry Plants**

Plant Size	Present System	Recommended Option
Small	€72,482	€45,997
Medium	€90,480	€51,615
Large	€172,714	€119,530

**Table 30: Potential Annual Savings Achievable in Typical Small, Medium and Large Poultry Plants**

Plant Size	Present System	Recommended Option
Small	N/A	€6,485
Medium	N/A	€38,865
Large	N/A	€53,184

**Table 31: Potential Overall Annual Savings in Poultry Only Plants**

Plant Size	Savings Per Plant with Recommended Option	No. of Plants	Overall Saving Estimate
Small	€6,485	7	€185,395
Medium	€38,865	2	€77,730
Large	€53,184	3	€159,552
<b>Overall Saving</b>	N/A	<b>12</b>	<b>€422,677<sup>11</sup></b>

<sup>11</sup> It is estimated that TAs currently conduct 20% of post mortem inspection hours in poultry plants. Therefore in both the micro and macro analysis in poultry plants, only 80% of the savings are included which in the micro analysis is €38,142 out of total potential savings of €422,677. In the macro analysis 80% of the estimated savings of €0.447 m are included which is €0.357 m. This is because 20% of the potential savings have already been delivered through the use of TA's in poultry plants.

#### 6.4. Estimated Potential Savings Overall

Table 32 below outlines the overall potential savings from adopting the Group's recommended option in single species plants and table 33 extrapolates<sup>12</sup> these to all plants.

Maximum potential savings across all plants if the recommended option is adopted are estimated at €5.6m per annum, based on the microanalysis approach as set out in section 6.3.

**Table 32: Potential Savings in the Cost of Post Mortem Inspections from Adopting Recommended Option in Single Species Plants Only**

Species	Potential Annual Savings
Beef	€2,776,386
Pigs	€45,350
Poultry	€38,142
Sheep	€60,186
<b>Total Savings p.a.</b>	<b>€4,320,064</b>

**Table 33: Potential Savings in the Cost of Post Mortem Inspections from Adopting Recommended Option in all Plants**

Species	Potential Annual Savings
Beef	€3,653,139
Pigs	€1,038,846
Poultry	€38,142
Sheep	€605,084
<b>Total Savings p.a.</b>	<b>€5,635,211</b>

#### 6.5. Number of Trained Auxiliaries Required

Table 34 below outlines the expected number of trained auxiliaries required based on a 25-hour inspection week for 46 weeks of the year. This implies that a TA would conduct 1,150 hours of post mortem inspections per annum.

The analysis indicates that a maximum of 116 TAs would be required where all but one TVI post mortem position are replaced by TAs in sheep, beef and pig plants. (It is assumed that TAs will continue to replace TVI post mortem positions in poultry as has already happened to some extent).

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<sup>12</sup> Extrapolation on the basis that, in 2006, 76% of all cattle were slaughtered in single species plants, while for pigs, poultry and sheep it was 91%, 100% and 43% respectively.

**Table 34: Expected Number of Trained Auxiliaries (TAs) required for post mortem inspections assuming one TVI position per slaughter line is retained**

Species	Estimated No. of hrs of slaughter.	Expected No. of TAs per Slaughter hr.	Total No. of Slaughter Hrs to be covered.	Divide by 46 Weeks per annum.	Divide by 25 hrs per week (5 hrs per day)	Number of trained auxiliaries required
<b>Beef</b>	33,922	2.5	84,805	46 wks	25hrs	74
<b>Sheep</b>	11,806	1	11,806	46 wks	25 hrs	10
<b>Poultry</b>	13,596	1	13,596	46 wks	25 hrs	12 <sup>13</sup>
<b>Pigs</b>	11,632	2	23,264	46 wks	25 hrs	20
		Total Hours	133,471			
<b>Total Number of TAs Required</b>						<b>116</b>

It is important to emphasise that this estimate represents maximum substitution potential. In practice there are logistical restrictions, such as the need (under legislation) for an OV to be on site at a slaughter plant while ante and post mortem inspection are ongoing, and applying particularly in smaller plants, which would limit the scope for substitution. Nonetheless, the bulk of TVI hours are worked in large/medium plants, where the logistics of substitution are more straightforward.

As previously outlined over 250 technical staff of DAFF are receiving training in this area. This was completed in December 2008. The age profile of these staff is very favourable with two thirds of TAO's in meat plants under 45 years of age. Further details on the age profile of technical staff in meat plants are included in appendix 13.

### 6.6 Case Study

The Steering Group conducted a case study of a large bi-species multi line plant to compare the costs of the Group's recommended options to the present system in a real life situation.

Full details of the calculations can be found in appendix 14A. Appendix 14B sets out a sample daily roster, amended to reflect increased usage of auxiliaries.

The plant in question has two lines killing sheep and cattle.

The sheep line kills 221 days per annum while the beef line is in operation for 195 days per annum (average of 208 used for calculations).

The total current cost per day at present for post mortem inspections is calculated at €3,902 or €0.812m per annum.

The Group recommends that in a few very large plants, including major multi-species plants like this one, an additional DAFF VI should be assigned to act (instead of a TVI) as support to the official veterinarian. This measure can be justified by additional

<sup>13</sup> 8 SAO's already operate in poultry plants on the basis of carrying out 1 – 3 hours of post mortem duties per day.

savings arising, by virtue of the fact that the VI could supervise two slaughter lines and/or spend some time on ante as well as post mortem inspection.

The estimated cost for the recommended option in this case (including support VI) is calculated at €2,807 per day or €0.583m per annum, giving a potential saving of €0.228m.

The level of saving indicated by this case study suggests that when the Group's recommended approach is extended to the 4 or 5 largest plants it could be expected to deliver total savings of c.€1m per annum in the plants in question while still maintaining a strong veterinary presence.

## **7. DEVELOPMENT OF NEW PERFORMANCE INDICATORS**

### **7.1 Introduction**

The development of meaningful performance indicators is considered a fundamental part of the development of the Management Information Framework and a central component of the Value for Money Review process. The aim of this section is to propose performance indicators for the TVI (Meat Hygiene) Programme that will assist more effective measurement of the extent to which the programme is providing value for money.

### **7.2 What are Performance Indicators?**

Performance indicators are quantifiable measurements that enable the success of an organisation, unit, individual, or, as in this review, a scheme, to be judged.

*“Management Information Framework - Performance Indicators: A Users’ Guide”*<sup>14</sup> sets out the characteristics of good performance indicators as outlined below:

- 1) appropriateness – the user should be able to relate the information to the activity, output or outcome being reported;
- 2) accuracy – data must be as error-free as possible;
- 3) comprehensiveness – all aspects of performance should be captured by the data;
- 4) consistency – there should be internal consistency in that, where indicators are grouped, they should not deliver mixed messages on performance;
- 5) manageability – this comprises cost-effective collection of data within reporting structures, with results delivered in an understandable format;
- 6) relevance – indicators must provide information which the user actually wants;
- 7) timely – the most recent data available should be used;
- 8) verifiable – they need to be accurate and objective and should stand up to independent examination;
- 9) validity – indicators should cover actual performance.

### **7.3. Current Performance Indicators for the TVI Programme**

Business planning for VPHIS routinely incorporates requirements for ante and post mortem inspection of all animals coming into slaughterhouses, 100% testing of animals required to undergo TSE testing, and refers also to residue sampling targets in line with the National Residue Plan. These targets are routinely audited and reported.

### **7.4. Proposed Performance Indicators**

The proposed performance indicators have been divided into the following three categories:

- 1) activity indicators;
- 2) efficiency indicators;
- 3) effectiveness indicators.

(The Group notes that factors outside DAFF control can have an adverse impact on levels achieved – e.g. plant breakdown, failure of animals to arrive as planned etc.).

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<sup>14</sup> Department of Finance (2001). *“Management Information Framework - Performance Indicators: A Users’ Guide”*- Technical Issues Subgroup. Available at [www.irfgov.ie/finance](http://www.irfgov.ie/finance).

#### ❖ *Activity Indicators*

Activity indicators provide information on throughput and input levels.

Three basic activity indicators are proposed in the following table. Much of the data required to facilitate measurement of these performance indicators is available within DAFF, albeit not within one Division.

**Table 35: Proposed Activity Indicators**

Number of animals slaughtered, by species
Number of TVI hours claimed per month/year
Overall cost of TVIs per month/year

#### ❖ *Efficiency Indicators*

Efficiency indicators relate to how well DAFF is using its resources to process approximately 85<sup>15</sup> million animals per annum. Efficiency is often described as “*are we doing things right*”. Efficiency is concerned with the conversion of inputs to outputs.

**Table 36: Proposed Efficiency Indicators**

TVI cost per animal slaughtered, by species and plant
TVI time per animal slaughtered, by species and plant
TVI Cost as % of total Meat Inspection Service cost p.a.
% Cost Recovery

#### ❖ *Effectiveness Indicators*

Effectiveness indicators relate inputs and outputs to outcomes. Effectiveness is related to the extent to which a scheme or programme is achieving its objectives. It is often paraphrased as are “*we doing the right thing*”. Effectiveness indicators should seek to answer the basic question: Is the TVI (Meat Hygiene) Programme achieving what it set out to achieve?

The objectives of the TVI Programme as set out at 2.3 above are to:

<ul style="list-style-type: none"><li>• Support the Department in ensuring that animals are inspected ante and post mortem as per legislation.</li></ul>
<ul style="list-style-type: none"><li>• Complement the Department’s veterinary presence at slaughter plants in relation to designated tasks.</li></ul>
<ul style="list-style-type: none"><li>• Assist DAFF fulfil its service contract with the Food Safety Authority of Ireland.</li></ul>

The following indicators are suggested in this area:

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<sup>15</sup> 85 million is the average number of animals slaughtered per annum in the years 2002 – 2006 as identified in table 2.

**Table 37: Proposed Effectiveness Indicators**

Number of animals inspected, by species/plant
% detained/condemned
Number of samples taken under different headings
Number of complaints/food alerts
SRM spinal cord detections

**7.5. Conclusions**

The Steering Group proposes the introduction of the above performance indicators so as to ensure easier monitoring and measurement of the performance of the TVI Programme. The performance indicators should be continually reviewed and updated as the operation of the scheme changes. The Group also considers that monitoring of TVI usage should be complemented by similar performance indicators in relation to usage of other inputs including auxiliaries.

## **8. CONCLUSIONS AND RECOMMENDATIONS**

### **8.1 Introduction.**

In recent years the TVI (Meat Hygiene) Programme has cost an average of c.€20m p.a., constituting more than half the average cost of the meat inspection service as a whole. The Steering Group's examination of the programme covered the evaluation criteria of rationale, continued relevance, efficiency, effectiveness and impact as recommended by the Department of Finance.

### **8.2. Rationale and Continued Relevance of the TVI Programme**

The Steering Group established that there is an important public health rationale for the work involved in the TVI scheme and the key responsibility is the need to implement food safety controls within meat plants.

DAFF is obliged, as a competent authority, to provide official food controls.

Article 17 of the general food law Regulation (EC) 178/2002 states "*Member states shall enforce food law, and monitor and verify that the relevant requirements of food law are fulfilled by food and feed business operators at all stages of production, processing and distribution*".

Under the Hygiene Package the Department must verify that its approved food business operators are adhering to relevant legislation.

In terms of relevance, the Group is satisfied that there is a continued justification for allocation of public funding to this programme, as the programme objectives are based on legal requirements. However the Group considers that the service could be delivered in a more cost effective manner as discussed in Section 6.

### **8.3. Effectiveness/Impact**

The Steering Group acknowledges that the TVI (Meat Hygiene) programme has been effective in achieving its main objectives as set out in Sections 2 and 3 of this report. The Group is also conscious of additional benefits of extensive usage of veterinarians, in particular:

- meeting the legislative requirement to have an official veterinarian on site at a slaughter plant while ante and post mortem inspection are ongoing;
- the flexibility of having a local pool of personnel to work on a shift basis at short notice;
- the fact that the veterinary qualification decreases the intensity of supervision required for evaluation that needs to be undertaken by the DAFF OV;
- the contribution veterinary presence makes to public perception of high food safety standards;
- the impact it may have on potential trading partners;
- and the fact that participation in the TVI programme can be an important component of sustainability in small rural veterinary practices.

The lack of a full complement of formal performance indicators has made measurement of programme performance difficult, and the Group has made recommendations for development of appropriate indicators in Section 7.

### **8.4. Efficiency/Economy**

A number of reviews of the TVI programme have been carried out and the Group recognizes that in particular the 2003 DAFF review made significant progress in terms of increasing flexibility and reducing costs. That review led to savings of approximately €3m p.a. on the then yearly budget of c.€21m.

Between 2003 and 2006 activity and cost levels have been relatively static:

- the number of animals slaughtered (excluding poultry) rose by 2%;
- and the number of TVI hours claimed remained very close to the 2003 level.

When backmoney payments made in 2006 are apportioned to the relevant years, the amount paid to TVIs rose by c.9%.

Based on the analysis in Section 4, and when allowance is made for pay increases, it can be said that in more recent years there has been some improvement over time in the efficiency of the TVI programme in relation to the delivery of its major outputs.

The issue of economy however is crucial to any expenditure review. Economy is concerned with the cost of inputs to the scheme and involves procuring resources at the lowest cost consistent with desired quality.

On a comparison of hourly rates, and given that, on average, over 257,000 TVI hours have been claimed annually over the period 2004 – 2006, it appears there may be significant potential for cost reduction in substituting DAFF technical staff where permissible and practical for TVIs.

This issue is considered along with other alternative options in Section 5.

### **8.5. Recommendations.**

The evaluation of the TVI (Meat Hygiene) Programme under the VFM Review framework has identified a number of recommendations which if implemented fully will ensure a high-quality meat inspection service for considerably reduced expenditure. These recommendations are listed below.

The key recommendation is that DAFF should make greater use of official trained auxiliaries in post mortem inspections. This recommendation should be phased in over a 3-year period on a plant-by-plant basis commencing with selected large/medium beef slaughterhouses. Some TVIs should still be utilised in post mortem inspection duties because of the legislative requirement for the presence of an OV during post mortem and the additional benefits inherent in retaining a strong veterinary presence in the meat inspection service.

The greater use of trained auxiliaries will take advantage of ongoing training of technical staff within meat plants which it is estimated had cost €6 million or approaching €25,000 per official by 2008.

It is estimated that implementation of this recommendation has the potential to deliver annual savings up to a maximum of €4.3m-€5.6 m per year.

