

DEPARTMENT OF  
AGRICULTURE, FOOD AND  
FORESTRY

Future Organisation of Cattle  
Breeding in Ireland

Report

October 1995

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## APPENDICES

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## Introduction

- 1.1 In June 1995, the Department of Agriculture, Food and Forestry commissioned Ernst & Young to carry out a feasibility study on the optimum organisational structure for the development of an industry-led cattle breed improvement programme in Ireland. The study was undertaken during July to September 1995 and this report sets out the results of that study and our recommendations in relation to the establishment of an Irish Cattle Breeding Authority (ICBA).

## Costs and Benefits

- 1.2 Many different activities contribute to the generation and delivery of benefits from genetically superior animals. Calculating an overall balance of costs and benefits simultaneously for all of these activities is extremely complex.
- 1.3 Approximate total cost of these services at present is of the order of £25m per annum (AI - £15m, milk recording - £5m, other activities - £5m). Our concern here is not to calculate costs and benefits for the whole complex of activities, but rather for the sub-set of central services which are encompassed within the remit of the ICBA. Leaving out the supply of tags, this group of activities has an annual cost of the order of £1m.
- 1.4 The total annual benefits deriving from use of carefully recorded and presented genetic information in the Irish cattle population is estimated as being in the region of £30m. The contribution of ICBA activities to this complex of benefits from genetic improvement is central.

## Objectives for ICBA

- 1.5 The fundamental objectives of a cattle breed improvement programme are to ensure the continued existence of a viable cattle breeding industry, to enhance the competitiveness of the milk and meat production and processing industries, and to achieve improved quality of output.
- 1.6 Specific improvement targets, designed to lead to the achievement of the overall objectives, have been established in the Measure for Improvement of Cattle Breeding Infrastructures for seven separate activity areas.

## EXECUTIVE SUMMARY *continued*

### Level of Authority of ICBA

- 1.7 It is recommended that the ICBA should be established as an organisation *approved* by the Minister for Agriculture, Food and Forestry, with the authority necessary to enable it to:
- achieve the mission and objectives envisaged for it;
  - progress, without delay, the integration of data necessary to establish the national data base;
  - undertake the developmental work which would be an important function of ICBA.
- 1.8 Eventual progression to the status of competent authority to approve other relevant organisations and activities could be considered in the future.

### Scope of ICBA's activities

- 1.9 The primary functions of ICBA would be:
- management of the Central Data Base, both development (possibly contracted out) and operation;
  - identification, implementation and supervision of quality standards for both data and operations;
  - the undertaking of a developmental role through publications, promotion and the provision of services.
- 1.10 Many of the activities which could form part of the remit of ICBA (see table below) are currently carried on by existing organisations.

### Current Activities

Activity	Carried on by
◆ Identification and Registration	> to be determined
◆ Milk recording	> MR Societies / IDRC
◆ Herdbooks	> Breed societies
◆ Type classification / linear assessment	> Breed societies / Department
◆ AI and progeny testing	> AI organisations
◆ On-farm beef recording	> Department
◆ Central performance testing	> Department
◆ Calculation / publication values	> Department

- 1.11 Section 6 of this report considers in detail the extent to which ICBA could, in the future, become involved in these activities.

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## EXECUTIVE SUMMARY *continued*

### Financial Projections

- 1.12 The financial impact of each activity is assessed in terms of the contribution each can make towards the costs of ICBA. Financial projections are best estimates based on a range of assumptions. They also reflect the level of activity necessary to meet the targets set out in the Operational Programme. They are prepared solely for the purpose of assessing the future viability of ICBA and they should not be used or relied upon for any other purpose.

### Resource Requirements

- 1.13 The projections for ICBA are based on anticipated capital costs of £2.08 million (see Appendix B2). This total includes a figure of £1.895 million for computer systems.
- 1.14 In addition to these once-off capital outlays, there will be ongoing operational costs in relation to staffing and other resource requirements. Details of these operating costs are set out in Appendix B3, but the most significant elements are those relating to:

- Staff, including:
  - Chief Executive
  - Information systems (5)
  - Genetics (2)
  - Standards and technical support (3)
- Costs associated directly with the information system, including maintenance of hardware and software, communications and depreciation. This group of costs is estimated to total approximately £738,000 per annum.
- Establishment costs based on the use of leased premises.
- Provision of ongoing funding of £100,000 per annum for the two key functions of promotion and research and development.

### 5-Year Development Plan

- 1.15 The potential activities and sources of service revenue and contribution are set out individually in Appendices B5.1 to B5.8, and are summarised in Appendix B4. The contribution from service operations to central operating costs is projected to increase from a negative level of £28,000 in Year 1 to a positive contribution of £1,044,000 in Year 5.

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## EXECUTIVE SUMMARY *continued*

1.16 Key elements in the projections are:

- the proposition that ICBA could, from 1998 onwards, compete successfully for a role in connection with the Identification and Registration scheme and that this would provide benefits in terms of better integration of breeding data and in sharing computing overhead costs;
- the assumption that IDRC would be integrated into ICBA at an early date;
- the recognition that on-farm beef recording is, at current levels, uneconomic and that steps would have to be taken to ensure viability of the service;
- the identification of central performance testing as a service that in its present form, even allowing for savings, would not be commercially viable;
- the assumption that ICBA will be in a position at an early stage to generate income from the publication of genetic values and reports.

1.17 Appendix B3, shows the central operating costs necessary to provide the range of services envisaged. These costs are projected at approximately £1.4 million per annum.

1.18 Appendix B3 also shows the year-by-year operating deficit, ie. total contribution from operations less central operating costs. This is projected to improve from a deficit of £1.45 million in Year 1 to a deficit of £0.1 million in Year 5.

1.19 Appendices B1(a) and B1(b) show the total year-by-year funding requirement for ICBA under base assumptions which include the provision of I&R services. This falls from a maximum of £3.5 million in Year 1, representing initial capital investment and start-up costs, to £407,000 in Year 5. These estimates are dependent upon:

- the timing and level of capital investment required;
- the achievement, or otherwise, of activity levels in key areas, such as I&R.

## EXECUTIVE SUMMARY *continued*

1.20 The total funding requirement for ICBA's first five years of operation, under base assumptions, are as follows:

	Total	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	2,080	2,080				
Cash (surplus)/deficit on operations	1,409	984	616	(33)	(65)	(93)
Development / re-investment	2,500	500	500	500	500	500
<b>TOTAL</b>	<b>5,989</b>	<b>3,564</b>	<b>1,116</b>	<b>467</b>	<b>435</b>	<b>407</b>

### Funding Options

1.21 The provision of this funding for initial investment and ongoing development is likely to have to come from a combination of sources, including:

- EU Structural Funds, through the Operational Programme for Agriculture, Rural Development and Forestry;
- the Irish Government, through the Department of Agriculture, Food & Forestry;
- the service users;
- the wider body of farmers;
- the organisations that will become the shareholders in the ICBA;
- the wider agricultural industry.

1.22 Appendices B1(a) to B1(d) show possible funding structures for ICBA. The key features are as follows:

#### *Option 1*

- This assumes that Year 1 capital costs will attract Structural Funds support at an average of 67% and that other development costs will obtain support at average levels of 50% and 25% in Years 1 and 2, respectively.
- This assumes that the Department withdraws fully from its direct involvement in cattle breeding schemes and programmes from Year 1.

## EXECUTIVE SUMMARY *continued*

- It proposes the introduction of a charge of 20 pence on each set of I&R tags as the basic, ongoing contribution from the wider body of farmers.
- It assumes that the balance of funding would be provided by organisations in the industry.

### *Option 2*

- It is estimated that the support of cattle breeding in Ireland currently costs the Government approximately £545,000 annually. This option assumes that the Department might be willing to continue to provide this level of support in Year 1, and a reducing level of support for the remaining four years of the planning period.
- Assuming the same levels of Structural Funds support and charges on tags, this would reduce the contribution required from the industry accordingly.

### *Option 3*

- This assumes that ICBA fails to win the business for supply of I&R services;

### *Option 4*

- As for Option 3, but without any charge being imposed on the I&R tags;

1.23 The impact of the various options on the funding of ICBA, in terms of the total funding derived from the different sources over a 5-year planning period, can be summarised as follows:

Source	Option 1		Option 2		Option 3		Option 4	
	£000	%	£000	%	£000	%	£000	%
Industry contribution	2,230	37	1,110	19	2,445	31	4,445	57
Charge on I&R Tags	2,000	33	2,000	33	2,000	25	0	0
Structural Funds	1,759	29	1,759	29	1,759	22	1,759	22
Contribution by Department	-	-	1,120	19	1,645	21	1,645	21
<b>Total</b>	<b>5,989</b>	<b>100</b>	<b>5,989</b>	<b>100</b>	<b>7,849</b>	<b>100</b>	<b>7,849</b>	<b>100</b>



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## EXECUTIVE SUMMARY *continued*

- 1.24 After year 5, the ICBA should, under base assumptions, be operationally self-sufficient, with the exception of the ongoing funding, based on a fixed charge on tags, which will be necessary to fund new developments and re-investment in technology and communications.
- 1.25 A significant factor in the future viability of ICBA is its ability, or otherwise, to generate a significant proportion of its funding from user fees. Analysis of Option number 2 for ICBA's funding shows gross income from user fees rising from 15% in Year 1 to 92% in Year 5. This compares with equivalent data from Denmark (54% in 1994) and the Netherlands (85% in 1993/94).
- 1.26 On the above basis, the targets set for ICBA in the 5-year Development Plan are considerable, and will require ICBA to build rapidly on the experience of other organisations to achieve a relative position on funding comparable to the Netherlands, which has had close to 30 years of development behind it. It also points to the need for ICBA to win the I&R business.
- 1.27 The user fees referred to at 1.25 above include the projected turnover from the operation of the I&R scheme. Failure to win that business on an open competitive basis, or failure to achieve the projected contributions towards overheads from that activity, would involve the industry in continuing funding in excess of £500,000 per annum.

### Ownership, Management and Control

- 1.28 It is intended that the ownership and control of ICBA should lie with the industry. We believe that it should represent, in a reasonable balance, the relative potential weight of involvement by each sector of the industry with ICBA in terms of:
- use of ICBA's services and the financial value of those services
  - technical/developmental contribution to ICBA and to Irish cattle breeding in general
  - direct financial contribution to ICBA.
  - contributions, directly or indirectly, by an organisation's members to ICBA.

The potential contributors to, and users of, ICBA services are considered in Section 9 of this report.

- 1.29 We recommend that ICBA be legally structured as a co-operative organisation. Ownership would be by the member organisations, with shares issued to nominees of those organisations. Shareholder organisations would elect the Board.
- 1.30 The relative shareholdings, and corresponding representation on the Board, would be subject to negotiation within the industry. We would envisage Board representation as mirroring the structure of industry relationships with ICBA.

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## EXECUTIVE SUMMARY *continued*

1.31 We would propose a Board of twelve members with a Chairperson appointed by the members of the Board.

1.32 An outline management structure is shown in Section 9 of this report.

### *Recommendations*

1.33 *Key recommendations may be summarised as follows:*

- *ICBA should be established to lead the development of cattle breeding in Ireland;*
- *it should have a specific objective of achieving the improvement targets set in the Operational Programme;*
- *ICBA should undertake the range of activities necessary to co-ordinate all activities and data related to cattle breeding in Ireland;*
- *ICBA should be provided with an information system capable of handling the complexity of data and communications necessary now and in the future;*
- *ICBA should also be provided with a small staff, led by an active Chief Executive, and focused on the prime functions of information systems, standards and development;*
- *funding should be based on:*
  - *the maximisation of Structural Funds;*
  - *the participation, and phased withdrawal of the Department of Agriculture, Food and Forestry;*
  - *the provision of base funding by a charge on I&R tags;*
  - *industry funding for initial development costs.*
- *ICBA should be established as an organisation approved by the Minister. Progression to competent authority might be considered.*
- *It should be legally structured as a co-operative, with shares held by participating organisations, a Board of 12 elected by the shareholders, and a Chairperson appointed by the Board members;*
- *establishment of ICBA should proceed quickly, following an implementation process such as that outlined in Section 12 of this report.*

- 2.1 The cattle industry, both milk and beef, is of major importance to the Irish economy. It is responsible for some 70% of agricultural output. It is a major contributor in terms of gross output (some £2.5bn in 1992), exports and employment.
- 2.2 Because of its high dependence on export markets (over 80% for beef, 70% for dairy), international competitiveness is critical for the long term future of the Irish cattle industry. Steady advances in quality of products and in efficiency of production, processing and marketing will be essential. Genetic improvement of both dairy and beef cattle, at rates at least comparable to those in other countries, is a key requirement.
- 2.3 Improved genetic quality of the national beef and dairy herds will contribute, in the years ahead, to:
- continued improvement in milk yields;
  - continued improvement in milk quality, particularly in relation to protein content and somatic cell count;
  - mitigation of the enormous impact of the high seasonality of our grass-based production systems for both dairy and beef;
  - improved growth rates and carcass quality in beef cattle;
  - bringing the finished milk and meat products increasingly in line with consumer tastes and enabling more rapid adjustment of supplies to changes in those tastes;
  - increased trade in pedigree stock and semen.
- 2.4 Traditionally, official breeding policy was determined by the Department of Agriculture and was aimed at achieving national objectives related to the general production and marketing environment obtaining at the time. Dairy and beef cattle breeding schemes and programmes were organised and closely regulated by the Department. These schemes and programmes were generally organised around local breed resources as access to genetic material from other countries was restricted on veterinary grounds. In the late 1980s the Department decided to phase out their direct involvement in these schemes and programmes and to encourage the industry to take up responsibility for cattle breed improvement generally.
- 2.5 There is now broad agreement on the need for the industry itself to become much more actively involved in the operation, funding and control of these national programmes.
- 2.6 Much work has been done over a number of years on how best to organise cattle breeding activities for the future. This has primarily been done through the ad-hoc Industry/Department Committee, chaired by Mr B Nagle.

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## BACKGROUND *continued*

- 2.7 A discussion document on the "Future Organisation of Cattle Breeding in Ireland" was broadly agreed by the Nagle Committee in January 1995. This document outlined proposed organisational arrangements, including the establishment of an Irish Cattle Breeding Authority (ICBA).
- 2.8 The concept of establishing the ICBA was embodied in the Measure for the Improvement of Cattle Breeding Infrastructures included in the Operational Programme for Agriculture, Rural Development and Forestry, 1994-1999. This Measure is aimed at putting in place infrastructures which will integrate and co-ordinate all the different cattle breeding activities and bring about a major expansion in the levels and quality of performance recording and testing for genetic improvement purposes. It is targeted at the establishment of an integrated national cattle breeding data base / network with the necessary computer hardware and systems to enable all cattle breeding activities to be efficiently carried out.
- 2.9 Against this background, the Department of Agriculture, Food and Forestry sought proposals for consultancy services to carry out a feasibility study on the optimum organisational structure for the development of an industry led cattle breed improvement programme in Ireland. Phase I of this study was to include:
- the preparation of a five year development/investment plan; and
  - the identification of sources of funding for the future organisational structure.

The primary objective of this plan was to be the achievement of the general objectives and specific targets specified in the Structural Measure.

- 2.10 Ernst & Young were appointed by the Department to undertake the Phase I study. This report represents the outcome of that study.

- 3.1 Many different activities contribute to the generation and delivery of benefits from genetically superior animals:
- identification of individuals and linking them to their relatives through accurate pedigree records;
  - measurement of performance, through both milk and beef recording systems;
  - effective selection of superior individuals through efficient use of information on farm, and through well-designed and executed programmes for AI.
- 3.2 No one of these activities delivers genetic benefits on its own. At the same time, all of these activities have other benefits in terms of efficient farm management and disease control.
- 3.3 Calculating an overall balance of costs and benefits simultaneously for all of these activities is, therefore, extremely complex. Approximate total cost of all services provided at present is of the order of £25m per annum (AI - £15m, milk recording - £5m, other activities - £5m). The sub-set of central services which are encompassed within the remit of the ICBA, leaving out the supply of tags, has an annual cost of the order of £1m.

### Direct User Benefits

- 3.4 The ultimate arbiter of costs and benefits is the end-user. Willingness to purchase services can be altered by reducing the cost of the service, improving its quality, or by changes in the circumstances of the purchaser. For example, the rapid growth in milk recording in recent years is driven by the fact that farmers have perceived the benefits to be greater than the costs involved. Most of these benefits are directly relevant only to that farm and come in the form of information which is useful for cow selection, quota management and adjustment of feeding patterns.
- 3.5 A similar balancing of costs and benefits in terms of immediate farm management efficiency applies to users of the AI service.
- 3.6 Registration of animals in a herdbook is also a service availed of by many farms because the services of cow valuation provided can help in on-farm management, and because the authentication of animal identities and performance data give the prospect of sale of breeding stock at prices above those of commercial cattle.

## COSTS AND BENEFITS *continued*

### General Benefits

- 3.7 In all of these cases, the costs and benefits can be assessed by the purchaser of the services. There is also a wider set of benefits which comes from the collective use of all these services, and which is not so easily assessed at the level of a single producer. The genetic quality of the calves born each year is a function of the amount and accuracy of information used in selecting the parents, and of the efficiency with which these parents have been selected and used. This applies particularly on the male side, since the whole calf crop is sired by a relatively small number of selected bulls. Within these selected bulls, those in AI have a double effect:
- they sire half of all calves born each year and most of the replacement females in the dairy herd; and
  - they sire a high proportion of the 10,000 or so natural service bulls which come into service each year.
- 3.8 The benefits deriving from the information provided through the interlocking services are, therefore, made available in varying degree on almost every cattle farm in the country.
- 3.9 Another factor which distinguishes collective from particular benefits is the timescale involved. A farmer investing in milk recording has immediate benefits in terms of information useful in managing his enterprise. Investment in genetic improvement, on the other hand, is long-term. The lag between initial investment and return in dairy bull progeny testing is at least six years. However, benefits of genetic improvement are permanent.
- 3.10 A number of studies in Ireland and abroad have attempted to quantify the benefits from such selection. In the case of dairy bulls, the principal Irish study has shown that the net benefits to farmers, after taking account of increased feed costs to support higher production levels, were approximately *twenty times greater than the costs* involved in providing such genetic improvement through a well constructed progeny testing programme. It was also pointed out that internationally competitive programmes generally operate on selection intensities well in excess of 10 to 1, and often closer to 15 to 1, and that programmes with less than 100 bulls on test each year were unlikely to survive international competition. Applying these results to a 100-bull programme in Ireland gives an estimated annual benefit of the order of £15m.
- 3.11 The benefits of extra information in terms of selection effect on incoming heifers depends on the number of cows in milk recording, but can be estimated at around £5m.
- 3.12 At present, it is estimated that over a quarter of a million units of Holstein semen are imported into this country each year, at a cost to end-users of at least £4m, while semen of competitive genetic quality could be provided from a domestic programme at a fraction of this cost. Recovery of this domestic market would, therefore, also be a highly cost beneficial result of an improved programme.

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## COSTS AND BENEFITS *continued*

- 3.13 On the beef side, the costs of providing steady genetic improvement are less than for dairy bulls, but benefits are also a large multiple of the costs. An annual improvement of the order of 1% for a balanced array of beef production traits is feasible, given a good data recovery and usage system. After allowing for additional feed costs to support higher production levels, this would add annual increments of over £5m in additional profitability to the annual kill, while enhancing the long-term market prospects for Irish beef abroad.
- 3.14 Despite the excellent health status of the country, and the wide range of breeds present, exports of breeding stock, semen and embryos from Ireland are negligible. This is largely because the international market requires detailed and reliable genetic evaluation and it has been difficult for Irish breeders to provide this. With an internationally competitive system in place, it should be possible to expand exports of breeding material, though it is not possible to quantify the full extent of this opportunity.
- 3.15 The total benefits deriving from use of carefully recorded and presented genetic information in the Irish cattle population can, therefore, be estimated as being in the order of £30m per year. The contribution of ICBA activities to this complex of benefits from genetic improvement is central. None of these activities can deliver its potential without independent, accurate integration and management of the data on which all genetic evaluations are made.

## OBJECTIVES FOR ICBA

### Underlying Purpose

4.1 Against this background of potential benefit, the underlying purpose in establishing ICBA is to provide the future infrastructure necessary to achieve the objectives of the Measure for Improvement of Cattle Breeding Infrastructures, included in the Operational Programme for Agriculture, Rural Development and Forestry, 1994 - 1999. These objectives are:

- to ensure the continued existence of a viable cattle breeding industry;
- to maintain and enhance the competitiveness of the dairying and beef production/processing industry; and
- to achieve improved quality output.

### Specific Targets

4.2 Specific targets, designed to lead to the achievement of the Measure's overall objectives, have been established in terms of projected levels of improvement in various areas. Developed together, these improvements in specific activities are designed to achieve the increased genetic value of the national herd and to realise the benefits outlined in Section 3. The achievement of each of these targets (see table below) is addressed in Section 6 of this Report.

	Increase	
	From	To
◆ Milk recording/testing (national dairy herd)	12%	30%
◆ Weight recording/assessment (national pedigree beef cattle)	10%	50%
◆ Utilise commercial beef carcass information	-	75%
◆ Genetic evaluations for milk recorded cows	40%	85%
◆ Genetic evaluation for pedigree beef cattle	-	50%
◆ Testing of AI dairy bulls	40	100
◆ Testing of AI beef bulls	12	35

### Approach

4.3 It is believed that the best approach to achieving these objectives is through the establishment of an Irish Cattle Breeding Authority (ICBA), owned and financed by the industry and having the capability of leading and supporting improvements in cattle breeding through the provision of integrated, high-quality genetic data.



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## OBJECTIVES FOR ICBA *continued*

### Role of ICBA

4.4 The role to be played by ICBA in achieving the above objectives and targets includes:

- Development of national cattle breeding objectives and strategy.
- Creation and maintenance of a national cattle breeding database.
- Promotion and development of wider industry participation in recording, testing and selection activities.
- Quality assurance of testing activities and data to ensure compliance by affiliated organisations with international (ICAR) standards and national / EU legislation.
- Integration and co-ordination of breeding activities.
- Provision of services to industry organisations and farmers.

5.1 A number of factors will affect the level of authority which may, or should, be devolved to the ICBA. These include:

- Existing legislation, particularly S.I 279 of 1994
- The position of existing organisations
- The expressed need for integrated data
- The scope of activities to be undertaken in the longer term
- The rate at which ICBA can develop the capability necessary to undertake the different activities.
- The benefits and costs of integration/centralisation

5.2 The possible range of options includes:

- Setting up ICBA as a voluntary, co-operative body to which individual organisations within the industry could subscribe as they wished
- Establishing ICBA as a body approved by the Minister for setting the rules for performance recording, assessing genetic values and publication
- Establish ICBA as the competent authority for specific activities.

5.3 Each of these options would have specific features affecting its appropriateness.

- **ICBA as a co-operative organisation:**

This option would have short-term advantage in that it would be the cheapest option and would leave each existing organisation free to decide upon its own future policies.

The major drawback is that it would be unlikely to be able to command the resources or to have the control necessary to provide the leadership and developmental role envisaged for ICBA or, indeed, to ensure the provision of the integrated data base, coupled with high quality standards, that is seen as an essential basis for the achievement of the long-term development objectives for the industry

- **ICBA as an approved organisation:**

As an approved organisation, ICBA would have the right to set the rules for the activities for which it becomes the approved body, even where those activities were to be carried on by other organisations. This would enable it to ensure the collection, and integration of data, and the application of the appropriate standards.

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## LEVEL OF AUTHORITY *continued*

- ICBA as the competent authority:

Ultimately, if the industry is to control and fund the development of cattle breeding in Ireland, it would be logical that the widest range of authority, compatible with the national interest and ultimate Ministerial control, should be devolved to the ICBA. In that context, the Minister could, in the future, consider the possibility of designating ICBA as the competent authority for certain activities. Designated by the Minister as a competent authority, ICBA would have powers to:

- approve breeders' organisations and associations;
- approve persons for carrying out testing, genetic evaluation and publication of evaluation results.

It is recognised, however, that the Minister is currently the competent authority and that any change in that status would require adequate safeguards and that structures for the independent supervision of ICBA would have to be in place.

5.4 Because of the above considerations, the fact that, currently, all of the necessary competencies, and resources, rest with other, existing organisations and the time span that will be required for ICBA to establish the necessary organisational and technical infrastructures, we recommend that ICBA should be established as an *approved* organisation, with the authority necessary to enable it to:

- achieve the mission and objectives set out in Section 4 of this report
- progress, without delay, the integration of data necessary to establish the national data base
- undertake the developmental work which would be an important function of ICBA.

5.5 Following a development period, of between three to five years, ICBA could, if it were shown to be necessary or desirable, progressively be appointed by the Minister as the *competent authority* for activities in which it has developed the necessary resources and competencies.

**Current Activities**

6.1 Many of the activities which could form part of the remit of ICBA (see table below) are currently carried on by existing organisations, principally:

- the Department of Agriculture, Food & Forestry
- the milk recording societies and IDRC
- the breed societies
- the AI organisations

**Current Activities**

Activity	Carried on by
◆ Identification and Registration	➤ to be determined
◆ Milk recording	➤ MR Societies / IDRC
◆ Herdbooks	➤ Breed societies
◆ Type classification / linear assessment	➤ Breed societies / Department
◆ AI and progeny testing	➤ AI organisations
◆ On-farm beef recording	➤ Department
◆ Central performance testing	➤ Department
◆ Calculation / publication values	➤ Department

6.2 The extent to which ICBA could, in the future, become involved in these activities and the role that these organisations could play in making ICBA a viable entity are addressed in the following sections.

6.3 In relation to each prospective activity, we consider:

- the potential scale of the activity, in the light of experience in Ireland to date and of experience of more developed systems in other countries
- the appropriate longer term position for ICBA in relation to the activity, given the specific targets referred to earlier in Section 4
- the commercial scope for ICBA's participation
- the phasing of development
- costs and potential income sources.