**RECOMMENDATIONS**

<b>RECOMMENDATION</b>	<b>IMPLEMENTATION RESPONSIBILITY</b>	<b>PRIORITY</b>	<b>SUGGESTED TIMESCALE</b>
<p>1. The Steering Group recommends greater use of trained auxiliaries on post mortem inspections:</p> <p>a) Assignment of auxiliaries should be phased in when fully trained staff become available, commencing with selected medium/large beef plants;</p> <p>b) The process should then be rolled out to other large/medium bovine, pig and sheep plants;</p> <p>c) A TVI should as the norm be retained on most slaughter lines to maintain a strong veterinary presence in the process, and to help meet legal requirements for veterinary supervision;</p> <p>d) In the case of a few very large plants, all post mortem TVIs should eventually be replaced by auxiliaries and a support DAFF VI should be assigned to the plant, to maintain a strong veterinary presence, to supervise auxiliaries and to routinely carry out ante mortem inspections.</p>	<p>Personnel/VPHIS</p>	<p>High</p>	<p>2010-2012</p>





## **Appendix 1A: Summary of Views received from Veterinary Ireland**

In 2003, Veterinary Ireland commissioned a review of Economic Aspects of the Meat Inspection Service by Brendan Kearney & Associates. Arising from that review, significant changes were negotiated between the Department and Veterinary Ireland. The outcome of these negotiations was reflected in a proposed Agreement (dated 2 October 2003) which was accepted by TVIs.

The objective of the negotiations in 2003 from the Department's viewpoint was to achieve savings of €3.5 million annually in the budget of €21 million for TVI services, and through this new Agreement, this was achieved by greatly increasing the flexibility of participating TVIs, while maintaining the independence of the service.

Veterinary Ireland would be concerned lest this current Review should become focused purely on cost reduction and matters such as cost/benefit analysis – without clear explanations as to how the obvious “benefits” of public health and consumer confidence are being quantified to allow direct comparisons with “costs”. “Value for money” analysis should not be solely about “money” – without some clear means of judging “value” also.

TVIs provide verification as to the safety of meat inspected in two ways. Firstly via ante mortem examination they ensure absence of particular diseases such as BSE, Listeria Meningitis and other infectious and zoonotic disease, together with ongoing vigilance for animal welfare issues. They provide surveillance for notifiable disease and ensure high standards of welfare are maintained in the lairage. At post mortem, continual examinations (by legislation) for Mycobacterium bovis and Cysticercus bovis among others provide essential information of infectious disease control schemes run by the state.

The Republic of Ireland exports nine tenths of its meat products, and veterinary monitoring and verification is a vital step to giving confidence to the markets as to the safety and quality of our meat.

Future trends for veterinary involvement in meat harvest include the following:

- Emergence of food-borne pathogens devoid of clinical or pathogenical changes e.g. Campylobacter or E. coli 0157.
- Using a Risk Analysis approach to include not only identification and assessment of risks but also critically, proportionate management of risks.
- Hazard Analysis and Critical Control Point – identifying critical points in the production chain, strategic risk management and veterinary monitoring, auditing and accountability.

Veterinary Ireland and TVIs are aware of the professional qualifications and training prescribed by the new Hygiene Package 854/2004 and the Continuing Professional Development courses reflect our focus to comply with this legislation. In coming months a further round of training for TVIs is being organised by Veterinary Ireland in full cooperation with the Department of Agriculture, Fisheries and Food, the Food Safety Authority of Ireland and the Local Authority Veterinary Service. Veterinary Surgeons are at all times conscious of the need to be part of multidisciplinary teams in the production of safe and wholesome meat.

In summary therefore, Irish vets play a vital role in providing reassurance to consumers on the health status of our food of animal origin. This independent, professional veterinary inspection service provides the consumer with the best possible reassurance as to the health status of food of animal origin.

TVI duties benefit both the meat industry and private veterinary practices, many of which could not be sustained without this secondary source of income. In this regard it should be noted however that this system provides important flexibilities for the Department and the meat factories. TVIs are only called on an “as required” basis to suit the factories operating arrangements. This system in turn benefits farmers also and safeguards the national Agri-sector. Some areas of the country would have less than skeleton veterinary services if it weren’t for TVI duties.

It is also clear that any possible savings from this current review would pale totally into insignificance when compared with the disastrous economic and health consequences and costs which could follow from a watering down of this vitally important independent assessment, which is there primarily to protect consumers of Irish meat.

The Department has in the past confirmed that their intentions at all times are that there will be no reduction in food safety and animal welfare standards and there will be no changes in agreed working practices.

## **Appendix 1B: Summary of Views received from Meat Industry Ireland**

### Definition of Meat Inspection:

Meat Inspection is a statutory service imposed on the slaughter, cutting and processing sectors of the business through EU and National legislation. The Department of Agriculture is the sole provider of the service and charges for the service are levied on a statutory basis.

The Hygiene Package re-emphasises that the Food Business Operator (FBO) has primary responsibility for ensuring that the meat they produce is safe.

On successful completion of Meat Inspection (Ante-mortem & Post-mortem Inspection), a meat inspection service Official applies a Health Mark to the carcass. Under the previous legislation, application of this mark indicated to the plant operator that the live animal and the carcass etc had been inspected and was considered fit for human consumption.

Under the Hygiene Package the mark means that there are no grounds for declaring the carcass unfit for human consumption. This provides little if any assurance to the FBO and has further diminished the significance and value added of Meat Inspection.

### Requirements under the Hygiene Package (HP):

Despite the fundamental cultural change introduced by the Hygiene Package, which aims to move away from prescriptive methods to more flexible outcome based procedures the detailed inspections, incisions and palpations which must be carried out under the heading Meat Inspection has not changed significantly, and remains unchanged since Victorian times. It is widely accepted that the current Meat Inspection regime expends very considerable financial and human resources on searching for evidence of diseases which are no longer particularly significant in relation to public health.

The principal food safety issues relevant today e.g. microbiological safety, residues of animal remedies, cold-chain control, etc. are all the responsibility of the FBO.

MII urges DAF to actively promote a rapid move to genuine risk-based meat inspection, by pursuing this agenda at EU level, and in CODEX Alimentarius. EU proposals to make changes in relation to the inspection for a number of specific sub-groups e.g. lambs, goats and veal calves, should be implemented speedily, and extended to all meat inspection activities without delay.

At the same time MII recognises that in the meantime, the current mandatory Meat Inspection activities must continue to be carried out, but the delivery of this statutory service must be as efficient and cost effective as possible.

The way the activities are delivered on-the-ground has a significant impact on the cost of the service .

The Hygiene Package does not require veterinarians to undertake the official controls in meat plants. The Hygiene Package provides for auxiliaries to assist the official veterinarian with overall responsibility for the plant. The specific training requirements for auxiliaries are laid down in the legislation. The decision to use qualified veterinarians for the provision of meat inspection is the choice of the

Department of Agriculture & Food. Other Member States within the European Union do not engage veterinarians for this purpose but instead use meat inspectors or auxiliaries.

Within the current working arrangements for TVI s, a number of improvements could be made:

- Current shift arrangement is a minimum of 2 hours, which in general can be increased in  $\frac{1}{4}$  hour increments. However, for some unknown reason, shifts of  $2\frac{3}{4}$ ,  $3\frac{1}{4}$  and  $3\frac{3}{4}$  hours duration are not permissible. This should be addressed.
- Electronic recording of actual TVI hours worked on the line should be enforced throughout the industry. This was provided for in the last major review of TVI operations in 2003.
- The TVI on final carcase inspection should be responsible for stamping the carcase with the health mark. This would negate the requirement for a separate agricultural officer (AO) to carry out this function.
- TVI s should have personalised health marks for applying to carcasses after final inspection. This would improve the transparency of the meat inspection service.

In light of the introduction of the Hygiene Package in January 2006 and in particular the move to risk-based inspections, MII believes there is a clear need to re-assess TVI manning levels in slaughterhouses. Based on the requirements of the Hygiene Package, a basic template for staffing should be laid down and each slaughterhouse should have its current TVI staffing level reassessed.

There is also a need to assess the actual tasks undertaken by each TVI in both the lairage and on the slaughter line. These should be clearly documented and analysed against the legislative requirements of the Hygiene Package and against the specific tasks undertaken by equivalent personnel (meat inspectors) in other Member States.

## **Appendix 1C: Summary of Views received from Veterinary Officers' Association**

The TVIs role in meat plants is very important in meeting the following objectives of the meat inspection service as follows:

- Programme objectives are to carry out ante-mortem and post-mortem inspections and to assist the Veterinary Inspectorate in Public Health Inspection (VPHIS) duties.
- At ante-mortem inspection, assessment of food chain information, clinical assessment of animals presented, diagnosis of class A disease (including transmissible encephalopathies) and to carry out a welfare assessment of transportation, in the lairage, of handling and at stunning.
- At post-mortem to conduct a clinical/pathological assessment on carcasses and offals, to assess suitability for human consumption, to diagnose notifiable diseases, to assess carcass hygiene, to take samples where considered necessary, to monitor operational hygiene, to protect public health from zoonotic diseases and to collate information on herd health information back to the farm of origin.
- There is also a statutory requirement for routine examination and incision of specified lymph nodes and discretionary examination of selected body lymph nodes as indicated for the presence of lesions of TB, and of muscles for cysticercus cysts (tapeworms).

### Validity

The presence of qualified veterinarians doing the inspection duties has given competitive advantage to Irish exports and added to consumer confidence at home and abroad.

This involvement of the veterinary profession has been relied upon by both DAF, the meat processors and Bord Bia, in the past, to provide confidence in, and protect markets, particularly third country markets. With proposed changes to world trade agreements, it is imperative to maintain present markets and open new markets where possible by strengthening the present inspection systems.

### Costs and Staffing

Since the new rostering arrangement for TVIs, the costs have been on a downward trend.

The present system is very flexible; the TVI staff are booked only as needed and can be cancelled on a 24 hr notice. Therefore we would consider temporary inspectors more cost effective than permanent staff that may not be required throughout the year.

Under the Hygiene Package legislation, it is a requirement to have an Official Veterinarian in the slaughter plant at all times, whilst that plant is operating. Generally speaking, there is one full time OV (Veterinary Inspector) assigned to each slaughter plant. This OV may have other duties outside of the main plant to attend to. In these instances, TVIs (with OV training) can fulfill the legislative requirements for the full time OV when he/she is not available in their own plant.

### Alternative policy

Any alternative proposal would have to be evaluated against efficiency and effectiveness costs, flexibility, international acceptability, consumer confidence benefit and the effect of changes on permanent staff.

### Summary

The Veterinary Officers Association believes that the present system has worked well to achieve the stated objectives and to build and maintain consumer confidence in our food industry.

There are some changes, which the Association believes could improve the present system:

- Formal mandatory induction training for new TVIs prior to their first appointment. We believe training should be formalized so that newly appointed temporary veterinary inspectors all receive similar training. This should include Health and Safety training.
- Regular updated mandatory training should be required to remain on the panel of a particular plant
- Annual/biannual re-approval to be required for TVIs to remain on a panel. Any attempt to remove a person from a panel could be subject to an independent appeal board.

## **Appendix 1D – Summary of Views received from IMPACT**

The union takes a view that any strategy for the development of Irish agriculture and food must be underpinned by a robust food safety regime.

The programme's objectives are being achieved through the ongoing implementation of the Hygiene Package. It is the opinion of the union that the effectiveness with which these objectives have been achieved could be greatly enhanced through improved utilisation of technical staff in the implementation of the hygiene package and the creation of a seamless inspection system.

The online meat inspection service is almost exclusively staffed by private veterinary practitioners. Their costs are in line with their professional fees. Issues can arise as a result of the interaction of private veterinary practices and public health inspection duties, examples of which include cancellations which take place at very short notice and inflexibility in the roster programme leading to inefficiencies.

At present there are approximately 300 technical officers in training to the level set out as standard for official auxiliaries in EU legislation. The majority of these officers are permanently headquartered in slaughter plants. These officers offer far greater flexibility in attendance patterns. As an alternative policy it is the opinion of this union that the increased utilisation of these permanent independent public servants in the implementation of all aspects of the food hygiene package (ante/post mortem, animal welfare, sampling and HACCP etc) would achieve greater efficiencies and a more seamless effective inspection system.

## **Appendix 1E – Summary of Views of Irish Poultry Processors Association**

In a short submission the IPPA stated that trained technicians should be used to carry out the ante and post mortem checks that are currently carried out by trained veterinary practitioners on poultry lines.

IPPA understands that the Hygiene Package currently requires ante mortem checks to be carried out by a veterinary practitioner but is of the view that this should be amended where poultry are concerned, so that a veterinarian acts in a more supervisory role, rather than checking every bird.

## **Appendix 2: List of Previous Reviews**

1. Department of Agriculture, Fisheries and Food Examination of Procedures in Meat Factories – 1982.
2. Internal Audit Report – 1985.
3. Department of Finance Efficiency Audit of Department of Agriculture, Fisheries and Food staff and resources – 1988.
4. Department of Finance Review of Meat Sector – 1988.
5. Department of Agriculture, Fisheries and Food Veterinary Services Review Group – 1990.
6. Comptroller and Audit General’s Report of the Meat Inspection Service – Project Audit Report (1991).
7. Report on the Meat Inspection Service by Ernst and Young Management Consultants for the Department of Agriculture, Fisheries and Food – June 1996.
8. DAFF Review 2003.
9. Veterinary Meat Inspection by Local Authorities – Relative Unit Costs as a Measure of Efficiency. (MA Thesis by Bernard F. Hegarty, April 2006).

**Appendix 3 – Standard Operating Procedures (SOPs) and Veterinary Procedure Notices (VPNs) applicable to TVIs**

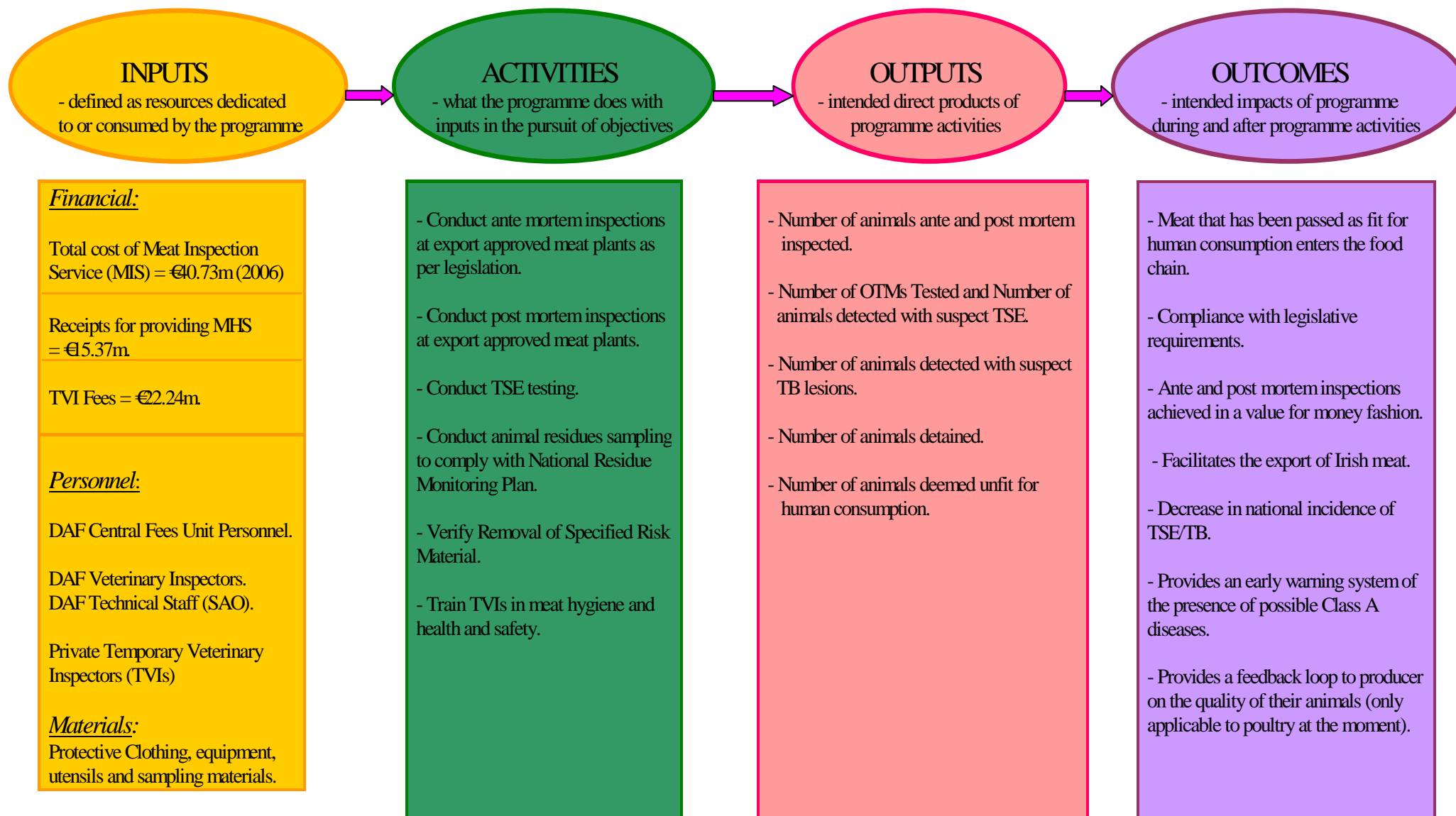
**SOPs relating to TVIs**

BeefMeat SOP No. 001/2006	Standard Operating Procedure for official controls on Cattle Intake and Documentary checks at Beef Slaughter Plants.
BeefMeat SOP No. 002/2006	Standard Operating Procedure for Welfare at DAFF Approved Slaughter Plants.
BeefMeat SOP No. 003/2006	Standard operating procedure for Ante Mortem Inspection of Bovines. Rev. 4 of 18/8/2006.

**VPNs relating to TVIs**

23/2001	Pregnancy diagnosis of TB and Brucellosis reactor cows and heifers.
12/2004	Sampling from 'S' flagged herds in the Silvermines area.
2/2006	Sampling of casualty animals for inhibitory substances under the National residue plan and sampling in accordance with the plant's self-monitoring programme.
5/2006	Procedures for BSE sampling of bovines at DAFF approved.
6/2006	Definition, handling and harvesting of specified risk materials (SRM) in cattle.
26/2001	National sheep identification system.
9/2004	Import of sheep from Northern Ireland or immediate slaughter. Sample health certificate—Authorisation No 5.
30/2001	The completion of Ante mortem inspection. AME 1 record of animals rejected or detained at Ante mortem inspection.
8/2002	Ante Mortem records at sheep slaughter plants.
21/2000	Certification to accompany injured or diseased animals intended for slaughter at export approved slaughter plants.
5/2003	Protection of animals at time of slaughter.
10/2001	Implementation of SRM policy-treatment of sheep heads.
6/2003	Ageing and traceability of sheep carcasses.
12/2001	SRM controls on carcass beef and sheep meat.
6/2002	Specified Risk Material (SRM).
11/2002	Specified Risk Material (SRM) amendment to definition (read in conjunction with VPN 6/2002).
13/2003	Handling, harvesting and the definition of Specified Risk Material and Attached supplementary Specified Risk Material (SRM) Checks report.
39/2001	Procedures for suspect cases of Scrapie at slaughterhouses.
7/2005	Scrapie sampling programme. The taking of samples from Ovine animals aged over 18 months.
8/2005	Scrapie sampling (1) Scrapie monitored flock scheme (2) Sampling of positive Scrapie flocks. – Clinical signs of Scrapie.
12/2002	National Pig identification and tracing system----NPITS.
17/2003	Identification of Equines presented for slaughter for Human consumption.
18/2004	Identification of Equines presented for slaughter for human consumption - read in conjunction with VPN 17/2003.

## APPENDIX 4 – Programme Logic Model for Value for Money Review of the Temporary Veterinary Inspectors Scheme



## **Appendix 5: Species Breakdown of Positive Residue Samples 2004 – 2006**

**Table 1. Number of Positive Bovine Residue and Prohibited Substance Samples.**

<b>Year</b>	<b>Number of Samples Taken</b>	<b>Number of Positives Recorded</b>	<b>% Of Positives</b>
2004	9,936	66	0.67%
2005	11,609	42	0.36%
2006	11,258	18	0.16%
% change 04 - 06	+ 13%	- 73%	- 76%

**Table 2. Number of Positive Pig Residue and Prohibited Substance Samples.**

<b>Year</b>	<b>Number of Samples Taken</b>	<b>Number of Positives Recorded</b>	<b>% Of Positives</b>
2004	32,981	91	0.28%
2005	26,482	26	0.10%
2006	10,427	12	0.12%
% change 04 – 06	- 68%	- 87%	- 59%

**Table 3. Number of Positive Sheep/Goat Residue and Prohibited Substance Samples**

<b>Year</b>	<b>Number of Samples Taken</b>	<b>Number of Positives Recorded</b>	<b>% Of Positives</b>
2004	1,891	5	0.26%
2005	2,016	6	0.30%
2006	2,207	4	0.18%
% change 04 – 06	+ 14%	- 20%	- 30%

**Table 4. Number of Positive Poultry Residue and Prohibited Substance Samples.**

<b>Year</b>	<b>Number of Samples Taken</b>	<b>Number of Positives Recorded</b>	<b>% Of Positives</b>
2004	3,065	22	0.72%
2005	3,116	16	0.51%
2006	1,376	14	1%
% change 04 - 06	- 55%	- 36%	+ 40%

### Appendix 6: Hourly Cost Calculations

	Pay Group	Salary & Allow	Pension Element*	Salary & Allow + Pension	Overtime	Unsocial hours	Travel and Sub	Employer's PRSI	Totals	Staff No.	Total Indivdl Staff Cost p.a.	No. of Hours p.a.**	Hourly Cost
670456 - Technical Agricultural Officer - Full prsi	250	6,070,204.76	1.25	7,587,755.95	745069.78	79165.78		706,202.95	<b>9,118,194.46</b>				
70459 - Technical Agricultural Off	250	18,450,436.54	1.30	23,985,567.50	303001	363626.8	1,658,421	443,612.91	<b>26,754,229.21</b>				
				<b>31,573,323.45</b>	<b>1,048,070.78</b>	<b>442,792.58</b>	<b>1,658,421</b>	<b>1,149,815.86</b>	<b>35,872,423.67</b>	<b>653</b>	<b>54,935</b>	<b>1578</b>	<b>34.81</b>
63851 -Supervisory Agric Off	250	13,894,293.66	1.30	18,062,581.76	1,017,064.95	142,622.94		295,650.51	<b>19,517,920.16</b>				
663859 - Supervisory Agric Off AG&EE - Full prsi	250	86,523.21	1.25	108,154.01	0.00	0.00	625,955	8,863.56	<b>742,972.57</b>				
				<b>18,170,735.77</b>	<b>1,017,064.95</b>	<b>142,622.94</b>	<b>625,955</b>	<b>304,514.07</b>	<b>20,260,892.73</b>	<b>288</b>	<b>70,350</b>	<b>1612</b>	<b>43.64</b>
3480Y - Veterinary Inspector	50	160,691.58	1.30	208,899.05		10,677.95		3,103.49	<b>222,680.49</b>				
3480Y - Veterinary Inspector	300	8,988,308.92	1.30	11,684,801.60		686,358.14		182,116.93	<b>12,553,276.67</b>				
634808 - Veterinary Inspector - Full prsi	300	10,914,095.45	1.25	13,642,619.31		688,125.49	279,559	1,151,646.89	<b>15,761,950.69</b>				
				<b>25,536,319.96</b>	<b>0.00</b>	<b>1,385,161.58</b>	<b>279,559</b>	<b>1,336,867.31</b>	<b>28,537,907.85</b>	<b>236</b>	<b>120,923</b>	<b>1501</b>	<b>80.56</b>
Temporary Veterinary Inspector***													<b>76.50</b>

**Footnotes**

\* Add on 25% of basic pay for staff recruited after 6 April 1995 and 30% of basic pay for staff recruited before 6 April 1995 when calculating pension element

\*\* Number of Hours per annum calculations below

Grade	Standard	Annual Leave	Sick Leave	Overtime	Days Worked p.a	Hours per day	Total Annual Hours
TAO	249	21	11	10	227	6.95	1,578
SAO	249	26	6	15	232	6.95	1,612
VI	249	28	5	0	216	6.95	1,501

\*\*\* The average hourly rate for TVI in 2006 was 70.79 per hour, however DAFF must pay PRSI as well at an effective rate of 8.06% meaning true cost of a TVI in 2006 was 76.50 per hour. Calculation of the average hourly TVI rate in 2006 is set out below as is the calculation of the effective PRSI rate for TVIs which DAFF must pay.

	> 66 yrs	Under 66 years	Total No of TVIs
Number of TVIs	137	663	800
PRSI Rate	0.5	9.625	
	68.5	6381.375	6449.875
		<b>Effective PRSI Rate</b>	8.06234375
<b>TVI Rate for Specific Periods</b>	<b>TVI rate p/h</b>	<b>Weighted by months</b>	<b>Sub total</b>
			<b>Divided by 12 Months</b>
TVI rate on 1/12/05	€69.60	5.00	€348.00
TVI rate on 1/06/06	€71.33	6.00	€427.98
TVI rate on 1/12/06	€73.47	1.00	€73.47
		12.00	€849.45
			€70.79

**Appendix 7: Fees charged for Meat Inspection.**

<b>Fee Description</b>	<b>Type</b>	<b>Rate</b>	<b>Unit</b>
<b>Cattle Slaughter Fees</b>	Cattle	4.75	Head
<b>Sheep Slaughter Fees</b>	Sheep	0.50	Head
<b>Pig Slaughter Fees</b>	Pigs	1.30	Head
<b>Poultry Slaughter Fees</b>	Poultry <2kg	0.01	Head
	Poultry 2 –5 kg	0.02	Head
	Poultry > 5kg	0.04	Head
<b>Cutting Fees</b>	Cutting – Not Poultry	3.00	Tonne
	Cutting – Poultry	3.00	Tonne
	Dist. Ctr. Charges	1.90	Tonne
<b>Cold Store Fees</b>	Independent	3.81	Tonne
	Integrated	9.52	Person per Hour
<b>Meat Product Fees</b>	Products – per person	9.52	Hour
<b>Overtime - Slaughter</b>	Mon-Fri (before 7.30am & after 6.30pm)	12.70	Hour
	W'ends & Pub. Hols	19.05	Hour
<b>Overtime</b>	Sheep Loading (M-F)	6.35	Hour
	Sheep Loading (W'end & Public Hols)	9.52	Hour

## **Appendix 8: Training of Technical Staff in Meat Establishments**

All technical staff working in Meat Establishments are receiving training to the standard of a “Certificate in Meat Hygiene”. This course was established to train technical staff of DAFF as auxiliaries under the requirements of EU Directive 91/497/EEC. Staff are required to undergo at least 400 hours of theory and at least 200 hours of practical training in subjects including hygiene, legislation and animal anatomy and physiology, as outlined in Annex III of the Directive.

To date, 167 Technical Agricultural Officers; 70 Supervisory Agricultural Officers; 6 District Superintendents and 2 Area Superintendents were receiving this training. Module 7 is presently being completed and there are a further 3 modules to be completed. Two Veterinary Inspectors deliver the training, one of whom is a Local Authority Vet while the other is a DAFF Vet. Teagasc pays both for their input into the course. The modules have been approved by FETAC and are certified by that body

The Certificate in Meat Hygiene consists of 11 modules as outlined below;

- Pre-requisite Module Basic Hygiene and HACCP;
- Module 1 Animal Welfare relating to slaughter;
- Module 2 Anatomy and Physiology of Farm Animals;
- Module 3 Nutrition, Growth and Metabolism of Farm Animals;
- Module 4 Red Meat Slaughter procedure and hygiene controls;
- Module 5 Basic Pathology and Disease;
- Module 6 Post Mortem Inspection Procedures for Farm Animals;
- Module 7 Food Borne Illnesses and Zoonoses;
- Module 8 Meat Processing;
- Module 9 The Red Meat Industry- Summary and Future;
- Module 10 Communications.

The cost of the training to date is €2.82 million plus travel of €1.52 million. This equates to a total cost per person excluding salary of €17,677. Training started in 1999 and was completed in 2008.

The course was established to train technical staff of DAFF as auxiliaries under the requirements of EU Directive 91/497/EEC. However EU Directive 91/497/EEC has since been amended by Regulation 854/2004. Technical staff will receive additional training to reflect 854/2004, which increased the theory element from 400 to 500 hours and the practical element from 200 to 400 hours.

Personnel Division within DAFF have indicated that senior veterinary management are considering taking into account the significant number of years experience participants on the programme working in meat inspection have, and that this service should count for any additional hours set down in the new Hygiene Directive.