## SCOPE OF ICBA'S ACTIVITIES

*continued*

6.4 As a basis for documenting the commercial potential of each of these activities for ICBA, we have prepared a projected contribution summary for each activity (See Appendices B5.1 to B5.8) These contribution summaries have been prepared as 'best estimates', taking as a basis the existence of ICBA as a self-sufficient entity, having considerable information technology capability and other resources. They are based on information currently available and a range of assumptions as noted on the contribution summaries. They have been prepared for the purposes of this report only and should not be used or relied upon for any other purpose.

6.5 The estimates have been prepared on a contribution basis i.e. gross income less costs that would be directly incurred in providing a service. Overheads are included in the ICBA Operating Statement (see Appendix B3). The estimated revenue and costs may differ somewhat from those currently in existence. In general terms, however, changes in revenue structures would be matched by changes in costs and the effect on the overall quantum of resources, costs and funding requirements would not be significant.

### Identification and Registration

6.6 The identification and registration (I&R) scheme is being introduced into Ireland with a target date for implementation of 1 January 1996. Tenders for the provision of tags and the registration of births are currently being considered by the Department.

6.7 The potential scale of the tagging scheme is reasonably well identified, with a provision for two million calves per annum.

6.8 It is recognised that the I&R scheme has much wider objectives than those relating solely to cattle breeding. It is targeted to provide the essential infrastructure for both the Department's animal health and administrative programmes. In that context, control of the database must remain with the Department. It is believed by the industry, however, that a significant role, especially in relation to registration, should be played by ICBA in the operation of the scheme. This would:

- enable ICBA to undertake the primary role of validation of data entered at the birth of a calf. Since these data will be central to the development of integrated services for breeding purposes, it would place ICBA in a position to contribute strongly to this development;
- position ICBA clearly in the users' minds as an authoritative body, deriving that authority from the Department;

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## SCOPE OF ICBA'S ACTIVITIES

*continued*

- provide a means of optimising utilisation of the significant investment made by ICBA in information technology and thereby providing an important source of funding for ICBA's development activities, which might otherwise go to an outside, commercial organisation.

This approach is essentially the one adopted in similar, successful schemes operating in other European countries, notably Denmark and the Netherlands.

- 6.9 For these reasons, we would envisage the future role of ICBA in this area as one involving operation of the data collection and registration aspects of the I&R scheme. It is recognised, however, that the Department, as contractor, would have a responsibility to ensure that the scheme is run in the most effective and economic manner. In that context, ICBA should make every effort to win the contract for the operation of the scheme on a competitive basis.
- 6.10 Since there would necessarily be a period of time required for the establishment of ICBA and the development of its information technology and operational capability, it would be some time before ICBA would be in a position to undertake registration work on the I&R scheme. Assuming ICBA is established on 1 January 1996, we would envisage it being capable of undertaking operation of the scheme for 1997. However, if the current tender is awarded to a third party for an initial period of two years, the role of operating the scheme would not become available for competition by ICBA until 1998. We have used this latter assumption as a basis for estimating the potential operating contribution for ICBA from the scheme. (See Appendix B5.1).
- 6.11 The utilisation of ICBA's technology base to provide this service would increase the economic effectiveness of its operations. The contribution would help to meet central computing and other overhead costs, which will be incurred by whatever organisation provides this I&R service.

### **Milk Recording**

- 6.12 Milk recording in Ireland is currently carried on by 15 recording societies through seven data centres. The local milk recording societies operate under the aegis of the Irish Daily Records Co-Operative (IDRC), which is responsible for co-ordinating national milk recording and authenticating official milk records.

## SCOPE OF ICBA'S ACTIVITIES

*continued*

6.13 The key activities in milk recording are:

Activity	Carried on by:
◆ Field Recording	➤ 15 recording societies
◆ Laboratory Analysis	➤ 14 laboratories
◆ Data Processing	➤ 7 data centres
◆ Data Consolidation	➤ IDRC
◆ Quality Assurance	➤ IDRC / Department
◆ Technical Support	➤ IDRC/ Department

- 6.14 The target for milk recording is that 30% of the national dairy herd should be in milk recording by 1999. At current herd levels, that target represents a total of approximately 400,000 cows in milk recording. Current growth rates indicate that this target will be achieved.
- 6.15 Field recording, laboratory analysis and primary data processing are carried out at local level in a number of different centres. It is assumed that, for the duration of the current development plan, that position will not change substantially, although experience elsewhere indicates that there are gains in terms of cost and data quality from moving to fewer centres.
- 6.16 It is envisaged that the responsibilities currently undertaken by IDRC would be adopted by ICBA as soon as is feasible. In the ICBA draft development plan it is assumed that this will take place from 1996 onwards.
- 6.17 In addition to the provision of existing services, ICBA will, from its establishment, have an important role in promoting the expansion of milk recording.
- 6.18 A projected contribution schedule for milk recording and associated activities is shown in Appendix B5.2).
- 6.19 If ICBA is to be a commercial organisation, as far as possible, the costs of providing quality assurance and inspection will have to be borne by the users. At present, these services are provided by staff belonging to, and paid by, the Department.

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## SCOPE OF ICBA'S ACTIVITIES

*continued*

### **Herdbooks**

- 6.20 There are a total of 10 (mainly beef) breed societies or associations registered and operating in Ireland, covering a total of approximately 22,000 pedigree animals. In addition, approximately 100,000 dairy animals are covered by the Holstein Friesian Society of Great Britain and Ireland (HFS).
- 6.21 It is envisaged that the larger societies will continue to provide their own services, maintaining their own herdbooks and exchanging data with ICBA as necessary. In such cases, the primary relationship will be one of data sharing:
- The breed societies will, on a batch basis, provide data to ICBA in relation to animal ancestry and on the results of type classifications and linear assessments carried out by them.
  - ICBA will, as appropriate, provide milk recording and factory carcass data to the breed societies.
- 6.22 In the case of the smaller societies, it is envisaged that some may wish, in the future, to utilise the integrated ICBA database to administer their herdbooks and to issue certificates. In this context, ICBA would operate under contract to the breed society and registration to herdbook would be on the basis of rules established, and approved, by the breed societies.
- 6.23 Details of the herdbook services that might be provided by ICBA to breed societies are shown in Appendix B5.3). It is envisaged that such services would be provided by ICBA from 1997 onwards. Small volumes are anticipated and, consequently, the financial impact of the service would be marginal.

### **Type Classification and Linear Assessment**

- 6.24 Type classification is focused on assessing the functionality of the cow and concentrates on those physical characteristics that are of economic importance to the farmer, i.e. those:
- supporting the longevity of the cow; and
  - influencing the workability of the cow.
- 6.25 In Ireland, type classification and linear assessment are currently carried on by breed societies and the Department.
- The Irish Holstein Friesian Association (IHFA) provides these services to its members in relation to pedigree animals registered on its herdbook. Current activity levels are approximately 8,000 animals per annum.



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## SCOPE OF ICBA'S ACTIVITIES

*continued*

- The Limousin society provides, on a contract basis, a parallel service to its members.
- Linear assessment of daughters of young dairy test bulls and herd contemporaries, for conformation and management traits, is carried out by staff of the Department of Agriculture, Food and Forestry. Current levels are approximately 3,000 animals per annum.

- 6.26 It is envisaged that, where, as discussed in the preceding section, a breed society wishes ICBA to undertake the maintenance of its herdbook, ICBA could provide type classification and linear assessment services. The numbers of animals involved, and the financial impact on ICBA, would be small. It is possible that these services would be subcontracted to another organisation or organisations having resources committed to this task.
- 6.27 Type classification and linear assessment of dairy animals would largely relate to Holstein Friesians and services in respect of these animals would, most likely, continue to be provided by IHFA. ICBA would, however, be a commercial undertaking and would have the opportunity to provide such services in parallel with, or on behalf of, IHFA and other dairy breed societies if this service could be provided more economically by ICBA. The contribution summary for the activity provides for such development.
- 6.28 A significant level of activity would also arise for ICBA in assessment of the daughters of AI bulls. These services would be provided to, and paid for by, the relevant AI centres and are included under AI and Progeny Testing (Appendix B5.5)
- 6.29 Appendix B5.4 summarises the projected contribution from type classification and linear assessment activities. The overall targets in terms of percentages of animals are in line with experience elsewhere in Europe. The specific assumptions in relation to ICBA's levels of activity are necessarily speculative, but since it is provided that additional services income will be matched 84% by costs, the impact on ICBA's overall financial position would not be materially affected by deviations from planned activity levels.

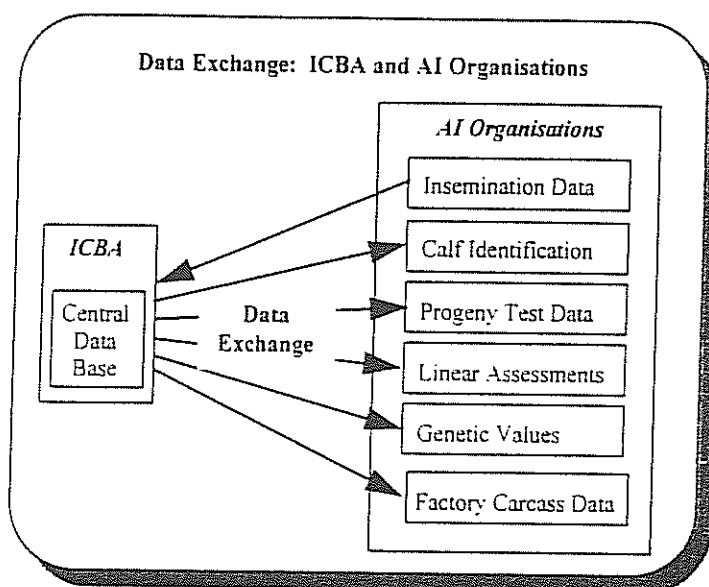
### Artificial Insemination

- 6.30 There are, at present, nine licensed AI organisations which, together, cover the whole country. They maintain some 500 bulls and, from these bulls and from imported material, they provide approximately one million first inseminations per annum.

## SCOPE OF ICBA'S ACTIVITIES

*continued*

- 6.31 The AI organisations are independent licensed entities. Because they are the main avenue for generating and delivering genetic improvement, it is envisaged that there would be a very close integration of activities between ICBA and the AI organisations. A prime role for ICBA would be that of supporting the AI organisations in meeting the conditions attaching to their licences in relation to recording, testing and genetic evaluation. This would involve exchange of data and services as illustrated below:



- 6.32 Insemination data would be required from AI organisations for confirmation of presumptive sire identity of calves born. The data provided to AI organisations would relate to calf identification, progeny test data from milk recording, linear assessments, factory carcass data and genetic values for AI bulls. Details of these services are shown in Appendix B5.5.
- 6.33 A competitive national AI service will need to continuously improve the quality of genetic evaluation on which its service is based. ICBA should have a central responsibility for such activities as:
- increasing the frequency of production of progeny test reports;
  - reviewing the Relative Breeding Index, (RBI) and conversion formulae;
  - including information from all relatives;
  - extending coverage to other traits of interest.
- 6.34 The co-ordination of AI breeding activities is an important objective for ICBA. There is, at present, some co-ordination of breeding programmes, particularly by those in the Munster Group. The development and implementation of a national breeding programme is, however, seen as an essential element in the improvement of cattle breeding in Ireland and ICBA should have a vital role to play in this area.

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## SCOPE OF ICBA'S ACTIVITIES

*continued*

6.35 The Measure for Improvement of Cattle Breeding Infrastructures included in the Operational Programme contains specific target increases in testing of AI bulls:

- dairy - from a 1993 baseline of 40 to 100 in 1999
- beef - from a 1993 baseline of 12 to 35 in 1999.

ICBA would necessarily have a role to play in achieving these targets.

6.36 In addition to those key development roles, ICBA will also provide services and support to AI organisations as required. Initially, it is envisaged that these will largely be in data processing and information management functions. It is anticipated that the level of those services will not be significant within the first five years and they have not been included in Appendix B5.5.

### **On-Farm Beef Recording**

6.37 The on-farm beef recording scheme is operated by the Department. It involves the measurement and recording of weights and heights of pedigree beef animals in herds participating in the scheme. Currently, some 1,500 animals are recorded annually. This represents a low level of involvement by breeders, considering that some 22,000 females are registered by the seven main beef breed societies.

6.38 The Operational Programme for Agriculture, Rural Development and Forestry includes the specific target of 50 percent of pedigree beef animals being weight recorded by 1999. Assuming approximately 20,000 calves being born annually in pedigree beef herds, achievement of this target would require that approximately 10,000 animals be weight recorded in 1999.

6.39 This service is currently provided by the Department at considerably less than actual cost. ICBA, as an organisation striving to operate on a commercial basis, would have to recover at least its direct costs. This would lead to a considerable increase in service costs to the breeder.

6.40 Substantial increases in service costs will likely act as a barrier to the achievement of the 1999 targets, unless specific actions are taken to mitigate the impact. Possibilities include:

- the provision of additional services which enhance the value of the programme to the breeder.
- the support of the programme from central funds
- a move towards a DIY system, thereby reducing the labour intensive and costly farm visits by (currently Department and in the future ICBA) personnel.