**Appendix 9: Macro Costing of different scenarios (excl mixed plants)**

**Costing of Post Mortem Scenarios in Beef Plants Excluding Mixed Plants.**

Scenario Type	Typical Personnel Inputs	Cost of TVIs per Annum	Overall Cost of post-mortem service p.a.	Saving in TVI Cost p.a.	Overall Saving in providing Service per Annum.
<b>Present</b>	3.5 TVIs	€6.903 m	€6.903 m	€0 m	€0 m
<b>EMPLOY SUPPORT VI</b>					
<b>Scenario 1</b>	0 TVI, 1 Support VI, 3.5 TAs	€0 m	€6.015 m	€6.903 m	€0.888 m
<b>Scenario 2</b>	1 TVI, 1 Support VI, 2.5 TAs	€1.972 m	€6.862 m	€4.931 m	€0.041 m
<b>Scenario 3</b>	2 TVIs, 1 Support VI, 1.5 TAs	€3.944 m	€7.709 m	€2.958 m	- €0.806 m
<b>Scenario 4</b>	3 TVIs, 1 Support VI, 0.5 TA	€5.917 m	€8.556m	€0.986 m	- €1.653 m
<b>ENGAGE SUPPORT TVI</b>					
<b>Scenario 5</b>	0 TVI, 1 Support TVI, 3.5 TAs	€1.972 m	€5.910 m	€4.931 m	€0.993 m
<b>Scenario 6</b>	1 TVIs, 1 Support TVI, 2.5 TAs	€3.944 m	€6.757 m	€2.958 m	€0.146 m
<b>Scenario 7</b>	2 TVIs, 1 Support TVI, 1.5 TAs	€5.917 m	€7.604 m	€0.986 m	- €0.702 m
<b>Scenario 8</b>	3 TVIs, 1 Support TVI, 0.5 TA	€7.888 m	€8.451 m	- €0.986 m	- €1.549 m
<b>NO SUPPORT VI OR TVI</b>					
<b>Scenario 9</b>	0 TVI, 3.5 TAs	€0 m	€3.938 m	€6.903 m	€2.965 m
<b>Scenario 10</b>	1 TVIs, 2.5 TAs	€1.972 m	€4.785 m	€4.931 m	€2.118 m
<b>Scenario 11</b>	2 TVIs, 1.5 TAs	€3.944 m	€5.632 m	€2.958 m	€1.271 m
<b>Scenario 12</b>	3 TVIs, 0.5 TA	€5.917 m	€6.479 m	€0.986 m	€0.424 m

Appendix 9 contd: Macro Costing of different scenarios (excl mixed plants)

**Costing of Post Mortem Scenarios in Poultry Plants**

<b>Scenario Type</b>	<b>Typical Personnel Inputs</b>	<b>Cost of TVIs per Annum</b>	<b>Overall Cost of service per Annum</b>	<b>Saving in TVI Cost per Annum</b>	<b>Overall Saving in providing service per Annum</b>
<b>Present</b>	1 TVIs	€1.040 m	€1.040 m	€0 m	€0 m
<b>EMPLOY SUPPORT VI</b>					
<b>Scenario 1</b>	0 TVI 1 Support VI 1 TA	€0 m	€1.689 m	€1.040 m	- €0.648 m
<b>Scenario 2</b>	0 TVIs 1 Support TVI 1 TA	€1.040 m	€1.633 m	€0 m	-€0.593 m
<b>NO SUPPORT VI OR TVI</b>					
<b>Scenario 3</b>	1 TA	€0 m	€0.593 m	€1.040 m	€0.447 m <sup>a</sup>

<sup>a</sup> It is estimated that TAs currently conduct 20% of post mortem inspection hours in poultry plants. Therefore in both the micro and macro analysis in poultry plants, only 80% or €0.357 m out of total potential savings of €447 m are included in final calculations, as c.20% has already been delivered.

Appendix 9 contd: Macro Costing of different scenarios (excl mixed plants)

**Costing of Post Mortem Scenarios in Sheep Plants Excluding Mixed Plants.**

Scenario Type	Typical Personnel Inputs	Cost of TVIs per Annum	Overall Cost of service per Annum	Saving in TVI Cost per Annum	Overall Saving in cost of service per Annum
<b>Present</b>	2 TVIs	€0.777m	€0.777m	€0m	€0m
<b>EMPLOY SUPPORT VI</b>					
<b>Scenario 1</b>	0 TVI 1 Support VI 2 TAs	€0m	€0.852m	€0.777m	- €0.075m
<b>Scenario 2</b>	1 TVI 1 Support VI 1 TA	€0.388m	€1.019m	€0.388m	- €0.242m
<b>ENGAGE SUPPORT TVI</b>					
<b>Scenario 3</b>	0 TVI 1 Support TVI 2 TAs	€0.388m	€0.831m	€0.388m	- €0.055m
<b>Scenario 4</b>	1 TVI 1 Support TVI 1 TA	€0.777m	€0.998m	€0m	- €0.222m
<b>NO SUPPORT VI OR TVI</b>					
<b>Scenario 5</b>	0 TVI 2 TAs	€0m	€0.443m	€0.777m	€0.337m
<b>Scenario 6</b>	1 TVI 1 TA	€0.388m	€0.610m	€0.388m	€0.167m

Appendix 9 contd: Macro Costing of different scenarios (excl mixed plants)

**Costing of Post Mortem Scenarios in Pig Plants Excluding Mixed Plants.**

Scenario Type	Typical Personnel Inputs	Cost of TVIs per Annum	Overall Cost of service per Annum	Saving in TVI Cost per Annum	Overall Saving in cost of service per Annum
<b>Present</b>	3 TVIs	€2.429 m	€2.429 m	€0 m	€0 m
<b>EMPLOY SUPPORT VI</b>					
<b>Scenario 1</b>	0 TVI, 1 Support VI 3 TAs	€0 m	€2.239 m	€2.429m	€0.191 m
<b>Scenario 2</b>	1 TVI, 1 Support VI 2 TAs	€0.810 m	€2.586 m	€1.620m	- €0.157m
<b>Scenario 3</b>	2 TVIs, 1 Support VI 1 TA	€1.620 m	€2.934 m	€0.810m	- €0.505m
<b>ENGAGE SUPPORT TVI</b>					
<b>Scenario 4</b>	0 TVI, 1 Support TVI 3 TAs	€0.810 m	€2.196 m	€1.620m	€0.234 m
<b>Scenario 5</b>	1 TVI, 1 Support TVI 2 TAs	€1.620 m	€2.544 m	€0.810m	- €0.114m
<b>Scenario 6</b>	2 TVIs, 1 Support TVI 1 TA	€2.429 m	€2.891 m	€0 m	- €0.462m
<b>NO SUPPORT VI OR TVI</b>					
<b>Scenario 7</b>	0 TVIs, 3 TAs	€0 m	€1.386 m	€2.429m	€1.044 m
<b>Scenario 8</b>	1 TVI, 2 TAs	€0.810 m	€1.734 m	€1.620m	€0.696 m
<b>Scenario 9</b>	2 TVIs, 1 TA	€1.620 m	€2.082 m	€0.810m	€0.348 m

**Appendix 10: Macro costing of different scenarios (incl mixed plants)**

**Estimated Cost of Post Mortem Scenarios in Beef Plants Including Mixed Plants.**

Scenario Type	Typical Personnel Inputs	Cost of TVIs per Annum	Overall Cost of post-mortem service p.a.	Saving in TVI Cost p.a.	Overall Saving in providing Service per Annum
<b>Present</b>	3.5 TVIs	€0.083 m	€0.083 m	€0 m	€0 m
<b>EMPLOY SUPPORT TVI</b>					
<b>Scenario 1</b>	0 TVI, 1 Support VI 3.5 TAs	€0 m	€7.914 m	€0.083 m	€1.169 m
<b>Scenario 2</b>	1 TVI, 1 Support VI 2.5 TAs	€2.595 m	€9.029 m	€6.488 m	€0.054 m
<b>Scenario 3</b>	2 TVIs, 1 Support VI 1.5 TAs	€5.190 m	€10.143 m	€3.893 m	- €1.061 m
<b>Scenario 4</b>	3 TVIs, 1 Support VI 0.5 TA	€7.785 m	€11.258 m	€1.298 m	- €2.175 m
<b>ENGAGE SUPPORT TVI</b>					
<b>Scenario 5</b>	0 TVI, 1 Support TVI 3.5 TAs	€2.595 m	€7.776 m	€6.488 m	€1.306 m
<b>Scenario 6</b>	1 TVI, 1 Support TVI 2.5 TAs	€5.190 m	€8.891 m	€3.893 m	€0.192 m
<b>Scenario 7</b>	2 TVIs, 1 Support TVI 1.5 TAs	€7.785 m	€10.006 m	€1.298 m	- €0.923 m
<b>Scenario 8</b>	3 TVIs, 1 Support TVI 0.5 TA	€10.380 m	€11.120 m	- €1.298 m	- €2.038 m
<b>NO SUPPORT VI OR TVI</b>					
<b>Scenario 9</b>	0 TVI, 3.5 TAs	€0 m	€5.181 m	€0.083 m	€3.901 m
<b>Scenario 10</b>	1 TVI, 2.5 TAs	€2.595 m	€6.296 m	€6.488 m	€2.787 m
<b>Scenario 11</b>	2 TVIs, 1.5 TAs	€5.190 m	€7.411 m	€3.893 m	€1.672 m
<b>Scenario 12</b>	3 TVIs, 0.5 TA	€7.785 m	€8.525 m	€1.298 m	€0.557 m

Appendix 10 contd: Macro costing of different scenarios (incl mixed plants)

**Estimated Cost of Post Mortem Scenarios in Poultry Plants**

<b>Scenario Type</b>	<b>Typical Personnel Inputs</b>	<b>Cost of TVIs per Annum</b>	<b>Overall Cost of service per Annum</b>	<b>Saving in TVI Cost per Annum</b>	<b>Overall Saving in providing service per Annum</b>
<b>Present</b>	1 TVI	€1.040 m	€1.040 m	€0 m	€0 m
<b>EMPLOY SUPPORT VI</b>					
<b>Scenario 1</b>	0 TVI 1 Support VI 1 TA	€0 m	€1.689 m	€1.040 m	- €0.648 m
<b>ENGAGE SUPPORT TVI</b>					
<b>Scenario 2</b>	0 TVIs 1 Support TVI 1 TA	€1.040 m	€1.633 m	€0 m	-€0.593 m
<b>NO SUPPORT VI OR TVI</b>					
<b>Scenario 3</b>	1 TA	€0 m	€0.593 m	€1.040 m	€0.447 m <sup>a</sup>

<sup>a</sup> It is estimated that TAs currently conduct 20% of post mortem inspection hours in poultry plants. Therefore in both the micro and macro analysis in poultry plants, only 80% or €0.357 m out of total potential savings of €0.447 m are included in final calculations, as c.20% has already been delivered.

Appendix 10 contd: Macro costing of different scenarios (incl mixed plants)

**Estimated Cost of Post Mortem Scenarios in Sheep Plants Including Mixed Plants.**

<b>Scenario Type</b>	<b>Typical Personnel Inputs</b>	<b>Cost of TVIs per Annum</b>	<b>Overall Cost of service per Annum</b>	<b>Saving in TVI Cost per Annum</b>	<b>Overall Saving in cost of service per Annum</b>
<b>Present</b>	2 TVIs	€1.806 m	€1.806 m	€0 m	€0 m
<b>EMPLOY SUPPORT VI</b>					
<b>Scenario 1</b>	0 TVI 1 Support VI 2 TAs	€0 m	€1.982 m	€1.982 m	- €0.175 m
<b>Scenario 2</b>	1 TVI 1 Support VI 1 TA	€0.903 m	€2.370 m	€0.903 m	- €0.563 m
<b>ENGAGE SUPPORT TVI</b>					
<b>Scenario 3</b>	0 TVI 1 Support TVI 2 TAs	€0.903 m	€1.934 m	€0.903 m	- €0.127 m
<b>Scenario 4</b>	1 TVI 1 Support TVI 1 TA	€1.806 m	€2.322 m	€0 m	- €0.515 m
<b>NO SUPPORT VI OR TVI</b>					
<b>Scenario 5</b>	0 TVI 2 TAs	€0 m	€1.030 m	€1.806 m	€0.776 m
<b>Scenario 6</b>	1 TVI 1 TA	€0.903 m	€1.418 m	€0.903 m	€0.388 m

Appendix 10 contd: Macro costing of different scenarios (incl mixed plants)

**Estimated Cost of Post Mortem Scenarios in Pig Plants Including Mixed Plants.**

Scenario Type	Typical Personnel Inputs	Cost of TVIs per Annum	Overall Cost of service per Annum	Saving in TVI Cost per Annum	Overall Saving in cost of service per Annum
<b>Present</b>	3 TVIs	€2.670 m	€2.670 m	€0 m	€0 m
<b>EMPLOY SUPPORT VI</b>					
<b>Scenario 1</b>	0 TVI, 1 Support VI 3 TAs	€0 m	€2.460 m	€2.670 m	€0.210 m
<b>Scenario 2</b>	1 TVI, 1 Support VI 2 TAs	€0.890 m	€2.842 m	€1.780 m	- €0.173 m
<b>Scenario 3</b>	2 TVIs, 1 Support VI 1 TA	€1.780 m	€3.225 m	€0.890 m	- €0.555 m
<b>ENGAGE SUPPORT TVI</b>					
<b>Scenario 4</b>	0 TVI, 1 Support TVI 3 TAs	€0.890 m	€2.413 m	€1.780 m	€0.257 m
<b>Scenario 5</b>	1 TVI, 1 Support TVI 2 TAs	€1.780 m	€2.795 m	€0.890 m	- €0.125 m
<b>Scenario 6</b>	2 TVIs, 1 Support TVI 1 TA	€2.669 m	€3.177 m	€0 m	- €0.508 m
<b>NO SUPPORT VI OR TVI</b>					
<b>Scenario 7</b>	0 TVIs, 3 TAs	€0 m	€1.523 m	€2.670 m	€1.147 m
<b>Scenario 8</b>	1 TVI, 2 TAs	€0.890 m	€1.905 m	€1.780 m	€0.765 m
<b>Scenario 9</b>	2 TVIs, 1 TA	€1.780 m	€2.287 m	€0.890 m	€0.382 m