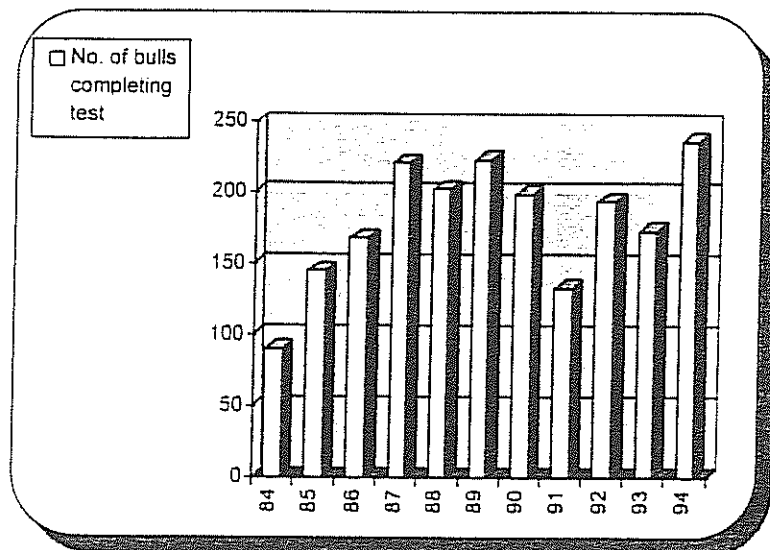
## SCOPE OF ICBA'S ACTIVITIES

*continued*

- 6.41 The contribution summary shown in Appendix B5.6 is based on the achievement of a break-even position, with provision for some cost savings on current levels.

### Central Performance Testing

- 6.42 Central performance testing is carried on by the Department at its centre at Tully. The centre has a capacity of some 250 bulls per annum. The number of bulls completing test at Tully has varied from year to year, as shown in the following graph:



- 6.43 Central performance testing at Tully is currently provided by the Department at a significant net loss. Even providing for reductions in both variable and staff costs, by levels that could be expected in commercial operations, and increasing the fees to the breeders from the current level of approximately £345 to £500 per animal, it will be difficult for the operation to break even. The contribution summary for this activity, drawn up using the above assumptions, shows an ongoing shortfall of revenue as against direct costs exceeding £100,000 per year. (see Appendix B5.7).
- 6.44 The short-term benefits, which accrue to a minority of breeders from the increased value of their bulls for AI and natural breeding purposes, are insufficient to carry the full cost of the programme. The argument for carrying the shortfall centrally is that the benefits of the central performance testing cannot, to a great extent, be identified with individual users. The benefits are derived over time from the steady improvement in the genetic value of beef cattle nationally and through improved quality of inputs to meat processing.

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## SCOPE OF ICBA'S ACTIVITIES

*continued*

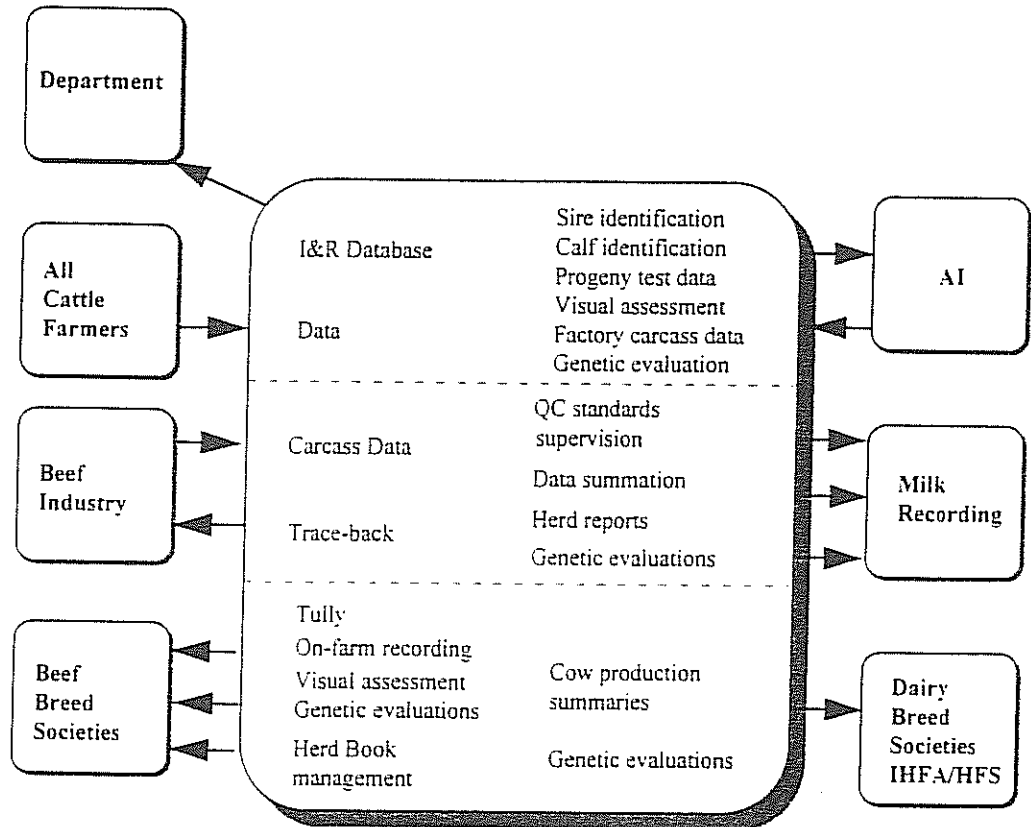
### Calculation and Publication of Genetic Values

- 6.45 The targets set for this area in the Measure for Improvement of Cattle Breeding Infrastructures are that:
- the percentage of milk recorded cows for which genetic evaluations can be provided be increased from the baseline 40% to 85%; and
  - that genetic evaluation can be provided for up to 50% of pedigree beef cattle.
- 6.46 Services in this area are currently provided by the Department which publishes annual reports on the:
- National Breeding Programme for Dairy Cattle; and
  - National Beef Cattle Improvement Programme.
- 6.47 This activity would form a core part of the activities of ICBA in the future.
- 6.48 The potential contribution to ICBA from this activity is summarised in Appendix B5.8. This envisages the provision of a block service to the AI organisations on a contract basis, and the provision, on a unit cost basis, of cow indices to individual herd owners, from 1997 onwards. The net contribution from this activity would largely be derived from this sale of services.

# SCOPE OF ICBA'S ACTIVITIES

*continued*

6.49 The relationship of ICBA to the different partner organisations is summarised below:



- 7.1 The resource requirements of ICBA will be determined primarily by the range and level of activities undertaken. For that reason, required resources and their associated costs have, wherever possible, been associated directly with those services and activities which give rise to them. The contribution summaries discussed in Section 6 have been prepared on that basis.
- 7.2 There will, in addition, be central management, administration and information management functions. The provision of the central functions will involve:
- the capital costs of set up and development;
  - ongoing operational costs.
- 7.3 The projections for ICBA are based on anticipated capital costs of £2.08 million (see Appendix B.2). This total includes a figure of £1.895 million for computer systems. This represents the mean between the anticipated minimum and maximum figures of £1.343 and £2.446 million respectively (see Appendix C). The actual cost will be dependent upon the outcome of the more detailed computer strategy and systems selection process scheduled as Phase II of the project.
- 7.4 The projections assume that all of the capital costs will be incurred in Year 1. This will be dependent upon the timing of the establishment of ICBA and the rate of development. However, it is anticipated that capital expenditure will attract Structural Funds support of up to 75% of cost.
- 7.5 In addition to these once-off capital outlays, there will be ongoing operational costs in relation to staffing and other resource requirements. Details of these operating costs are set out in Appendix B.3, but the most significant elements are those relating to:
- Staff, including:
    - Chief Executive,
    - Information systems (5)
    - Genetics (2)
    - Standard and technical support (3)
  - Costs associated directly with the information system, including maintenance of hardware and software, communications and depreciation. This group of costs is estimated at approximately £738,000 per annum.
  - Establishment costs based on the use of leased premises.
  - Provision of ongoing funding of £100,000 per annum for the two key functions of promotion and research and development.

- 8.1 The potential activities and sources of service revenue and contribution are set out individually in Appendices B5.1 to B5.8, and are summarised in Appendix B.4. The contribution from service operations is projected to increase from a negative level of -£28,000 in Year 1 to a positive contribution of £1,044,000 in Year 5. A central assumption is that ICBA wins the contract for the provision of I&R services in Year 3.
- 8.2 Appendix B.3, shows the central operating costs necessary to provide the range of services envisaged. These costs are projected as being stable at approximately £1.4 million per annum, though falling in Year 5 due to the elimination of the depreciation charge on computer hardware (this having been fully depreciated over the first four years).
- 8.3 This Appendix also shows the year-by-year operating deficit, ie. total contribution from operations less central operating costs. This is projected to improve from a deficit of £1.45 million in Year 1 to a deficit of £0.1 million in Year 5.
- 8.4 Appendices B1(a) and B1(b) show the total year-by-year funding requirement for ICBA, assuming the achievement of the operating targets set out in Appendices B5.1 to B5.8. These combine:
- the year-by-year operating deficit, adjusted for the non-cash depreciation charge;
  - the capital costs of investment;
  - a necessary provision for the development of technical expertise and for replacement and upgrading of computer systems and communications.
- The total funding requirement falls from a maximum of £3.5 million in Year 1 to £407,000 in Year 5.
- 8.5 Appendices B1(c) and B1(d) show the year-by-year funding requirements if ICBA failed to win the contract for the provision of I&R services. The total funding requirement in Year 1 is £3.5m, falling to £1.0m in Year 5.



**Introduction**

9.1 There are three potential sources of funding for services to the Cattle Breeding sector:

- Government;
- general charges payable by all producers;
- fees for service, paid only by users of particular services.

*Government*

9.2 In the early stages of development of many of these services (AI, herd recording, herdbook registration) it was not uncommon in Ireland and other countries for the services to be operated by State agencies. Today, this is unusual. In the transition period, varying levels of State support have persisted in the form of subsidies or in the assumption by Government of the overhead costs. This pattern can still be strongly seen in Italy, Germany and France. In Ireland, State involvement is now limited to station and on-farm testing in beef breeds, provision of supervisory services in milk recording, visual evaluations, a small amount of herdbook management and genetic evaluation.

*General financial support*

9.3 General financial support from all producers is a feature in most countries. It is justified on several grounds. All cattle farmers benefit from the general genetic improvement of the cattle population, whether they participate in the activities and services which lead to that genetic improvement or not. For the 50% of the Irish cattle population which is bred by AI, these benefits are immediate. For the remaining 50%, much of the genetic improvement comes ultimately from the same source, because many natural service bulls are sired by AI sires. Improved quality of beef cattle benefits not just the producer, but the competitive position of the industry, while similar considerations apply on the dairy side. All of these benefits are difficult to quantify for an individual farmer, and, therefore, extremely difficult to charge for on an equitable basis.

9.4 A further consideration is that certain essential but central services, such as the establishment and monitoring of standards, quality assurance of testing and measurement procedures, evaluation and authentication of data input, generation and certification of genetic data and the development and management of the necessary computer systems, are a necessary overhead in a modern competitive system, but also, are difficult to partition out to individual users.

9.5 The way in which general funds for these purposes are raised from all producers varies from one country to another. In some cases, (Netherlands, Denmark) there is a generally agreed system of land and product-based taxation within the agricultural sector, which is managed by farmers. Elsewhere (UK) this funding is provided by levy charges on products.

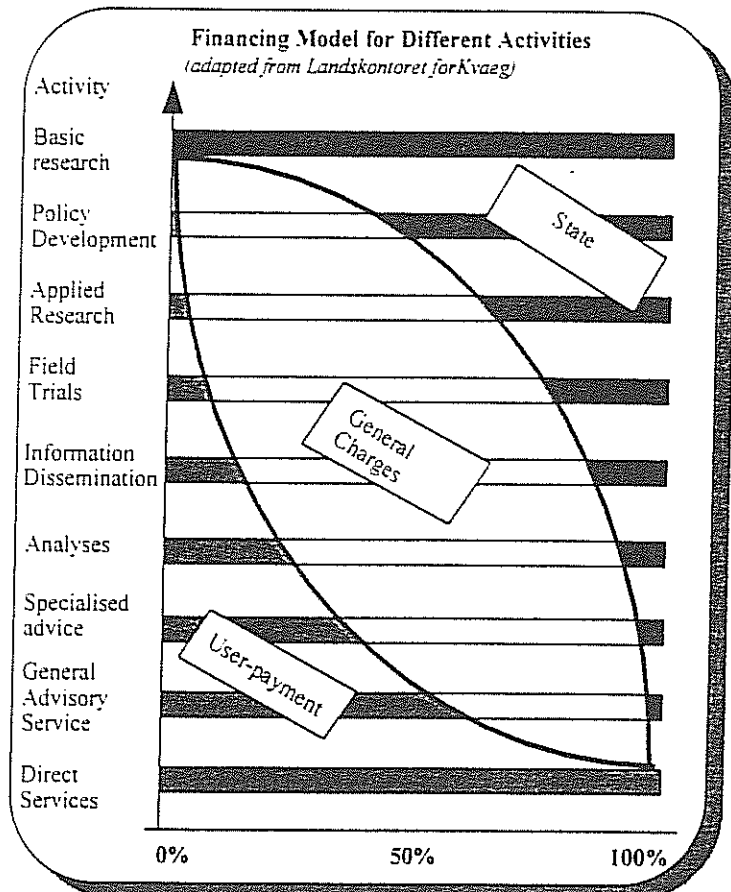
## FUNDING OPTIONS *continued*

### *User Fees*

9.6 The third type of funding is a direct fee for service paid by the user of the services. The general pattern is that these service charges are set at a rate which covers all of the costs of delivering the service at local level with varying levels of contribution to central overheads. Long term trends aimed at reducing end-user costs for these services include:

- reducing overhead proportions by expanding scale through amalgamations and growth in use of the service;
- a move to DIY services in AI and milk recording;
- a move to the employment of part-time contract staff.

9.7 The proportion of total costs of various services which is covered from end-user fees has tended to increase, while the Government contribution is decreasing everywhere. The balance between the three sources of funding differs from one country to another, and within country differs from one service to another. However, a general pattern is discernible, with the proportions of the fee sources shifting as the nature of the activity changes (see schematic below).



## FUNDING OPTIONS *continued*

9.8 The total funding requirement for ICBA's first five years of operation, under base assumptions which include I&R services, are as follows:

	Total	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	2,080	2,080				
Cash (surplus)/deficit on operations	1,409	984	616	(33)	(65)	(93)
Development / re-investment	2,500	500	500	500	500	500
<b>TOTAL</b>	<b>5,989</b>	<b>3,564</b>	<b>1,116</b>	<b>467</b>	<b>435</b>	<b>407</b>

9.9 The significantly larger requirements in Years 1 and 2 are due to:

- the initial capital investment;
- the operating losses incurred in these two years, where the cost structures exist but ICBA has not yet reached its potential in the sale of services. (The projections assume full cost in Year 1, but these may, in fact, be phased in over a period).

9.10 In Year 3 and thereafter, the funding requirement stabilises at approximately £400,000 per annum. This is largely represented by the requirements for ongoing development and re-investment, reduced by a cash surplus on operations.

9.11 The provision of this funding for initial investment and ongoing development is likely to have to come from a combination of sources, including:

- EU Structural Funds, through the Operational Programme for Agriculture, Rural Development and Forestry;
- the Irish Government, through the Department of Agriculture, Food & Forestry;
- the service users;
- the wider body of farmers;
- the organisations that will become the shareholders in the ICBA;
- the wider agricultural industry.

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## FUNDING OPTIONS *continued*

- 9.12 Appendices B1(a) to B1(e) show some possible funding structures for ICBA. In options B1(a) to B1(c) the year-to-year funding requirements remain the same; the variables are the sources of funding. The key features are as follows:

### *Option 1*

- This assumes that Year 1 capital costs will attract Structural Funds support at an average of 67% and that other development costs will obtain support at average levels of 50% and 25% in Years 1 and 2 respectively.
- This assumes that the Department withdraws fully from its direct involvement in cattle breeding schemes and programmes from Year 1.
- It proposes the introduction of a charge of 20 pence on each set of I&R tags as the basic, ongoing contribution from the wider body of farmers.
- The balance of funding would have to be provided by organisations in the industry, including the potential shareholders and the wider industry.

### *Option 2*

- It is estimated that the support of cattle breeding in Ireland currently costs the Government approximately £545,000 annually. This relates to the net costs of Tully and the On-farm Recording Programme, the costs of providing the ten inspectors for milk recording and the net cost of providing the genetic valuations data from the National Programmes for dairy and beef. This option assumes that the Department might be willing to continue to provide this level of support in Year 1, and a reducing level of support for the remaining four years of the planning period.
- Assuming the same levels of Structural Funds support and charges on tags, this would reduce the contribution required from the industry accordingly.

- 9.13 Appendices B1(c) and B1(d) show possible funding structures for ICBA assuming:

### *Option 3*

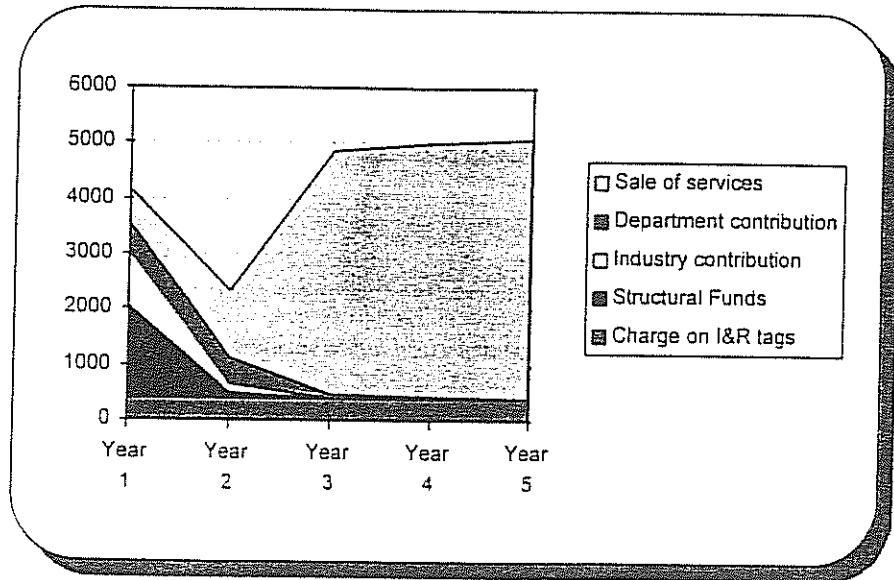
- ICBA fails to win the business for supply of I&R services;

### *Option 4*

- As for Option 3, but without any charge being imposed on the I&R tags;

## FUNDING OPTIONS *continued*

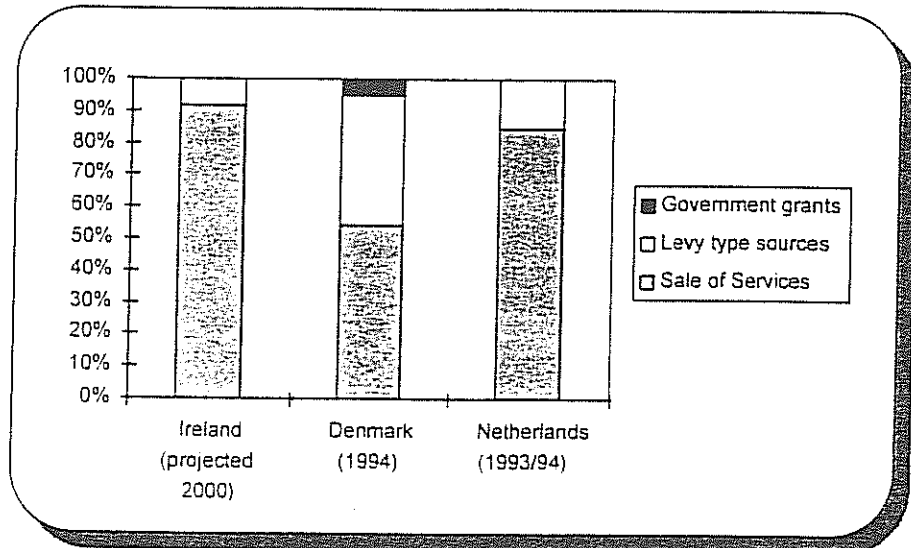
9.14 Taking option 2 above in more detail we can examine the changing funding profile over the five year planning period, based on the gross income derived from all sources (see figure below).



## FUNDING OPTIONS *continued*

### Appropriate Funding

- 9.15 The projected funding pattern for ICBA, based on the assumptions in Option 2, in 2000 is shown below, with, for comparison purposes, the 1994 patterns for Denmark and the Netherlands also shown.



- 9.16 Two categories of funding can be clearly defined. Fees for services, projected at 92% of the total funding in ICBA is higher than the proportion recovered as fees in Netherlands. In Denmark, in contrast, the charges for services account for only 65% of total operating costs. The other category is direct Government funding, which contributes 5% of operating costs in Denmark, and zero in the other two cases.
- 9.17 The remaining funding, in each case, consists of levy type sources. International comparisons show that, even on reasonably fully developed models, there is still some considerable dependence upon some base funding by the industry and/or farmers. In the Netherlands, this is partly from farmer-administered general levies on land and products. In Denmark, similar sources provide a much higher proportion (37%) of total operating costs. In the case of ICBA, the most equitable source of such background funding is seen as a flat charge on all calves registered. This, however, would not be sufficient to provide for the initial costs of establishing ICBA in its first two years. Additional funding will be required, for which the most reasonable and feasible source appears to be the dairy co-operatives and meat processing organisations.
- 9.18 On the basis of the above, the commercial targets set for ICBA in the 5-year Development Plan are considerable, and will require ICBA to build rapidly on the experience of other organisations to achieve a relative position on funding comparable to the Netherlands, which has had close to 30 years of development behind it. It also points to the need for ICBA to win the I&R business.

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## FUNDING OPTIONS *continued*

- 9.19 The user fees referred to at 9.16 above include the projected turnover from the operation of the I&R scheme. Failure to win that business on an open competitive basis, or failure to achieve the projected contribution towards overheads from that activity, would involve the industry in continuing funding in excess of £500,000 per annum.

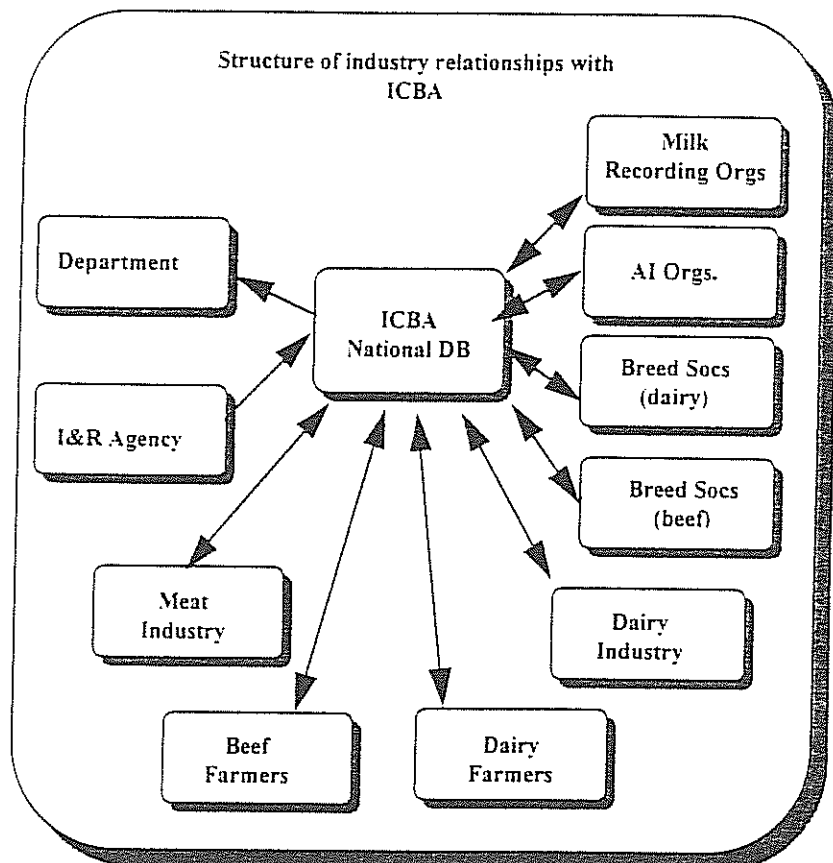
# OWNERSHIP, MANAGEMENT AND CONTROL

## Ownership and Control

10.1 It is intended that the ownership and control of ICBA should lie with the industry. How that ownership and control is to be represented is the key question. We believe that it must represent, in a reasonable balance, the relative potential weight of involvement by each sector of the industry with ICBA in terms of:

- use of ICBA's services and the financial value of those services
- technical/developmental contribution to ICBA and to Irish cattle breeding in general
- direct financial contribution to ICBA.
- contributions, directly or indirectly, by an organisation's members to ICBA.

10.2 The potential contributors to, and users of, ICBA services are represented in the chart below.



10.3 We recommend that ICBA be legally structured as a co-operative organisation. Ownership would be by the member organisations, with shares issued to nominees of those organisations.