**Appendix 11 – Micro costing based on full substitution of post mortem TVIs**

<b>Appendix 11 Small Beef Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total PM Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	7.45 - 10.00	<b>2.25</b>	43.64	98.19
<b>TA</b>	Post mortem	8.30 - 10.00	1.5	43.64	65.46
<b>TA</b>	Post mortem	10.15 - 12.15	<b>2</b>	43.64	87.28
<b>TA</b>	Post mortem	10.15 - 12.15	2	43.64	87.28
<b>TA</b>	Post mortem	11.00 - 12.30	1.5	43.64	65.46
<b>TA</b>	Post Mortem	12.15 -14.30	2.25	43.64	98.19
<b>TA</b>	Post Mortem	12.15 -14.30	2.25	43.64	98.19
<b>Total Cost Per Day</b>					<b>600</b>
<b>No. of Kill Days Per Annum</b>					255
<b>Total Cost Per Annum under Option 1</b>					<b>153,013</b>
<b>PRESENT REGIME</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total PM Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	7.45 - 10.00	2.25	76.5	172.13
<b>TVI</b>	Post mortem	8.30 - 10.00	1.5	76.5	114.75
<b>TVI</b>	Post mortem	10.15 - 12.15	2	76.5	153.00
<b>TVI</b>	Post mortem	10.15 - 12.15	2	76.5	153.00
<b>TVI</b>	Post mortem	11.00 - 12.30	1.5	76.5	114.75
<b>TVI</b>	Post Mortem	12.15 -14.30	2.25	76.5	172.13
<b>TVI</b>	Post Mortem	12.15 -14.30	2.25	76.5	172.13
<b>Total Cost Per Day</b>					1,052
<b>Number of Kill Days Per Annum</b>					255
<b>Total Cost Per Annum under the Present Regime.</b>					<b>268,228</b>
<b>Savings from Adopting Option 1 in a Small Beef Plant</b>					<b>115,215</b>

**Appendix 11 Medium Size Beef Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)**

	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	8.00 - 10.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	8.00 - 10.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	8.00 - 10.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	11.00 - 1.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	11.00 - 1.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	11.00 - 1.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	2.00 - 4.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	2.00 - 4.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	2.00 - 4.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	2.00 - 4.30	2.5	43.64	109.10
<b>Total Cost per Day</b>					<b>1,091</b>
<b>Number of Kill Days Per Annum</b>					<b>203</b>
<b>Total Cost Per Annum under Option 1</b>					<b>221,473</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	11.00 - 1.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	11.00 - 1.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	11.00 - 1.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	2.00 - 4.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	2.00 - 4.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	2.00 - 4.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	2.00 - 4.30	2.5	76.5	191.25
<b>Total Cost Per Day</b>					<b>1,913</b>
<b>Number of Kill Days Per Annum</b>					<b>203</b>
<b>Total Cost Per Annum under the Present Regime</b>					<b>388,238</b>
<b>Savings from Adopting Option 1 in a Medium Size Beef Plant</b>					<b>166,765</b>

<b>Appendix 11 Large Size Beef Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	8.00 - 10.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	8.00 - 10.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	8.00 - 10.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	8.30 - 10.30	2	43.64	87.28
<b>TA</b>	Post mortem	10.50 - 13.50	3	43.64	130.92
<b>TA</b>	Post mortem	10.50 - 13.50	3	43.64	130.92
<b>TA</b>	Post mortem	10.50 - 13.50	3	43.64	130.92
<b>TA</b>	Post mortem	10.50 - 13.50	3	43.64	130.92
<b>TA</b>	Post mortem	14.20 - 16.35	2.25	43.64	98.19
<b>TA</b>	Post mortem	14.20 - 16.35	2.25	43.64	98.19
<b>TA</b>	Post mortem	14.20 - 16.35	2.25	43.64	98.19
<b>TA</b>	Post mortem	14.20 - 16.35	2.25	43.64	98.19
<b>Total Cost Per Day</b>					<b>1,331</b>
<b>Number of Kill Days Per Annum</b>					<b>214</b>
<b>Total Cost Per Annum under Option 1</b>					<b>284,838</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	8.30 - 10.30	2	76.5	153.00
<b>TVI</b>	Post mortem	10.50 - 13.50	3	76.5	229.50
<b>TVI</b>	Post mortem	10.50 - 13.50	3	76.5	229.50
<b>TVI</b>	Post mortem	10.50 - 13.50	3	76.5	229.50
<b>TVI</b>	Post mortem	10.50 - 13.50	3	76.5	229.50
<b>TVI</b>	Post mortem	14.20 - 16.35	2.25	76.5	172.13
<b>TVI</b>	Post mortem	14.20 - 16.35	2.25	76.5	172.13
<b>TVI</b>	Post mortem	14.20 - 16.35	2.25	76.5	172.13
<b>TVI</b>	Post mortem	14.20 - 16.35	2.25	76.5	172.13
<b>Total Cost Per Day</b>					<b>2,333</b>
<b>Number of Kill Days Per Annum</b>					<b>214</b>
<b>Total Cost Per Annum under the Present Regime</b>					<b>499,316</b>
<b>Savings from Adopting Option 1 in a Large Size Beef Plant</b>					<b><u>214,477</u></b>

**Appendix 11 Medium Size Sheep Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)**

	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	7.00 - 10.00	3	43.64	130.92
<b>TA</b>	Post mortem	7.00 - 10.00	3	43.64	130.92
<b>TA</b>	Post mortem	9.30 - 12.30	3	43.64	130.92
<b>TA</b>	Post mortem	10.00 - 13.00	3	43.64	130.92
<b>TA</b>	Post mortem	12.30 - 15.30	3	43.64	130.92
<b>TA</b>	Post mortem	13.30 - 16.30	3	43.64	130.92
<b>TA</b>	Post mortem	13.30 - 16.30	3	43.64	130.92
<b>Total Cost Per Day</b>					<b>916</b>
<b>Number of Kill Days Per Annum</b>					193
<b>Total Cost Per Annum</b>					<b>176,873</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	7.00 - 10.00	3	76.5	229.50
<b>TVI</b>	Post mortem	7.00 - 10.00	3	76.5	229.50
<b>TVI</b>	Post mortem	9.30 - 12.30	3	76.5	229.50
<b>TVI</b>	Post mortem	10.00 - 13.00	3	76.5	229.50
<b>TVI</b>	Post mortem	12.30 - 15.30	3	76.5	229.50
<b>TVI</b>	Post mortem	13.30 - 16.30	3	76.5	229.50
<b>TVI</b>	Post mortem	13.30 - 16.30	3	76.5	229.50
<b>Total Cost Per Day</b>					<b>1,607</b>
<b>Number of Kill Days Per Annum</b>					193
<b>Total Cost Per Annum under the Present Regime</b>					310,055
<b>Savings from Adopting Option 1 in a Medium Size Sheep Plant</b>					<b>133,182</b>

<b>Appendix 11 Large Size Sheep Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	7.30 - 10.00	2.5	43.64	109.10
<b>TA</b>	Post mortem	7.30 - 10.00	2.5	43.64	109.10
<b>TA</b>	Post mortem	10.15 - 13.15	3	43.64	130.92
<b>TA</b>	Post mortem	10.15 - 13.15	3	43.64	130.92
<b>TA</b>	Post mortem	13.45 - 16.00	2.25	43.64	98.19
<b>TA</b>	Post mortem	13.45 - 16.00	2.25	43.64	98.19
<b>Total Cost Per Day</b>					<b>676</b>
<b>Number of Kill Days Per Annum</b>					<b>212</b>
<b>Total Cost Per Annum under Option 1</b>					<b>143,401</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	7.30 - 10.00	2.5	76.5	191.25
<b>TVI</b>	Post mortem	7.30 - 10.00	2.5	76.5	191.25
<b>TVI</b>	Post mortem	10.15 - 13.15	3	76.5	229.50
<b>TVI</b>	Post mortem	10.15 - 13.15	3	76.5	229.50
<b>TVI</b>	Post mortem	13.45 - 16.00	2.25	76.5	172.13
<b>TVI</b>	Post mortem	13.45 - 16.00	2.25	76.5	172.13
<b>Total Cost Per Day</b>					<b>1,186</b>
<b>Number of Kill Days Per Annum</b>					212
<b>Total Cost Per Annum under the Present Regime</b>					251,379
<b>Savings from Adopting Option 1 in a Large Size Sheep Plant</b>					<b>107,978</b>

<b>Appendix 11 Small Size Poultry Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	8.30 - 9.30	1	43.64	43.64
<b>TA</b>	Post mortem	10.00 - 10.45	0.75	43.64	32.73
<b>TA</b>	Post mortem	11.00 - 13.30	2.5	43.64	109.10
<b>Total Cost Per Day</b>					<b>185.47</b>
<b>Number of Kill Days Per Annum</b>					<b>248</b>
<b>Total Cost Per Annum under Option 1</b>					<b>45,997</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	8.30 - 9.30	1	43.64	43.64
<b>TVI</b>	Post mortem	10.00 - 10.45	0.75	76.5	57.38
<b>TVI</b>	Post mortem	11.00 - 13.30	2.5	76.5	191.25
<b>Total Cost Per Day</b>					<b>292</b>
<b>Number of Kill Days Per Annum</b>					<b>248</b>
<b>Total Cost Per Annum under Present Regime</b>					<b>72,482</b>
<b>Savings from Adopting Option 1 in a Small Size Poultry Plant</b>					<b>26,485</b>

**Appendix 11 Medium Size Poultry Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)**

	Duties	Shift Time	Total Hours	Cost per hour	Total Cost
<b>TA</b>	Post mortem	10.30 - 1.00	2.5	43.64	109.10
<b>TA</b>	Post mortem	10.45 - 1.00	2.25	43.64	98.19
<b>Total Cost Per Day</b>					<b>207</b>
<b>Number of Kill Days Per Annum</b>					<b>249</b>
<b>Total Cost Per Annum under Option 1</b>					<b>51,615</b>
<b>Present Regime</b>					
	Duties	Shift Time	Total Hours	Cost per hour	Total Cost
<b>TVI</b>	Post mortem	10.30 - 1.00	2.5	76.5	191.25
<b>TVI</b>	Post mortem	10.45 - 1.00	2.25	76.5	172.13
<b>Total Cost Per Day</b>					<b>363</b>
<b>Number of Kill Days Per Annum</b>					249
<b>Total Cost Per Annum under Present Regime</b>					<b>90,480</b>
<b>Savings from Adopting Option 1 in a Medium Size Poultry Plant</b>					<b>38,865</b>

<b>Appendix 11 Large Size Poultry Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	05.45 - 08.00	2.25	43.64	98.19
<b>TA</b>	Post mortem	08.00 - 10.15	2.25	43.64	98.19
<b>TA</b>	Post mortem	15.50 - 18.05	2.25	43.64	98.19
<b>TA</b>	Post mortem	18.05 - 22.20	4.25	43.64	185.47
<b>Total Cost Per Day</b>					<b>480</b>
<b>Number of Kill Days Per Annum</b>					<b>249</b>
<b>Total Cost Per Annum under Option 1</b>					<b>119,530</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	05.45 - 08.00	2.25	43.64	98.19
<b>TA</b>	Post mortem	08.00 - 10.15	2.25	43.64	98.19
<b>TVI</b>	Post mortem	15.50 - 18.05	2.25	76.5	172.13
<b>TVI</b>	Post mortem	18.05 - 22.20	4.25	76.5	325.13
<b>Total Cost Per Day</b>					<b>694</b>
<b>Number of Kill Days Per Annum</b>					<b>249</b>
<b>Total Cost Per Annum under Present Regime</b>					<b>172,714</b>
<b>Savings from Adopting Option 1 in a Large Size Poultry Plant</b>					<b><u>53,184</u></b>

<b>Appendix 11 Small Size Pig Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost ph</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	08.00 - 10.45	2.75	43.64	120.01
<b>TA</b>	Post mortem	11.15 - 13.45	2.5	43.64	109.10
<b>TA</b>	Post mortem	14.00 - 16.45	2.75	43.64	120.01
<b>Total Cost Per Day</b>					<b>349</b>
<b>Number of Kill Days Per Annum</b>					<b>241</b>
<b>Total Cost Per Annum under Option 1</b>					<b>84,138</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost ph</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	08.00 - 10.45	2.75	76.5	210.38
<b>TVI</b>	Post mortem	11.15 - 13.45	2.5	76.5	191.25
<b>TVI</b>	Post mortem	14.00 - 16.45	2.75	76.5	210.38
<b>Total Cost Per Day</b>					<b>612</b>
<b>Number of Kill Days Per Annum</b>					<b>241</b>
<b>Total Cost Per Annum under the Present Regime</b>					<b>147,492</b>
<b>Savings from Adopting Option 1 in a Small Size Pig Plant</b>					<b>63,354</b>

<b>Appendix 11 Medium Size Pig Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	07.30 - 10.30	3	43.64	130.92
<b>TA</b>	Post mortem	07.30 - 10.30	3	43.64	130.92
<b>TA</b>	Post mortem	07.30 - 10.30	3	43.64	130.92
<b>TA</b>	Post mortem	10.45 - 14.30	3.75	43.64	163.65
<b>TA</b>	Post mortem	10.45 - 14.30	3.75	43.64	163.65
<b>TA</b>	Post mortem	10.45 - 14.30	3.75	43.64	163.65
<b>TA</b>	Post mortem	14.45 - 18.15	3.5	43.64	152.74
<b>TA</b>	Post mortem	14.45 - 18.15	3.5	43.64	152.74
<b>TA</b>	Post mortem	14.45 - 18.15	3.5	43.64	152.74
<b>Total Cost Per Day</b>					1342
<b>Number of Kill Days Per Annum</b>					251
<b>Total Cost Per Annum under Option 1</b>					336824
<b>Present Regime</b>					
<b>TVI</b>	Post mortem	07.30 - 10.30	3	76.5	229.50
<b>TVI</b>	Post mortem	07.30 - 10.30	3	76.5	229.50
<b>TVI</b>	Post mortem	07.30 - 10.30	3	76.5	229.50
<b>TVI</b>	Post mortem	10.45 - 14.30	3.75	76.5	286.88
<b>TVI</b>	Post mortem	10.45 - 14.30	3.75	76.5	286.88
<b>TVI</b>	Post mortem	10.45 - 14.30	3.75	76.5	286.88
<b>TVI</b>	Post mortem	14.45 - 18.15	3.5	76.5	267.75
<b>TVI</b>	Post mortem	14.45 - 18.15	3.5	76.5	267.75
<b>TVI</b>	Post mortem	14.45 - 18.15	3.5	76.5	267.75
<b>Total Cost Per Day</b>					2352
<b>Number of Kill Days Per Annum</b>					251
<b>Total Cost Per Annum under Present Regime</b>					590446
<b>Savings from Adopting Option 1 in a Medium Size Pig Plant</b>					253,622

<b>Appendix 11 Large Size Pig Plant - Option 1 (Phased Substitution of TAs for all PM TVIs)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
TA	Post mortem	07.45 - 10.45	3	43.64	130.92
TA	Post mortem	07.45 - 10.45	3	43.64	130.92
TA	Post mortem	07.45 - 10.45	3	43.64	130.92
TA	Post mortem	07.45 - 10.45	3	43.64	130.92
TA	Post mortem	10.45 - 13.45	3	43.64	130.92
TA	Post mortem	10.45 - 13.45	3	43.64	130.92
TA	Post mortem	10.45 - 13.45	3	43.64	130.92
TA	Post mortem	10.45 - 13.45	3	43.64	130.92
TA	Post mortem	13.45 - 16.45	3	43.64	130.92
TA	Post mortem	13.45 - 16.45	3	43.64	130.92
TA	Post mortem	13.45 - 16.45	3	43.64	130.92
TA	Post mortem	13.45 - 16.45	3	43.64	130.92
<b>Total Cost Per Day</b>					1571
<b>Number of Kill Days Per Annum</b>					244
<b>Total Cost Per Annum under Option 1</b>					383334
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
TVI	Post mortem	07.45 - 10.45	3	76.5	229.5
TVI	Post mortem	07.45 - 10.45	3	76.5	229.5
TVI	Post mortem	07.45 - 10.45	3	76.5	229.5
TVI	Post mortem	07.45 - 10.45	3	76.5	229.5
TVI	Post mortem	10.45 - 13.45	3	76.5	229.5
TVI	Post mortem	10.45 - 13.45	3	76.5	229.5
TVI	Post mortem	10.45 - 13.45	3	76.5	229.5
TVI	Post mortem	10.45 - 13.45	3	76.5	229.5
TVI	Post mortem	13.45 - 16.45	3	76.5	229.5
TVI	Post mortem	13.45 - 16.45	3	76.5	229.5
TVI	Post mortem	13.45 - 16.45	3	76.5	229.5
TVI	Post mortem	13.45 - 16.45	3	76.5	229.5
<b>Total Cost Per Day</b>					2754
<b>Number of Kill Days Per Annum</b>					244
<b>Total Cost Per Annum under Present Regime</b>					671976
<b>Savings from Adopting Option 1 in a Large Size Pig Plant</b>					288,642

**Appendix 12: Micro costing based on retention of one TVI position per slaughter line**

<b>Appendix 12 Small Beef Plant - Option 2 (Phased Substitution of TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total PM Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	7.45 - 10.00	<b>2.25</b>	76.5	172.13
<b>TA</b>	Post mortem	8.30 - 10.00	1.5	43.64	65.46
<b>TVI</b>	Post mortem	10.15 - 12.15	<b>2</b>	76.5	153.00
<b>TA</b>	Post mortem	10.15 - 12.15	2	43.64	87.28
<b>TA</b>	Post mortem	11.00 - 12.30	1.5	43.64	65.46
<b>TVI</b>	Post Mortem	12.15 -14.30	2.25	76.5	172.13
<b>TA</b>	Post Mortem	12.15 -14.30	2.25	43.64	98.19
<b>Total Cost Per Day</b>					<b>814</b>
<b>No. of Kill Days Per Annum</b>					255
<b>Total Cost Per Annum under Option 2</b>					<b>207,478</b>
<b>PRESENT REGIME</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total PM Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	7.45 - 10.00	2.25	76.5	172.13
<b>TVI</b>	Post mortem	8.30 - 10.00	1.5	76.5	114.75
<b>TVI</b>	Post mortem	10.15 - 12.15	2	76.5	153.00
<b>TVI</b>	Post mortem	10.15 - 12.15	2	76.5	153.00
<b>TVI</b>	Post mortem	11.00 - 12.30	1.5	76.5	114.75
<b>TVI</b>	Post Mortem	12.15 -14.30	2.25	76.5	172.13
<b>TVI</b>	Post Mortem	12.15 -14.30	2.25	76.5	172.13
<b>Total Cost Per Day</b>					1,052
<b>Number of Kill Days Per Annum</b>					255
<b>Total Cost Per Annum under the Present Regime.</b>					<b>268,228</b>
<b>Savings from Adopting Option 2 in a Small Beef Plant</b>					<b>60,750</b>

**Appendix 12 Medium Size Beef Plant - Option 2 (Phased Substitution of TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)**

	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TA</b>	Post mortem	8.00 - 10.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	8.00 - 10.30	2.5	43.64	109.10
<b>TVI</b>	Post mortem	11.00 - 1.30	2.5	76.5	191.25
<b>TA</b>	Post mortem	11.00 - 1.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	11.00 - 1.30	2.5	43.64	109.10
<b>TVI</b>	Post mortem	2.00 - 4.30	2.5	76.5	191.25
<b>TA</b>	Post mortem	2.00 - 4.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	2.00 - 4.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	2.00 - 4.30	2.5	43.64	109.10
<b>Total Cost per Day</b>					<b>1337</b>
<b>Number of Kill Days Per Annum</b>					<b>203</b>
<b>Total Cost Per Annum</b>					<b>271,502</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	11.00 - 1.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	11.00 - 1.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	11.00 - 1.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	2.00 - 4.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	2.00 - 4.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	2.00 - 4.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	2.00 - 4.30	2.5	76.5	191.25
<b>Total Cost Per Day</b>					<b>1,913</b>
<b>Number of Kill Days Per Annum</b>					<b>203</b>
<b>Total Cost Per Annum under the Present Regime</b>					<b>388,238</b>
<b>Savings from Adopting Option 2 in a Medium Size Beef Plant</b>					<b>116,733</b>

**Appendix 12 Large Size Beef Plant - Option 2 (Phased Substitution of TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)**

	Duties	Shift Time	Total Hours	Cost Per Hour	Total Cost
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TA</b>	Post mortem	8.00 - 10.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	8.00 - 10.30	2.5	43.64	109.10
<b>TA</b>	Post mortem	8.30 - 10.30	2	43.64	87.28
<b>TVI</b>	Post mortem	10.50 - 13.50	3	76.5	229.50
<b>TA</b>	Post mortem	10.50 - 13.50	3	43.64	130.92
<b>TA</b>	Post mortem	10.50 - 13.50	3	43.64	130.92
<b>TA</b>	Post mortem	10.50 - 13.50	3	43.64	130.92
<b>TVI</b>	Post mortem	14.20 - 16.35	2.25	76.5	172.13
<b>TA</b>	Post mortem	14.20 - 16.35	2.25	43.64	98.19
<b>TA</b>	Post mortem	14.20 - 16.35	2.25	43.64	98.19
<b>TA</b>	Post mortem	14.20 - 16.35	2.25	43.64	98.19
<b>Total Cost Per Day</b>					<b>1,586</b>
<b>Number of Kill Days Per Annum</b>					<b>214</b>
<b>Total Cost Per Annum under Option 2</b>					<b>339,337</b>
<b>Present Regime</b>					
	Duties	Shift Time	Total Hours	Cost Per Hour	Total Cost
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	8.00 - 10.30	2.5	76.5	191.25
<b>TVI</b>	Post mortem	8.30 - 10.30	2	76.5	153.00
<b>TVI</b>	Post mortem	10.50 - 13.50	3	76.5	229.50
<b>TVI</b>	Post mortem	10.50 - 13.50	3	76.5	229.50
<b>TVI</b>	Post mortem	10.50 - 13.50	3	76.5	229.50
<b>TVI</b>	Post mortem	10.50 - 13.50	3	76.5	229.50
<b>TVI</b>	Post mortem	14.20 - 16.35	2.25	76.5	172.13
<b>TVI</b>	Post mortem	14.20 - 16.35	2.25	76.5	172.13
<b>TVI</b>	Post mortem	14.20 - 16.35	2.25	76.5	172.13
<b>TVI</b>	Post mortem	14.20 - 16.35	2.25	76.5	172.13
<b>Total Cost Per Day</b>					<b>2,333</b>
<b>Number of Kill Days Per Annum</b>					<b>214</b>
<b>Total Cost Per Annum under the Present Regime</b>					<b>499,316</b>
<b>Savings from Adopting Option 2 in a Large Size Beef Plant</b>					<b>159,979</b>

<b>Appendix 12 Medium Size Sheep Plant - Option 2 (Phased Substitution of TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	7.00 - 10.00	3	76.5	229.50
<b>TA</b>	Post mortem	7.00 - 10.00	3	43.64	130.92
<b>TVI</b>	Post mortem	9.30 - 12.30	3	76.5	229.50
<b>TA</b>	Post mortem	10.00 - 13.00	3	43.64	130.92
<b>TVI</b>	Post mortem	12.30 - 15.30	3	76.5	229.50
<b>TA</b>	Post mortem	13.30 - 16.30	3	43.64	130.92
<b>TA</b>	Post mortem	13.30 - 16.30	3	43.64	130.92
<b>Total Cost Per Day</b>					<b>1,212</b>
<b>Number of Kill Days Per Annum</b>					<b>193</b>
<b>Total Cost Per Annum</b>					<b>233,951</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	7.00 - 10.00	3	76.5	229.50
<b>TVI</b>	Post mortem	7.00 - 10.00	3	76.5	229.50
<b>TVI</b>	Post mortem	9.30 - 12.30	3	76.5	229.50
<b>TVI</b>	Post mortem	10.00 - 13.00	3	76.5	229.50
<b>TVI</b>	Post mortem	12.30 - 15.30	3	76.5	229.50
<b>TVI</b>	Post mortem	13.30 - 16.30	3	76.5	229.50
<b>TVI</b>	Post mortem	13.30 - 16.30	3	76.5	229.50
<b>Total Cost Per Day</b>					<b>1,607</b>
<b>Number of Kill Days Per Annum</b>					<b>193</b>
<b>Total Cost Per Annum under the Present Regime</b>					<b>310,055</b>
<b>Savings from Adopting Option 2 in a Medium Size Sheep Plant</b>					<b><u>76,104</u></b>

**Appendix 12 Large Size Sheep Plant - Option 2 (Phased Substitution of TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)**

	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	7.30 - 10.00	2.5	76.5	191.25
<b>TA</b>	Post mortem	7.30 - 10.00	2.5	43.64	109.10
<b>TVI</b>	Post mortem	10.15 - 13.15	3	76.5	229.50
<b>TA</b>	Post mortem	10.15 - 13.15	3	43.64	130.92
<b>TVI</b>	Post mortem	13.45 - 16.00	2.25	76.5	172.13
<b>TA</b>	Post mortem	13.45 - 16.00	2.25	43.64	98.19
<b>Total Cost Per Day</b>					<b>931</b>
<b>Number of Kill Days Per Annum</b>					<b>212</b>
<b>Total Cost Per Annum</b>					<b>197,390</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	7.30 - 10.00	2.5	76.5	191.25
<b>TVI</b>	Post mortem	7.30 - 10.00	2.5	76.5	191.25
<b>TVI</b>	Post mortem	10.15 - 13.15	3	76.5	229.50
<b>TVI</b>	Post mortem	10.15 - 13.15	3	76.5	229.50
<b>TVI</b>	Post mortem	13.45 - 16.00	2.25	76.5	172.13
<b>TVI</b>	Post mortem	13.45 - 16.00	2.25	76.5	172.13
<b>Total Cost Per Day</b>					<b>1,186</b>
<b>Number of Kill Days Per Annum</b>					212
<b>Total Cost Per Annum under the Present Regime</b>					251,379
<b>Savings from Adopting Option 2 in a Large Size Sheep Plant</b>					<b>53,989</b>

**Appendix 12 Small Size Poultry Plant - Option 2 (Phased Substitution of TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)**

	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	8.30 - 9.30	1	43.64	43.64
<b>TA</b>	Post mortem	10.00 - 10.45	0.75	43.64	32.73
<b>TA</b>	Post mortem	11.00 - 13.30	2.5	43.64	109.10
<b>Total Cost Per Day</b>					<b>185.47</b>
<b>Number of Kill Days Per Annum</b>					<b>248</b>
<b>Total Cost Per Annum under Option 2</b>					<b>45,997</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	8.30 - 9.30	1	43.64	43.64
<b>TVI</b>	Post mortem	10.00 - 10.45	0.75	76.5	57.38
<b>TVI</b>	Post mortem	11.00 - 13.30	2.5	76.5	191.25
<b>Total Cost Per Day</b>					<b>292</b>
<b>Number of Kill Days Per Annum</b>					248
<b>Total Cost Per Annum under the Present Regime</b>					72,482
<b>Savings from Adopting Option 2 in a Small Size Poultry Plant</b>					<b><u>26,485</u></b>

**Appendix 12 Medium Size Poultry Plant - Option 2 (Phased Substitution of  
TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)**

	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost ph</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	10.30 - 1.00	2.5	43.64	109.10
<b>TA</b>	Post mortem	10.45 - 1.00	2.25	43.64	98.19
<b>Total Cost Per Day</b>					<b>207</b>
<b>Number of Kill Days Per Annum</b>					<b>249</b>
<b>Total Cost Per Annum under Option 2</b>					<b>51,615</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost ph</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	10.30 - 1.00	2.5	76.5	191.25
<b>TVI</b>	Post mortem	10.45 - 1.00	2.25	76.5	172.13
<b>Total Cost Per Day</b>					<b>363</b>
<b>Number of Kill Days Per Annum</b>					<b>249</b>
<b>Total Cost Per Annum under Present Regime</b>					<b>90,480</b>
<b>Savings from Adopting Option 2 in a Medium Size Poultry Plant</b>					<b><u>38,865</u></b>

<b>Appendix 12 Large Size Poultry Plant - Option 2 (Phased Substitution of TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	05.45 - 08.00	2.25	43.64	98.19
<b>TA</b>	Post mortem	08.00 - 10.15	2.25	43.64	98.19
<b>TA</b>	Post mortem	15.50 - 18.05	2.25	43.64	98.19
<b>TA</b>	Post mortem	18.05 - 22.20	4.25	43.64	185.47
<b>Total Cost Per Day</b>					<b>480</b>
<b>Number of Kill Days Per Annum</b>					<b>249</b>
<b>Total Cost Per Annum under Option 2</b>					<b>119,530</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	05.45 - 08.00	2.25	43.64	98.19
<b>TA</b>	Post mortem	08.00 - 10.15	2.25	43.64	98.19
<b>TVI</b>	Post mortem	15.50 - 18.05	2.25	76.5	172.13
<b>TVI</b>	Post mortem	18.05 - 22.20	4.25	76.5	325.13
<b>Total Cost Per Day</b>					<b>694</b>
<b>Number of Kill Days Per Annum</b>					<b>249</b>
<b>Total Cost Per Annum under Present Regime</b>					<b>172,714</b>
<b>Savings from Adopting Option 2 in a Large Size Poultry Plant</b>					<b><u>53,184</u></b>