## OWNERSHIP, MANAGEMENT AND CONTROL *continued*

- 10.4 The relative shareholdings, and corresponding representation on the board, would be subject to negotiation within the industry. We would envisage Board representation as mirroring the structure of industry relationships with ICBA.
- 10.5 We would propose a Board of twelve members elected by the shareholders. The Chairperson would be appointed by the Board members. Sectoral representation on the Board might be as follows:

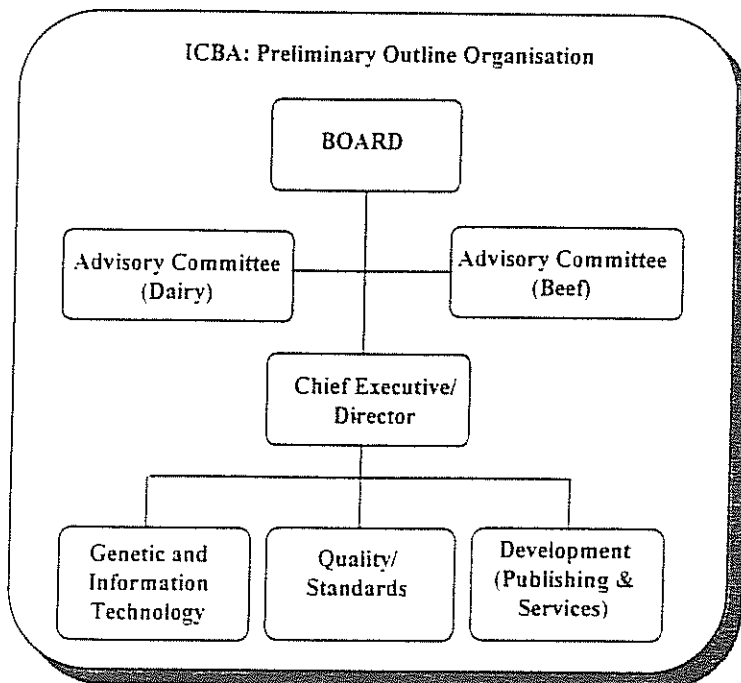
Sector	Representation
◆ Milk recording	2 ✓
◆ AI organisations	2 ✓
◆ Department	2 ✓
◆ IHFA/Dairy Breed Societies	1 2
◆ Beef Breed Societies	1
◆ IFA	1
◆ ICMSA	1
◆ Meat industry	1
◆ Dairy industry	1

- 10.6 The participation of the Department in the Board should depend on Government financial input and on the extent to which the Department contracts with ICBA for provision of I&R services. The milk recording and AI organisations represent, in many cases, the same large constituencies of active users of services. IFA and ICMSA represent the fullest spectrum of all farmer beneficiaries, and therefore represent the financial support for ICBA through the proposed universal charge on tags. The breed societies represent a smaller, but highly committed, group of interested organisations. The dairy industry is the owner, in many cases, of the AI and milk recording organisations. It, and the meat industry, are expected to contribute to the initial capital requirements.

## OWNERSHIP, MANAGEMENT AND CONTROL *continued*

### Management

10.7 An outline management structure is shown below:



10.8 ICBA would be controlled by its Board. The Board would decide upon ICBA policy and would direct strategy.

10.9 The Operations of ICBA would be the responsibility of a Chief Executive appointed by and responsible to the Board. There would be a small staff, with many of the day-to-day activities being contracted out to other organisations.

10.10 The primary functions of ICBA would be:

- management of the Central Data Base, both development (possibly contracted out) and operation;
- identification, implementation and supervision of quality standards for both data and operations;
- genetic evaluations;
- the undertaking of a developmental role through publication, promotion and the provision of services.

10.11 These primary functions would be supported by necessary finance and administrative services.

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## CONCLUSIONS AND RECOMMENDATIONS

- 11.1 The main focus of this study has been on:
- evaluating the potential benefits of the proposed ICBA to the cattle industry;
  - assessing the feasibility of the organisation;
  - considering in detail the potential scope of its activities;
  - identifying appropriate structures for the organisation.
- 11.2 Having considered each of these aspects, we believe that the ICBA can be established as an organisation that can yield substantial benefits to the industry and could, with capable direction and management, achieve a position, over a 5-year development period, similar to that achieved by successful bodies elsewhere.
- 11.3 Much, however, will depend upon two critical factors. The willingness of the industry as a whole, and the stronger organisations in the industry in particular, to actively support ICBA will be most important. Allied to this, and if ICBA is to fulfil its leadership and development roles, it will be very important that both the Chairperson and Chief Executive of ICBA be active and committed leaders and managers, respected in the industry.
- 11.4 The potential benefits are substantial. Against an annual cost of the order of £1m, the total annual benefits deriving from use of carefully recorded and presented genetic information in the Irish cattle population is estimated as being in the region of £30m.

### Recommendations

- 11.5 Based on our assessments of the wide range of factors considered throughout this report, and on the conclusions outlined above, we recommend that:
- the ICBA should be established to undertake the role of leading and supporting the development of cattle breeding in Ireland. It should have the specific objective of achieving the improvement targets established in the Operational Programme Measure for Improvement of Cattle Breeding Infrastructures;
  - ICBA should also have the explicit role of integrating the many different activities undertaken by organisations in the industry, of integrating all of the available information and of identifying and promoting opportunities for new developments;

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## CONCLUSIONS AND RECOMMENDATIONS *continued*

### *Activities*

- ICBA should undertake all activities appropriate to its role, subject to the need for the organisation to achieve the highest level of commerciality possible. The activities identified at this stage include the following:
  - central services in relation to milk recording, including establishment of standards, supervision of measurement and recording activities, data integration and publication and the provision of reports to farmers;
  - provision of services, on request, to breed societies, in the areas of herdbook maintenance and linear assessment;
  - exchange of information with, and provision of services to, AI organisations and co-operating with those organisations in the development of a national breeding programme;
  - provision of on-farm beef recording and central performance testing on a basis that will address the different requirements of achieving the Operational Programme targets and of optimising the commerciality of ICBA. (the basis on which this might be done will be a decision of the Board of ICBA);
  - the core service of calculation and publication of genetic values;

### *Resources*

- to undertake this extensive role, ICBA should be provided with an information system capable of handling the complexity of data and communications necessary, both now and in the future. (The scope and cost of such a system is referred to in Section 7 of this report);
- ICBA should also be provided with a small staff, led by an active and committed Chief Executive, and focused on the three prime functions of information systems, standards and development.

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## CONCLUSIONS AND RECOMMENDATIONS *continued*

### *Funding*

- Funding should be based on the following principles:
  - every effort should be made to ensure that the greatest proportion possible of the development costs of ICBA, particularly those relating to the information system, be covered by Structural Fund monies;
  - the Department should participate in funding the establishment and early development phase of ICBA. It should then phase out its involvement, both financially and in terms of control, over a number of years, within the overall 5-year preliminary period.
  - on-going base funding will be necessary for ICBA. This funding should be related to the long-term and widespread benefits to be derived by all farmers involved in cattle breeding. A charge on the I&R tags appears to be the most equitable way of applying that principle;
  - the industry should agree a basis of funding the balance of development costs, particularly in Years 1 and 2, and the ongoing need for some industry support beyond the 5-year planning period.

What constitutes "the industry" in this context is a key question. The main sectors concerned with cattle breeding activities are AI, milk recording and breed societies. These will all be involved directly and will contribute in proportion to the services they use. The wider body of farmers, as represented by the farm organisations, are expected to contribute through a charge on tags.

The other institutional beneficiaries are the meat and dairy processing industries. More efficiently produced, and higher quality, inputs will undoubtedly enhance their competitive position. It is, therefore, equitable that these sectors should participate in funding the development costs of ICBA. The funding required from this service will be concentrated in the start-up period.

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## CONCLUSIONS AND RECOMMENDATIONS *continued*

### *Structure and Organisation*

- ICBA should be established as an organisation approved by the Minister, responsible for setting and implementing standards for testing, measurement and recording activities related to cattle breeding and the calculation/publication of genetic values;
- ICBA should be legally structured as a co-operative society, with shares held by participating organisations from the industry, a Board of 12 elected by the shareholders and a Chairperson appointed by the Board members.

- 12.1 There is general agreement that there is a need for the cattle breeding industry to take control of its own future development and ICBA is the proposed vehicle for that development. This will involve the transfer of functions from the Department of Agriculture, Food and Forestry to ICBA, the co-ordination of activities currently carried on by a variety of independent organisations, and the financial commitment of the industry to ICBA. The process of establishing ICBA will, therefore, involve complex agreements.
- 12.2 At the same time, experience elsewhere, particularly in the United Kingdom, has shown that, if the initiative is to succeed, it will be necessary that the process of establishing ICBA proceed quickly, and with commitment to a relatively short time-scale for implementation.
- 12.3 We envisage that, following submission of this report to the Department of Agriculture, Food & Forestry, the key stages in the implementation will be as follows:

Week commencing 23 October 1995:	<ul style="list-style-type: none"> <li>Report to be provided to members of the industry liaison committees for consideration.</li> </ul>
Week commencing 30 October 1995	<ul style="list-style-type: none"> <li>Meeting of the industry liaison committees to consider their positions on the report proposals, and to agree next steps.</li> </ul> <p><i>The outcome from this stage should be an agreement that, within the Report proposals, there is a basis for discussion on the establishment of ICBA.</i></p>

Thereafter, assuming agreement to proceed:

November/December 1995	<ul style="list-style-type: none"> <li>Industry liaison committees consider and decide on structure for future discussion/negotiation.</li> </ul>
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IMPLEMENTATION *continued*

	<p>This will involve two key considerations:</p> <p>(a) the intra-industry arrangements for funding, ownership and control.</p> <p>(b) establishing the position of the industry in relation to the overall funding of ICBA and its relationship with the Department.</p> <p><i>The outcome from this phase should be a commitment from the industry to the establishment of ICBA and a decision to enter into further discussion with the Department.</i></p>
	<ul style="list-style-type: none"> <li>• Department team for discussion / negotiation established.</li> </ul>
December 1995	<ul style="list-style-type: none"> <li>• Discussion / negotiation teams meet to set out the basis for proceeding.</li> </ul> <p><i>The outcome from this stage should be agreed terms of reference and procedures and an agreed timetable.</i></p>



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## APPENDICES

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### APPENDIX A

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#### OVERSEAS MODELS

- Denmark
- France
- Germany
- Netherlands
- New Zealand
- Norway
- Sweden
- United Kingdom

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## OVERSEAS MODELS *continued*

### **DENMARK - structure of cattle breeding services**

Denmark has almost 720,000 dairy cows, and 110,000 suckler cows. There were 830,000 first AI last year. Holsteins now account for 66% of dairy cows, with Jersey and Red Dane (largely Brown Swiss) now at about 13% each. 84% of dairy cows and 30% of beef cows are in recorded herds. Close to 95% of all cows are bred by AI.

The organisational structure through which the complete range of services to the Danish cattle breeding sector is provided dates from 1972. The central unit is the Cattle Husbandry Department of the Danish National Agricultural Advisory Centre in Aarhus. This in turn is controlled by the National Committee on Danish Cattle Husbandry, which represents the users of the various services.

The Committee has an interesting structure. It aims to represent the institutional interests, and also to give direct representation to the farmer users. It has two representatives each from the AI, meat and dairy sectors, and five from the two farmers unions. It also has 10 regional representatives, who are chairmen of regional boards. Its budget last year was DKR 65 million (£7.2m). Of that, DKR 5 million was paid by Government for special projects. Of the remainder, 54% was paid by user fees and 28% by levies on land, milk and meat.

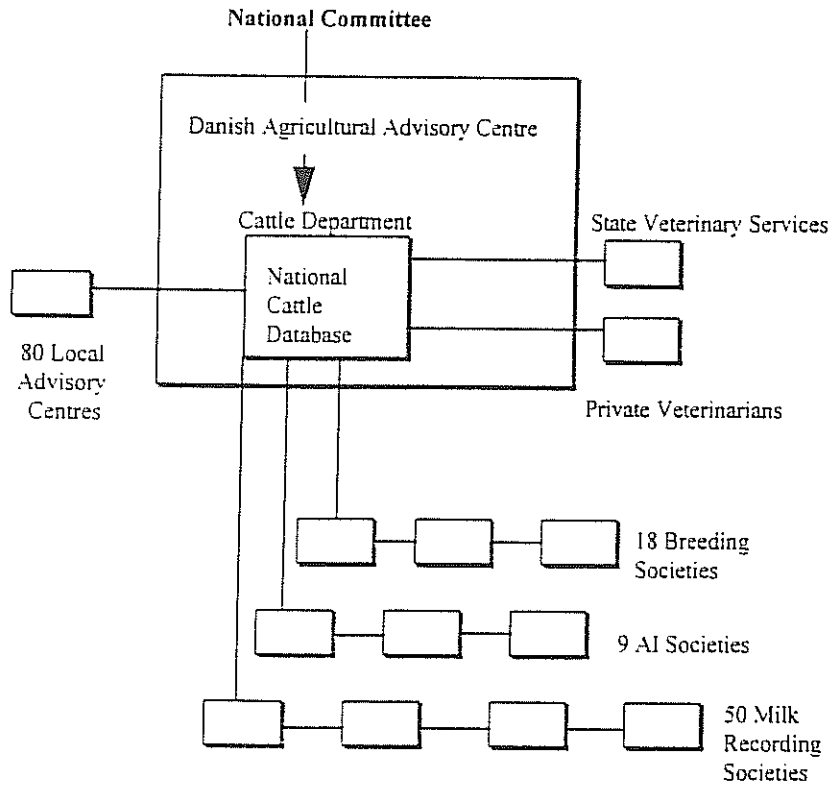
Effectively, the national committee and the cattle department constitute a national cattle industry development group at national level. The department has 70 staff. Much of the activities are advisory. It operates through a network of regional advisory centres.