<b>Appendix 12 Small Size Pig Plant - Option 2 (Phased Substitution of TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost ph</b>	<b>Total Cost</b>
<b>TA</b>	Post mortem	08.00 - 10.45	2.75	43.64	120.01
<b>TVI</b>	Post mortem	11.15 - 13.45	2.5	76.5	191.25
<b>TA</b>	Post mortem	14.00 - 16.45	2.75	43.64	120.01
<b>Total Cost Per Day</b>					<b>431</b>
<b>Number of Kill Days Per Annum</b>					<b>241</b>
<b>Total Cost Per Annum under Option 2</b>					<b>103,936</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost ph</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	08.00 - 10.45	2.75	76.5	210.38
<b>TVI</b>	Post mortem	11.15 - 13.45	2.5	76.5	191.25
<b>TVI</b>	Post mortem	14.00 - 16.45	2.75	76.5	210.38
<b>Total Cost Per Day</b>					<b>612</b>
<b>Number of Kill Days Per Annum</b>					<b>241</b>
<b>Total Cost Per Annum under the Present Regime</b>					<b>147,492</b>
<b>Savings from Adopting Option 2 in a Small Size Pig Plant</b>					<b>43,556</b>

**Appendix 12 Medium Size Pig Plant - Option 2 (Phased Substitution of TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)**

	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	07.30 - 10.30	3	76.5	229.50
<b>TA</b>	Post mortem	07.30 - 10.30	3	43.64	130.92
<b>TA</b>	Post mortem	07.30 - 10.30	3	43.64	130.92
<b>TVI</b>	Post mortem	10.45 - 14.30	3.75	76.5	286.88
<b>TA</b>	Post mortem	10.45 - 14.30	3.75	43.64	163.65
<b>TA</b>	Post mortem	10.45 - 14.30	3.75	43.64	163.65
<b>TVI</b>	Post mortem	14.45 - 18.15	3.5	76.5	267.75
<b>TA</b>	Post mortem	14.45 - 18.15	3.5	43.64	152.74
<b>TA</b>	Post mortem	14.45 - 18.15	3.5	43.64	152.74
<b>Total Cost Per Day</b>					<b>1,679</b>
<b>Number of Kill Days Per Annum</b>					<b>251</b>
<b>Total Cost Per Annum under Option 2</b>					<b>421,365</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	07.30 - 10.30	3	76.5	229.50
<b>TVI</b>	Post mortem	07.30 - 10.30	3	76.5	229.50
<b>TVI</b>	Post mortem	07.30 - 10.30	3	76.5	229.50
<b>TVI</b>	Post mortem	10.45 - 14.30	3.75	76.5	286.88
<b>TVI</b>	Post mortem	10.45 - 14.30	3.75	76.5	286.88
<b>TVI</b>	Post mortem	10.45 - 14.30	3.75	76.5	286.88
<b>TVI</b>	Post mortem	14.45 - 18.15	3.5	76.5	267.75
<b>TVI</b>	Post mortem	14.45 - 18.15	3.5	76.5	267.75
<b>TVI</b>	Post mortem	14.45 - 18.15	3.5	76.5	267.75
<b>Total Cost Per Day</b>					<b>2,352</b>
<b>Number of Kill Days Per Annum</b>					<b>251</b>
<b>Total Cost Per Annum under Present Regime</b>					<b>590,446</b>
<b>Savings from Adopting Option 2 in a Medium Size Pig Plant</b>					<b>169,081</b>

<b>Appendix 12 Large Size Pig Plant - Option 2 (Phased Substitution of TAs for PM TVIs with retention of 1 PM TVI per Slaughter Line)</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	07.45 - 10.45	3	76.5	229.50
<b>TA</b>	Post mortem	07.45 - 10.45	3	43.64	130.92
<b>TA</b>	Post mortem	07.45 - 10.45	3	43.64	130.92
<b>TA</b>	Post mortem	07.45 - 10.45	3	43.64	130.92
<b>TVI</b>	Post mortem	10.45 - 13.45	3	76.5	229.50
<b>TA</b>	Post mortem	10.45 - 13.45	3	43.64	130.92
<b>TA</b>	Post mortem	10.45 - 13.45	3	43.64	130.92
<b>TA</b>	Post mortem	10.45 - 13.45	3	43.64	130.92
<b>TVI</b>	Post mortem	13.45 - 16.45	3	76.5	229.50
<b>TA</b>	Post mortem	13.45 - 16.45	3	43.64	130.92
<b>TA</b>	Post mortem	13.45 - 16.45	3	43.64	130.92
<b>TA</b>	Post mortem	13.45 - 16.45	3	43.64	130.92
<b>Total Cost Per Day</b>					<b>1,867</b>
<b>Number of Kill Days Per Annum</b>					<b>244</b>
<b>Total Cost Per Annum under Option 2</b>					<b>455,494</b>
<b>Present Regime</b>					
	<b>Duties</b>	<b>Shift Time</b>	<b>Total Hours</b>	<b>Cost Per Hour</b>	<b>Total Cost</b>
<b>TVI</b>	Post mortem	07.45 - 10.45	3	76.5	229.50
<b>TVI</b>	Post mortem	07.45 - 10.45	3	76.5	229.50
<b>TVI</b>	Post mortem	07.45 - 10.45	3	76.5	229.50
<b>TVI</b>	Post mortem	07.45 - 10.45	3	76.5	229.50
<b>TVI</b>	Post mortem	10.45 - 13.45	3	76.5	229.50
<b>TVI</b>	Post mortem	10.45 - 13.45	3	76.5	229.50
<b>TVI</b>	Post mortem	10.45 - 13.45	3	76.5	229.50
<b>TVI</b>	Post mortem	10.45 - 13.45	3	76.5	229.50
<b>TVI</b>	Post mortem	13.45 - 16.45	3	76.5	229.50
<b>TVI</b>	Post mortem	13.45 - 16.45	3	76.5	229.50
<b>TVI</b>	Post mortem	13.45 - 16.45	3	76.5	229.50
<b>TVI</b>	Post mortem	13.45 - 16.45	3	76.5	229.50
<b>Total Cost Per Day</b>					<b>2,754</b>
<b>Number of Kill Days Per Annum</b>					<b>244</b>
<b>Total Cost Per Annum under Present Regime</b>					<b>671,976</b>
<b>Savings from Adopting Option 2 in a Large Size Pig Plant</b>					<b>216,482</b>

**Appendix 13: Age Profile of TAOs and TVIs in Meat Plants**

<b>Age profile</b>	<b>% TAOs</b>
<b>&lt; 35</b>	39%
<b>35 – 45</b>	28%
<b>45 – 55</b>	26%
<b>55 - 65</b>	7%
<b>Total Staff</b>	176

**TVI Age Profile**

Age 22----30	118	15%	} 41%
Age 31---40	207	26%	
Age 41---50	141	18%	} 35%
Age 51---60	141	18%	
Age 61---70	136	17%	} 24%
Age 71----75	42	5%	
Age 76----81	15	2%	

Re the TVI age profile, 151 of the 800 TVIs in this analysis (i.e. those whose services were used in 2006) were aged 65 or over.

## Appendix 14A – Case Study / Savings Estimate

Appendix 14A - Case study/savings estimate						
Option 1 + Support VI						
Line		Duties	Shift Time	Total Hours	Cost Per Hour	Total Cost
A	TA	Post mortem	7.55 - 10.55	3	43.64	130.92
A	TA	Post mortem	7.55 - 9.55	2	43.64	87.28
A	TA	Post mortem	7.55 - 9.55	2	43.64	87.28
B	TA	Post mortem	7.15 - 10.15	3	43.64	130.92
B	TA	Post mortem	7.15 - 10.15	3	43.64	130.92
A	TA	Post mortem	10.00 - 13.00	3	43.64	130.92
A	TA	Post mortem	10.10 - 12.40	2.5	43.64	109.10
A	TA	Post mortem	10.10 - 13.10	3	43.64	130.92
A	TA	Post mortem	10.10 - 13.10	3	43.64	130.92
B	TA	Post mortem	10.30 - 13.30	3	43.64	130.92
B	TA	Post mortem	10.30 - 13.30	3	43.64	130.92
A	TA	Post mortem	13.15 - 17.15	4	43.64	174.56
A	TA	Post mortem	13.15 - 17.15	4	43.64	174.56
A	TA	Post mortem	13.15 - 17.15	4	43.64	174.56
A	TA	Post mortem	13.15 - 17.15	4	43.64	174.56
B	TA	Post mortem	14.00 - 16.15	2.25	43.64	98.19
B	TA	Post mortem	14.00 - 16.15	2.25	43.64	98.19
<b>Total Cost Per Day</b>						<b>2,226</b>
<b>Number of Kill Days Per Annum</b>						<b>208</b>
<b>Total Cost Per Annum Under Option 1</b>						462,933
<b>Cost of a Support VI for 208 days is €120,923 (€581 per day)</b>						<b>120,923</b>
<b>Total Cost Per Annum Under Option 1 + a Support VI</b>						583,856
Present Regime						
Line		Duties	Shift Time	Total Hours	Cost Per Hour	Total Cost
A	TVI	Post mortem	7.55 - 10.55	3	76.5	229.50
A	TVI	Post mortem	7.55 - 9.55	2	76.5	153.00
A	TVI	Post mortem	7.55 - 9.55	2	76.5	153.00
B	TVI	Post mortem	7.15 - 10.15	3	76.5	229.50
B	TVI	Post mortem	7.15 - 10.15	3	76.5	229.50
A	TVI	Post mortem	10.00 - 13.00	3	76.5	229.50
A	TVI	Post mortem	10.10 - 12.40	2.5	76.5	191.25
A	TVI	Post mortem	10.10 - 13.10	3	76.5	229.50
A	TVI	Post mortem	10.10 - 13.10	3	76.5	229.50
B	TVI	Post mortem	10.30 - 13.30	3	76.5	229.50
B	TVI	Post mortem	10.30 - 13.30	3	76.5	229.50
A	TVI	Post mortem	13.15 - 17.15	4	76.5	306.00
A	TVI	Post mortem	13.15 - 17.15	4	76.5	306.00
A	TVI	Post mortem	13.15 - 17.15	4	76.5	306.00
A	TVI	Post mortem	13.15 - 17.15	4	76.5	306.00
B	TVI	Post mortem	14.00 - 16.15	2.25	76.5	172.13
B	TVI	Post mortem	14.00 - 16.15	2.25	76.5	172.13
<b>Total Cost Per Day</b>						<b>3,902</b>
<b>Number of Kill Days Per Annum</b>						208
<b>Total Cost Per Annum under Present Regime</b>						811,512
<b>Savings from Adopting Option 1 + a Support VI in a Large Bi-Species Plant</b>						<b>227,656</b>

**Appendix 14A - Case study/savings estimate**

**Option 2**

Line		Duties	Shift Time	Total Hours	Cost Per Hour	Total Cost
A	TVI	Post mortem	7.55 - 10.55	3	76.5	229.50
A	TA	Post mortem	7.55 - 9.55	2	43.64	87.28
A	TA	Post mortem	7.55 - 9.55	2	43.64	87.28
B	TVI	Post mortem	7.15 - 10.15	3	76.5	229.50
B	TA	Post mortem	7.15 - 10.15	3	43.64	130.92
A	TVI	Post mortem	10.00 - 13.00	3	76.5	229.50
A	TA	Post mortem	10.10 - 12.40	2.5	43.64	109.10
A	TA	Post mortem	10.10 - 13.10	3	43.64	130.92
A	TA	Post mortem	10.10 - 13.10	3	43.64	130.92
B	TVI	Post mortem	10.30 - 13.30	3	76.5	229.50
B	TA	Post mortem	10.30 - 13.30	3	43.64	130.92
A	TVI	Post mortem	13.15 - 17.15	4	76.5	306.00
A	TA	Post mortem	13.15 - 17.15	4	43.64	174.56
A	TA	Post mortem	13.15 - 17.15	4	43.64	174.56
A	TA	Post mortem	13.15 - 17.15	4	43.64	174.56
B	TVI	Post mortem	14.00 - 16.15	2.25	76.5	172.13
B	TA	Post mortem	14.00 - 16.15	2.25	43.64	98.19
<b>Total Cost Per Day</b>						<b>2,825</b>
<b>Number of Kill Days Per Annum</b>						<b>208</b>
<b>Total Cost Per Annum Under Option 2</b>						<b>587,670</b>
<b>Present Regime</b>						
Line		Duties	Shift Time	Total Hours	Cost Per Hour	Total Cost
A	TVI	Post mortem	7.55 - 10.55	3	76.5	229.50
A	TVI	Post mortem	7.55 - 9.55	2	76.5	153.00
A	TVI	Post mortem	7.55 - 9.55	2	76.5	153.00
B	TVI	Post mortem	7.15 - 10.15	3	76.5	229.50
B	TVI	Post mortem	7.15 - 10.15	3	76.5	229.50
A	TVI	Post mortem	10.00 - 13.00	3	76.5	229.50
A	TVI	Post mortem	10.10 - 12.40	2.5	76.5	191.25
A	TVI	Post mortem	10.10 - 13.10	3	76.5	229.50
A	TVI	Post mortem	10.10 - 13.10	3	76.5	229.50
B	TVI	Post mortem	10.30 - 13.30	3	76.5	229.50
B	TVI	Post mortem	10.30 - 13.30	3	76.5	229.50
A	TVI	Post mortem	13.15 - 17.15	4	76.5	306.00
A	TVI	Post mortem	13.15 - 17.15	4	76.5	306.00
A	TVI	Post mortem	13.15 - 17.15	4	76.5	306.00
A	TVI	Post mortem	13.15 - 17.15	4	76.5	306.00
B	TVI	Post mortem	14.00 - 16.15	2.25	76.5	172.13
B	TVI	Post mortem	14.00 - 16.15	2.25	76.5	172.13
<b>Total Cost Per Day</b>						<b>3902</b>
<b>Number of Kill Days Per Annum</b>						<b>208</b>
<b>Total Cost Per Annum under Present Regime</b>						<b>811,512</b>
<b>Savings from Adopting Option 2 in a Large Bi-Species Plant</b>						<b>223,842</b>

**Appendix 14B – Case Study / Sample Roster**

<b>Case study (two slaughter lines)</b>				
Sample Roster Sheet (Option 1)				
	Duties	Shift time	Shift time	Total hours
TA	Post mortem	7.55 - 10.55	13.15 - 15.15	5
TA	Post mortem	7.55 - 9.55	13.15 - 15.15	4
TA	Post mortem	7.55 - 9.55	14.00 - 16.15	4.25
TA	Post mortem	7.15 - 10.15	13.15 - 15.15	5
TA	Post mortem	7.15 - 10.15	13.15 - 15.15	5
TA	Post mortem	10.00 - 13.00	15.15 - 17.15	5
TA	Post mortem	10.10 - 13.10	15.15 - 17.15	5
TA	Post mortem	10.10 - 13.10	15.15 - 17.15	5
TA	Post mortem	10.10 - 12.40	14.00 - 16.15	4.75
TA	Post mortem	10.30 - 13.30	15.15 - 17.15	5
TA	Post mortem	10.30 - 13.30		3

**Total TA hours** 51

**Total TA staff** 11

**Slaughter days p.a.** 208

**Average days worked by TAOs p.a.** 227

<b>Case Study (two slaughter lines)</b>				
Sample Roster Sheet (Option 2)				
	Duties	Shift time	Shift time	Total hours
TVI	Post mortem	7.55 - 10.55	13.15 - 15.15	5
TVI	Post mortem	7.15 - 10.15	14.00 - 16.15	5.25
TVI	Post mortem	10.00 - 13.00	15.15 - 17.15	5
TVI	Post mortem	10.30 - 13.30		3
TA	Post mortem	7.55 - 9.55	13.15 - 15.15	4
TA	Post mortem	7.55 - 9.55	13.15 - 15.15	4
TA	Post mortem	7.15 - 10.15	13.15 - 15.15	5
TA	Post mortem	10.10 - 13.10	15.15 - 17.15	5
TA	Post mortem	10.10 - 13.10	15.15 - 17.15	5
TA	Post mortem	10.10 - 12.40	14.00 - 16.15	4.75
TA	Post mortem	10.30 - 13.30	15.15 - 17.15	5

**Total TVI & TA hours** 51

**Total TVI staff** 4

**Total TA staff** 7

## Appendix 15 - Report of the VFM Review Study Tour of the Danish Meat Inspection System

Report of the VFM Review Study Tour of the Danish Meat Inspection System:

**Date:** 4<sup>th</sup> – 6<sup>th</sup> July 2007.

**DAF Attendance:** Tom Loftus, Paula BarryWalsh and David Buckley.

### **Country Profile.**

**Pigs** - Slaughter approximately 21 million pigs per annum of which 85% is then exported. In addition 4.4 million pigs are exported live. There are roughly 7,800 pig producers. There are two processing companies run largely on co-operative principles. **Beef** – approximately 16,000 herds producing c.500,000 head of cattle p.a. of which over 97% are slaughtered in Denmark. **Poultry** – 260 broiler chicken stock, slaughtering approximately 100 - 110 million chickens p.a.