A central function is the operation of the national cattle database. This is based on the national identification and registration (I&R) function which the department manages for all species on behalf of the State veterinary services. The Government pays DKR 1 million per year. The farmers pay for tags (DKR 7.5). One tag per animal is used. Replacements are free. If the farmer is not in herd recording, he pays for tags through the post, COD.

AI is operated by 9 separate AI bodies, which have a federal headquarters in the cattle department. All AI data is processed centrally. In the three dairy breeds, over 500 bulls are tested each year. The progeny test is preceded by a station performance test. The AI system employs 540 people.

Herdbook registration is managed on behalf of 18 breed societies by the cattle department.

DENMARK



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## OVERSEAS MODELS *continued*

### FRANCE - structure of cattle breeding services

France has the largest cattle industry in the EU, with 8.6m cows. Of these, 4.6m are dairy (two-third Holstein) and 4m are beef cows.

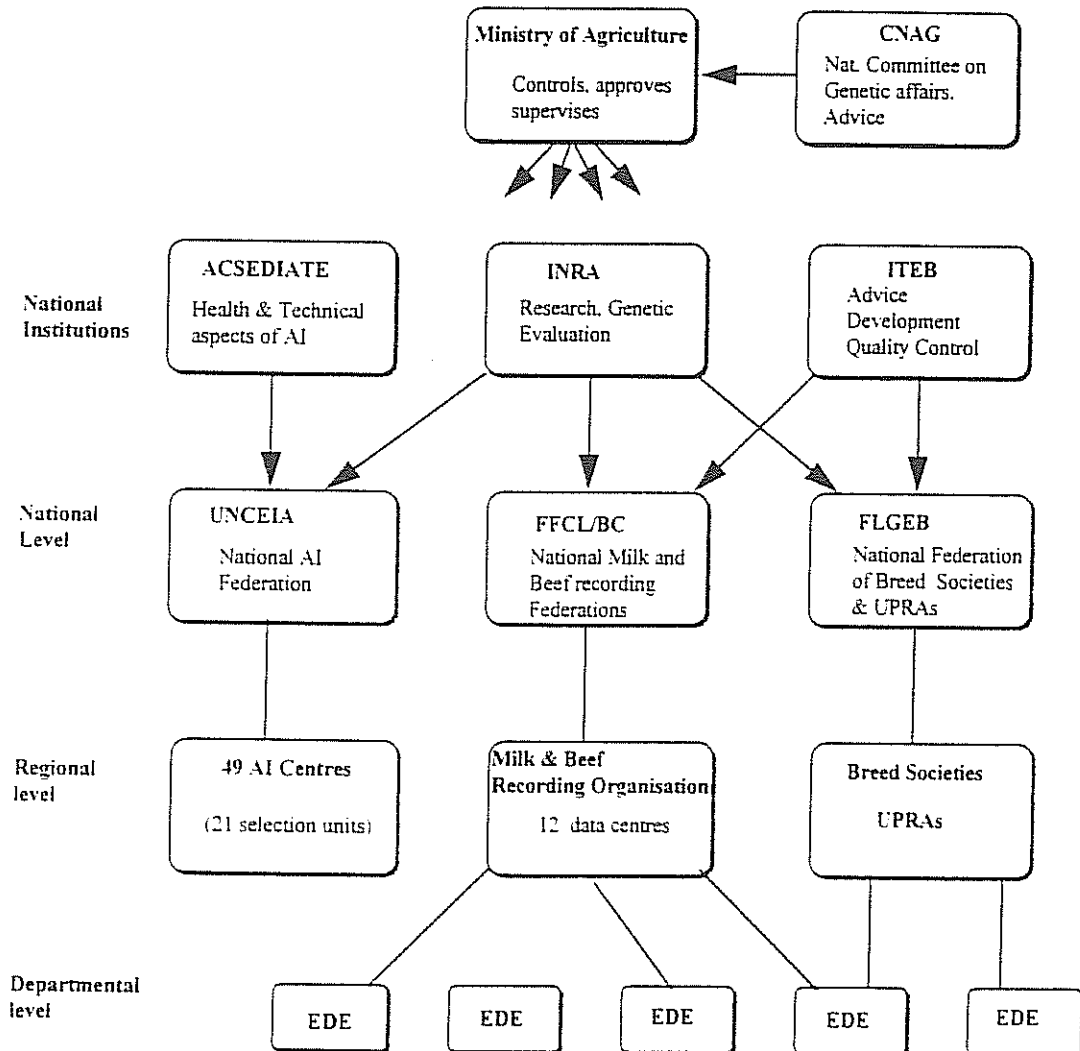
The structure of the breeding organisations serving these populations has evolved in a very planned way. Government control, through legislation and direct involvement at all levels, is greater than in most European countries. It contributes over 20% of total costs. At the local level, each Department has a farmer's organisation (EDE) which is responsible for animal identification, parentage recording, and milk and beef recording. These activities feed into regional groupings for milk or beef recording and also into breed societies and breed development and promotion bodies UPRA's. They, in turn, are federated at national level and supported by national institutions which provide a lot of the research, development, technical support and quality control functions. The whole system is supervised by the Ministry of Agriculture, which is advised by a national committee (the CNAG).

AI is provided through 49 centres, each with a designated monopoly area. These are federated into regional groupings, and operate 21 selection programmes in different breeds and regions. 75% of dairy cows and 10% of beef cows are bred by AI. The cost of AI is well above the European average (costing approximately 100 litres of milk). This cost includes funding for very large testing and selection programmes. Almost 1,000 dairy bulls (661 Holstein) were progeny tested in 1994. In the beef breeds, 150 bulls are progeny tested (80 Charolais). In the case of dual purpose (Normande, Montbeliarde) and beef breeds, bulls are pre-selected for beef traits in a performance test station before going on for progeny testing. In addition, in the three major beef breeds, maternal abilities of daughters are tested in special stations for 30 bulls per year.

Some 54% of dairy cows and 10% of beef cows are in herd testing programmes. Type classification is carried out by breed societies or UPRA, and covers 25% of recorded dairy cows and 67% of recorded beef cows. Data from herd recording are processed at 12 regional computing centres and national evaluations are carried out at a single national computing centre (CTIG). The National Institute for Agricultural Research (INRA) does all genetic evaluations and is responsible for developing methodology and programmes. The technical institute (ITEB) is responsible for quality control of data and technical support and advice throughout the system. The National AI and ET Laboratory (ACSEDIATE) is responsible for health control and supervision of technical matters in AI.

In France, each breed has a development organisation (UPRA) which has somewhat wider technical and promotional functions than breed societies elsewhere.

FRANCE



80 Farmers' organisations responsible for I&R, herdbooks, milk and beef recording

**GERMANY - structure of cattle breeding services**

Germany is a large country with 5.3 million dairy cows on 200,000 farms, and a further half million suckler cows on almost 50,000 farms. The beef and dairy sectors contribute 57% of total agricultural output.

Breeding organisations (herdbook, milk recording, AI) are well developed in all regions of the country but with considerable variety of structure. This is largely due to the fact that each of the 17 Lander has had considerable freedom to develop its structures independently.

At national level, these regional groupings are federated into a small but strong central organisation, ADR (Arbeitsgemeinschaft Deutscher Rinderzuchter). This represents 85 organisations, of which 35 are concerned with AI, 16 with milk recording, and 41 with herdbook activities (some overlap). Many of these organisations are in turn federations of local groups.

The structure of ADR covers the three main activities. Breed societies and AI are regarded as business organisations. The milk recording activities are regarded more as a service function. All genetic evaluations are done independently of the AI and herdbook organisations.

The herdbook sector is very strong in Germany. The 41 breed societies include over 72,000 herds and 2.5 million cows (representing 28% of herds and 44% of cows in the country). The dominant breeds are Holstein-Friesian (over 50%) and Fleckvieh (25%).

The southern part of the country, (and the breeds which predominate there: Fleckvieh, Braunvieh, Gelbvieh) is separately organised through 28 breed societies. The northern area, including Black & White and all other dairy breeds, is organised in 34 breed societies. Beef breeds are separately organised on a national basis through 11 land organisations and 13 breed societies.

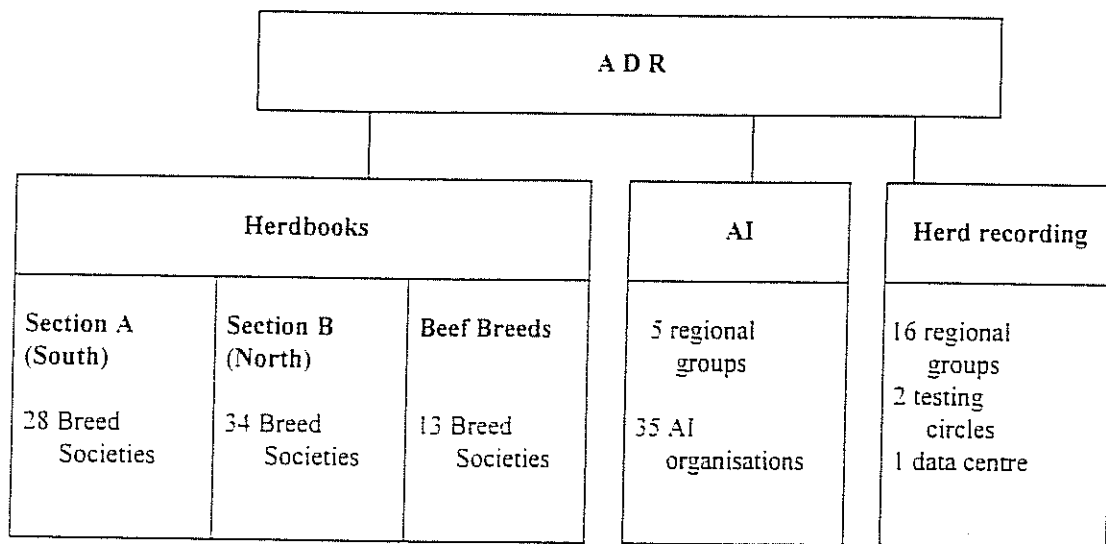
ADR has a total budget of Dm1.2m.(£520,000), and a staff of 6. Funding is provided by its member organisations on an agreed formula basis: herdbooks 40%, AI organisations 40%, milk recording organisations 20%. The organisations in turn levy this as a fee per cow (about 20 pfennig per registration, 8 pf. for first AI, and 6 pf. per recorded cow).

AI activities are represented by 35 breeding organisations, organised into 5 groupings and federated together within ADR.

Milk recording organisations are similarly and separately organised in 16 regional associations.

OVERSEAS MODELS *continued*

There are 4 main computing centres, which do genetic evaluations. The largest one is at Verden, and it deals with Holstein/Friesian and Red & White. It is funded by herdbook, AI and milk recording organisations. Centres in Munich and Stuttgart deal with Fleckvieh and Brown Swiss respectively, and are local state institutions. The fourth centre is Kiel, and deals with the small Angler breed. It is owned by the milk recording organisations.



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## OVERSEAS MODELS *continued*

### NETHERLANDS - structure of cattle breeding services

Holland has 1.75 million dairy cows, two thirds Holstein and one third Red & White. Beef cows and other breeds are negligible. The service organisations (AI, milk recording, advisory, analyses) are all coop in nature, and have evolved rapidly in recent years into a coherent national structure.

With the shift to high input intensive dairying in the 1970s and 1980s, the Dutch parted company with dual purpose objectives. They recognised the superior milk genetics of US Holsteins, and in the mid 1980s did a total conversion from Dutch Friesians to US Holsteins. In 1985, 50% of the semen in use was imported, and through the late 1980s almost all of the young bulls put on test were sourced via embryos from the US. The conversion is now complete, and the Dutch emerged in the 1990s as once again major players on the international export scene.

The central organisation is NRS, which evolved from the herdbook and milk recording activities. It operates the central data system for all activities. It is controlled by a board of 16 members representing the users. Its structure is federal, with regional and local organisations being responsible for field activities.

The milk recording network is the most important data source for all purposes. 77% of cows are in recorded herds.

Systematic identification and registration was started in 1990. They now have 18 million animals in their database with 1.9 million calves entered each year. Two plastic tags per animal are used, and most of the data entry is by the farmer using touch telephone. The cost of the I&R system is covered 50% by government, and 50% by the Farmers' Agricultural Board (using levy type funds). The government Animal Health Organisation is formally responsible for the national identification and registration, but has delegated all operational responsibilities for this to NRS.

AI breeding is the responsibility of Holland Genetics. This is a national organisation owned by the two large regional AI groupings (and a third smaller one). The main activity is to operate a massive annual bull evaluation (500 bulls, including 300 Holsteins). They also have a nucleus breeding programme (the Delta programme) using embryo transfer to generate about one third of the bulls going into the national test.