### **Day 1: Wednesday 4<sup>th</sup> July.**

DAF representatives held a meeting at 9am with the Danish Veterinary and Food Administration (DVFA) in Copenhagen. The DVFA was represented by Karin Breck, Head of Division, Karsten Hansen, Meat Controller, Carl-Aage Morgen, Veterinary Officer, Charlotte Vilstrup, Veterinary Officer and Inge-Lis Killesbæk Andersen, Veterinary Officer.

Tom Loftus introduced the Irish delegation and outlined that we were interested in examining the use of trained auxiliaries in the Danish meat inspection as we are presently conducting a review of the Irish Meat Inspection System. Karin Breck briefly outlined the Danish system and the functions of the DVFA, which were then further elaborated on by Karsten Hansen, the Meat Controller within DVFA. (The latter is a recently introduced post, with responsibilities including ongoing rationalisation measures and cost control).

The Danish Meat Inspection costs approximately 360 million DKK (c. €48 million)<sup>b</sup>, of which 350 million DKK is recovered in full from the Danish Meat Industry. The outstanding 10 million DKK is allocated for meat inspection in small plants where slaughtering may only take place a few days per month. There are no significant seasonal fluctuations in slaughtering throughput, unlike in Ireland. Slaughtering of poultry and pigs account for a large percentage of Denmark's total slaughtering per annum. The meat inspection fee charged to plants is the actual cost of inspection and is collected once per year following two six monthly meetings with the Food Business Operative (FBO). The typical cost of meat inspection for a pig is 10 – 15 DKK (~ €1.40 - €2), for a chicken its approximately 3 – 4 cent per bird, for a beef animal its approximately 40 – 60 DKK (~ €5.50 – €8). No cost was given for sheep due to their relative unimportance in terms of slaughtering in Denmark.

Approximately 800 personnel are employed in the Danish Meat Inspection System, 1/3 are Vets and 2/3 are trained auxiliaries and all are permanent employees of the Ministry. While the DVFA stressed that Temporary Veterinary Inspectors (TVIs) are

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<sup>b</sup> €1 = 7.3 DKK

principally used in larger slaughterhouses and only in exceptional circumstances for example holidays and sickness, their use in these situations is increasing due to a significant shortage of trained auxiliaries. In smaller slaughterhouses (< 1,000 units per annum) TVIs are routinely used in place of trained auxiliaries. The Official Veterinarian (OV) is not assisted in the lairage by technical staff.

An auxiliary costs approximately 350,000 DKK (€48,000) or 70% of a veterinary salary of approximately 500,000 DKK (€68,000). The training of an auxiliary (see annex) can take up to 9 months during which the Ministry pays their wages. Advertisements for auxiliaries occur on an ad-hoc basis and training is delivered by the private sector. Intending auxiliaries undergo a DVFA interview before commencing training to ensure their suitability.

Trained auxiliaries work 37 hours a week. The typical roster in pig/red-meat plants is 80 minutes **on the line** followed by 20 minutes **off the line**. It was stressed that this 20 minutes off the line is not “canteen time” and is used for reading up on notices issued by the chief veterinary officer in the plant along with further educating themselves. In poultry plants the typical roster for an auxiliary is 35 minutes **on the line** followed by 35 minutes **off the line**, again to be used for work purposes. After 70 minutes the FBO operations cease and both operatives and Competent Authority staff stop for between 8 and 15 minutes before the next 70 minutes slaughter segment. In terms of vested interests, the Meat Inspectors Union is strong and must be consulted prior to any changes. For instance if the line speed of the pig plant exceeds the agreed no. of units slaughtered per hour, the Meat Inspectors may cease to work on the line and operations must stop in the plant.

Interestingly DVFA is commencing a review of its own Meat Inspection System with a view to moving to a more risk based approach. They argue that the present system of post mortem which has been in operation for many years, contributes little in terms of food safety and public health and rather concentrates on quality, which should be the concern of the FBO. Within 10 years DVFA anticipate that the FBO will take primary responsibility for quality with the competent authority executing a more risk-based approach as allowed for under Regulation 882.

TSE sampling in Denmark is done by the FBO and audited by the OV. In Denmark the stamping of carcasses is done by the FBO except in very small plants where it is done by the OV. In pig plants it's done with a mechanical roller. While the group did not have an opportunity to visit a beef processing plant, it was outlined that typically a Danish beef plant kills 40 - 50 cattle per hour or 1,200 – 1,500 units per week. In Denmark the Meat Industry and farmers are a united voice due to the co-operative structure – a significant difference from Ireland.

#### **Site Visit at Danish Crown, Ringsted (pig slaughter house).**

This is the second largest pig slaughterhouse in Denmark, slaughtering approximately 2.5 million pigs per annum or approximately 12,000 pigs per day. Danish Crown slaughters approximately 95% of all Danish pigs and is a co-operative. In contrast Ireland's total pig slaughtering in 2006 amounted to approximately 2.6 million. As well as meeting EU standards, this plant is USDA-approved.

There are four lines slaughtering 350 pigs each per hour and slaughtering occurs from 06.30 to 15.00. The actual shift length is 8 hours and 41 minutes. There is an OV, a Deputy Veterinary Officer (DVO), 20 TVIs and 44 auxiliaries on site but it is worth

noting that this staff complement also carried out the necessary regulatory tasks in the other parts of the plant e.g. cutting halls, processing rooms. TVIs are only employed because there is a shortage of auxiliaries. The recruitment level for an OV in Denmark is at the level of working on ante-mortem and post mortem tasks, and verification duties to assess the work of auxiliaries. Then there may be promotion to a DVO and then CVO (which is akin to a Veterinary Inspector in charge in Ireland).

An auxiliary works 37 hours per week and there are 5 on each line at any one time (1 on the head, 2 on the carcass, 1 on the intestine and 1 on the offal). An additional OV or TVI staffs the rail for the reinspections of detained carcasses. If the line speed exceeds the 350 per hour, then another auxiliary is required (union agreement) to staff the post mortem line. A half an hour per day is spent by an OV checking auxiliaries' work. Due to the nos. of pigs being slaughtered the norm was that 3 OVs staffed the ante-mortem intake per 8-hour shift, as there are routinely 3 intake points.

Auxiliaries rotate between the 4 inspection points on the line throughout the day according to the roster sheet working for 80 minutes **on** and 20 minutes **off**. An increasing problem within the Ringsted plant is the number of carcasses being detained or derailed for further inspection – approximately 800 out of ever 1,400 per hour. Local veterinary management put this down to a 'culture' of being drawn into Quality Control as opposed to Food Safety checks. Detained carcasses must then be examined by the OV or DVO.

A further 14 auxiliaries are being trained and these will replace the TVIs who are employed for post-mortem work. The only reservation that OV's have about the use of auxiliaries is the time required to train them. TVIs are looked on, as been a very expensive means of conducting meat inspection, and generally it was considered that full time staff had the advantage of being more familiar with the systems and procedures that a Competent Authority must adopt. As the inspection fees are also levied based on actual costs incurred and TVIs are considerably more expensive than auxiliaries, the Danish FBO's have commented on their use.

The number of inspection points per pig slaughter line is based on agreed thresholds. These are as follows for electronic systems (figures for non-electronic systems in brackets). - 1 for up to 60 (55) pigs per hour; 2 for up to 130 (120); 3 up to 210 (195); 4 up to 280 (255); 5 up to 350 (325); 6 up to 400 (360); and 7 up to 460 (420).

## **Day 2: Thursday 5<sup>th</sup> July.**

### **Site Visit to Rose Poultry, Vinderup in Jutland.**

There are a total of 4 poultry slaughtering plants in Denmark, 3 of which are owned by Rose Poultry. It slaughters 112,000 chickens per day at Vinderup starting at 21.05 – 05.30 and from 05.30 – 14.00. Approximately 8 – 8,500 chickens are slaughtered per hour (~141 birds per minute). Overall Rose Poultry slaughters 300,000 chickens per day or over 75 million per annum. It employs a total of 1,200 staff with 450 of them in Vinderup. There is also a processing and packaging plant on the site at Vinderup, which the group visited. Due to the throughput at this Plant, the CA consider that the inspection line should be split allowing for increased time to carry out post-mortem inspection. However the plant and CA are negotiating this point.

A total of 30 slaughterhouse staff are required per shift. The Competent Authority staff needs are 1 OV and 2 trained auxiliaries per shift, as well as the CVO on site. The Danish OV advised that ideally there would be 9 Competent Authority staff consisting of 2 Vets and 7 auxiliaries if the plant were to be fully staffed. The OV outlined that TVIs are now being used due to a shortage of trained auxiliaries as training of further auxiliaries commenced two years too late. It is estimated that the Danish Meat Inspection Service is short approximately 70 – 80 auxiliaries at present. Shortages of TVIs are also being experienced. In Denmark there are 2 poultry post – mortem inspection positions while in Ireland there is only 1 post mortem inspection position as seen in Carton’s in Shercock. The Danish system splits the post mortem inspection into an external inspection of the carcass carried out by the FBO, while an auxiliary carries out the internal cavity inspection.

Slaughterhouse staff are used in post mortem inspection as allowed for under the Hygiene Package, however they must be trained by the Competent Authority (CA) before undertaking post mortem inspection. The training is carried out at the plant under the responsibility of the CVO, which is time-consuming. Practical training on line is 37 hours at this plant, and must be under the supervision of an auxiliary or OV. In some cases, training of an FBO may commence but the CA may be dissatisfied with the performance and progress of the student in which case the CA would advise the FBO that they are discontinuing the training. Another operative may be put forward instead for training. Product condemned by the FBO at post mortem is checked by the OV or auxiliary to assess work performance. Slaughterhouse staff receive a total of 2 weeks training while auxiliaries are trained for 9 months. By 2010 these slaughterhouse staff will have to be trained to the same standard as a trained auxiliary.

An OV checks the chickens in the lairage to fulfil the ante-mortem inspection requirement. In Denmark chickens are also ante-mortem inspected on the farm no earlier than 72 hours before slaughter. A trained auxiliary conducts five 35-minute inspections per day over 5 days, which equates to roughly 15 hours of inspections per week out of a total of 37 hours per week. In this poultry plant the OV was undertaking 35 minutes post mortem work at the start and end of the day, as the agreed auxiliary time allowances on the line did not allow it.

### **Conclusion.**

In terms of the VFM Review of the TVI Scheme, the visit was extremely useful and demonstrated that the use of trained auxiliaries is both feasible and practical. However the Danish authorities stressed the necessity to have sufficient numbers of auxiliaries trained in advance and available at all times so as to reduce the necessity to employ TVIs in times of holidays, sickness etc.

### **Annex to report: Breakdown of the costs of training auxiliaries in Denmark:**

- All auxiliaries are trained at The Danish Meat Trade College in Roskilde, where the formal training costs 50,600 DKK (€6,931).
- The DVFA pays for their transportation (by train to and from the college) during the training period along with their board and lodging. This amounts to a further 75,820 DKK (€10,386).
- The DVFA pays their wages while on the 36-week training programme (incl 3 weeks holidays), which amounts to 155,202 DKK (€21,261).

- Therefore total direct costs for the DVFA are approximately 282,000 DKK or €38,630 which is refunded by the industry.
- The costs for advertising, interviewing, administrative costs and practical training (with colleagues on site in the local meat inspection team) is estimated to add a further 25% on top of this resulting in a figure of 350,000 DKK (€47,945) per auxiliary.
- If salary costs were excluded (€1,261), the cost of training an auxiliary is approximately €26,684.
- The practical training element takes place over 16 weeks and is carried out during 3 periods in the 36 weeks total training period. It is carried out in pig, poultry and beef plants to ensure they see all species.
- Most auxiliaries are trained at the largest plants where the meat inspection teams have more colleagues to mentor and train them. During the training an auxiliary follows an experienced colleague, with the emphasis on on-site training on the inspection platform and in all the functions that the local meat inspection team carries out.
- The group were informed that the auxiliaries could be mentored and trained either by an experienced auxiliary or veterinarian and it does not normally require extra veterinary staff.

**Appendix 16: Breakdown between Multi and Single Species Plants in 2006**

	<b>Beef</b>	<b>Sheep</b>	<b>Pigs</b>	<b>Poultry</b>
<b>Multi Species Plants</b>	12	12	5	0
<b>Single Species Plants</b>	23	4	9	12

In 2006 there was a total of 66 meat slaughter plants.

Approximately 263,844 TVI hours were charged in 2006 to all plants, of which 200,928 were in factories where only one species was slaughtered.

**Appendix 17: Beef Plant Flow Chart from Lairage Intake to Final Carcase Inspection:**