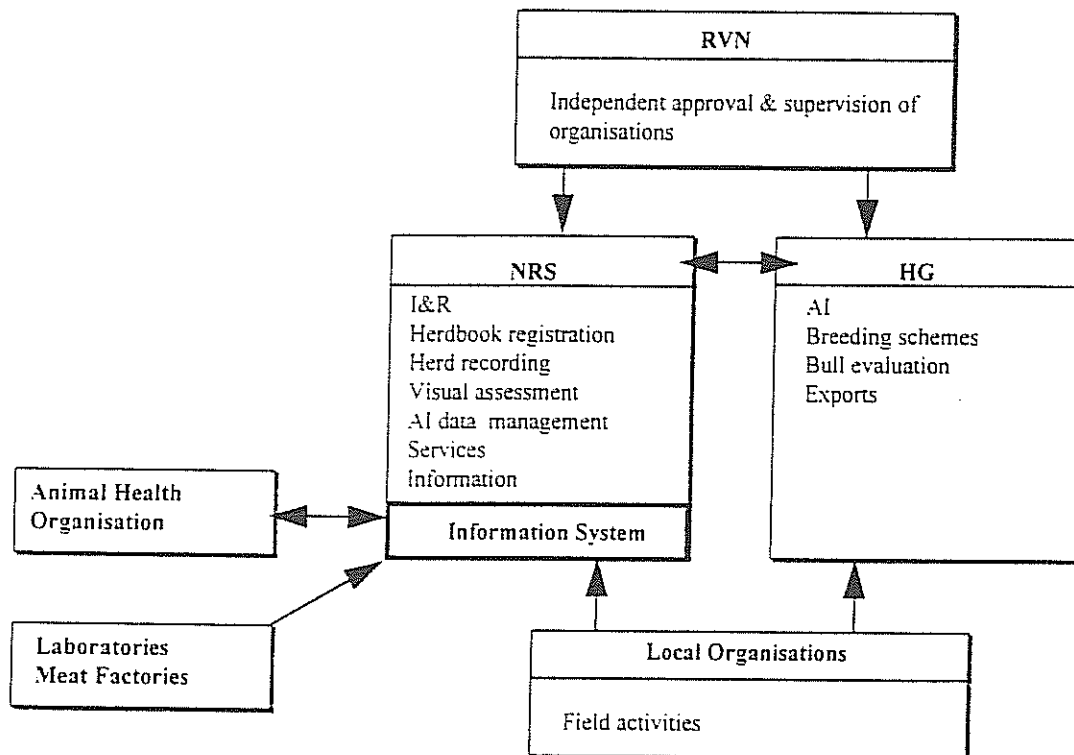
Holland Genetics and NRS are now effectively one organisation. Because the evaluation as well as the sale of products would both be under the same organisation, the Dutch government has set up a separate office (RVN) to act as an independent 'competent authority' which approves and supervises the standards used in all organisations in the cattle breeding and services sector.



## OVERSEAS MODELS *continued*

The most recent estimate of the costs of these various services (1994) is as follows:

Milk recording	50
Registration (animal health plus herdbook)	16
AI	53
Other	11
<b>Total</b>	<b>130kg milk</b>



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## OVERSEAS MODELS *continued*

### NEW ZEALAND - structure of cattle breeding services

New Zealand has 2.6 million dairy cows and 2.1 million beef cows. Services to the beef sector are almost all provided on a commercial basis by private interests, with most of the breeding, herd management, and related data processing activities provided by Beefplan, an Australian service. The dairy sector, on the other hand, has highly developed and integrated services. It is these which are most relevant to developments in Ireland.

There are some 15,000 dairy farmers, and average herd size is 180 cows. Most cows are in milk recording, and the majority are bred by AI. Almost all of the services are provided by the Livestock Improvement Corporation (LIC), a wholly owned subsidiary of the Dairy Board. The Dairy Board is totally controlled by the dairy manufacturing co-ops, which in turn are controlled by producers. LIC operates as an independently managed subsidiary company. Its board is dominated by producer representatives, elected on a regional basis. The Dairy Board nominates two members (one normally also a producer), and the General Manager of LIC also sits on the Board.

Turnover of LIC is about NZ\$60 million. Of this, \$5 m. is provided by the Dairy Board. This is essentially levy-type funding, since it eventually comes off the milk cheque. Most of this \$5 m. is intended to fund advisory services, and includes about \$1 m. for R&D. The remaining \$55 million income of LIC comes equally from its two main services, herd recording and AI.

Over 90% of dairy cows are in Herd Recording. 80% of these herds are on a 'self sampler' programme. This costs about \$10 per cow per year. Under the programme, the herd owner does the recording, and sends milk samples for analysis 4 times during the season. There is one analytical lab, and one central data system.

Identification and registration, together with a package of reproductive management information is provided under the MINDA service. This costs \$1 per cow per year, and includes eartags. The farmer does all the work at herd level, and the service essentially provides him with computer backup and management information.

Less than 5% of cows are in breed societies. The breed societies accept the same identification and registration information as LIC, but print their own certificates. They use the LIC database on a fee-per-unit basis. For beef herds, and dairy herds outside the milk recording network, the herd owner has a responsibility to identify animals for TB control purposes.

LIC operates one bull stud, and tests 150 Holstein and 80 Jersey bulls per year. The cow population is about 60% Holstein, and this proportion is increasing. Some 75% of cows are bred by AI. About 25% of AI, including semen sales and technician service, is provided by commercial competitors. Standard AI, with a premier sire, costs \$15 for 1.3 services and semen (1kg milk is 23 cents).

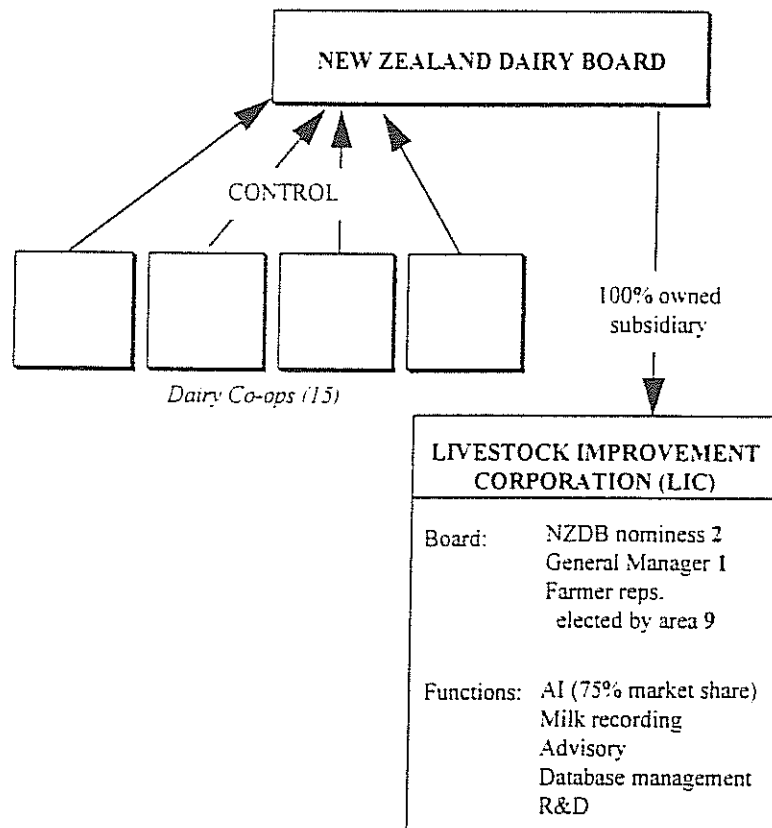
## OVERSEAS MODELS *continued*

A database covering AI, milk recording and all related activities is managed by LIC. Access to the database is controlled by an independent DHI tribunal. This consists of 3 people, headed by a judge, and was set up to ensure fair play for competitors of LIC in access to the data.

The only legislative input is that the Dairy Board is set up by an act of parliament, and is required to undertake activities which promote profitability of dairy farms. The only other government involvement is through support for research. Of total government research funding of \$260 m., \$12 m. goes to the dairy sector, including \$4 m. for production research. About \$2 m. goes separately to support beef production research. These activities include development work on breeding and data management.

In addition, the dairy board spends \$48 m. on R&D, of which \$7 m. goes for production. Of the total pool of \$11 m. for dairy production related R&D (\$4 m. from government, \$7 m. from Dairy Board), about \$3 m. is directed to livestock improvement.

LIC has 450 full-time staff, including all recorders, supervisors etc. In addition, it has 1,500 part-time seasonal temporary contract employees, including approximately 1,200 AI technicians.



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## OVERSEAS MODELS *continued*

### **NORWAY - structure of cattle breeding services**

Norway has a small cow population of 340,000, of which 93% are milking cows, 90% are milk recorded, and almost 100% are bred by AI. Average herd size is about 15 cows, and there are 21,000 registered herds. Almost all cows are Norwegian Red (some admixture of Swedish Red & White, Holstein and Finnish Ayrshire). Production levels are high (6,365 Kg, 4.08 fat, 3.20 protein in 1994). Almost all heifers are reared as replacements, and almost all males are reared at home for slaughter as bulls at 17 months.

Dairy and meat production in Norway are almost 100% organised by cooperatives, with six coops on the dairy side, and two on the meat. Through the coops, they have built up what is probably the most complete and integrated set of services to cattle breeding to be found in Europe. These services are provided by two producer-owned organisations - NRF for AI and related activities, and NML for herd recording and related work. Both organisations represent essentially the same owners and users. A national cattle database was set up in 1971, and is maintained by NML, though used by both organisations.

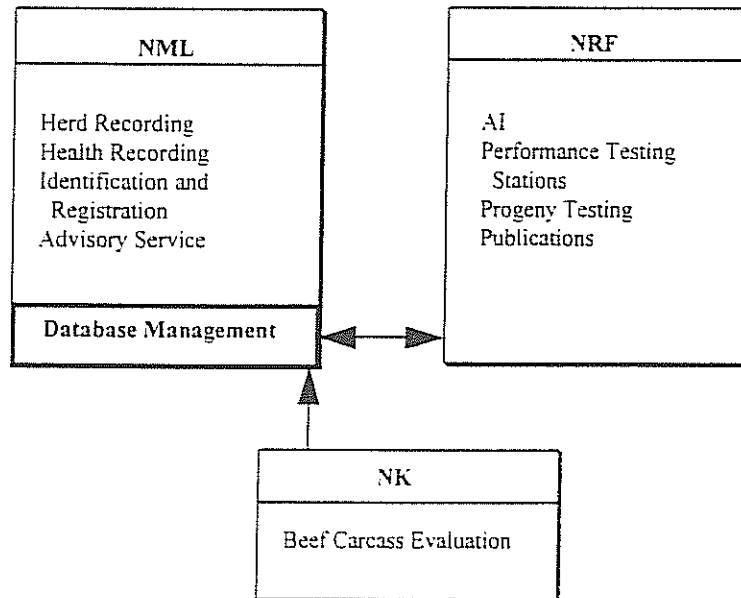
Through NML, 280,000 cows are recorded in 21,000 herds. This is about the same scale of milk recording as in Ireland. 90% is done by the farmer, with 4 visits per year from a supervisor. All the veterinary interventions are recorded. All data from the farm is collected by the supervisor. Data from slaughtered animals is automatically transferred to the database.

There is a single national breeding programme managed by the AI organisation, NRF. Each year, 400 young bulls are purchased and reared in two performance test centres. 130 are selected, mainly on dairy index, to go on for progeny testing. In order to save costs, all bulls are slaughtered during the waiting period, after 40,000 - 70,000 units of semen have been stored. The higher figure relates to the top third of bulls on pedigree-estimated breeding value. Semen from the 15 selected bulls is used over two years. Four to six bull sires are used each year. Total first inseminations are 420,000 per year.

Each of the two organisations has an independent structure. NRF pays £650,000 per year to NML for data supplied from the database. Government has not been involved financially for over 20 years. The only exception is government subsidies to compensate for remoteness in the provision of services.

The personnel involved in providing these services are all employed by the two organisations. NML has 548 employees (475 full-time equivalents). NRF has 348 staff (263 full-time equivalents).

NORWAY



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## OVERSEAS MODELS *continued*

### SWEDEN - structure of cattle breeding services

The Swedish cattle population has been declining steadily since 1960, and the country now has 590,000 dairy cows, and 165,000 beef cows.

Intensive local services to support dairy farmers in breeding, health and husbandry have been evolving in co-operative structures for many decades. Since 1959, these in turn have been serviced by a central organisation, the Swedish Association for Livestock Breeding and Production (SHS). It is the national organisation of the husbandry co-ops, AI studs, herdbook organisations and the beef production co-op. SHS is owned by these member organisations, and the board of SHS is elected by representatives from them. As a national organisation, SHS has the following responsibilities and tasks:

- Responsibility for official recording and breeding evaluation of cattle, pigs and goats.
- Design, support and running of computer systems.
- Education of field staff.
- Responsibility for health services for cattle.
- Calculate and publish official breeding values.
- Design models for extension services and give support to local member organisations.
- Publication of magazines for cattle breeders.
- Research and development work for the activities mentioned above.
- Stimulate co-operation between members organisations and efficient use of resources.

The work of SHS is financed almost exclusively by direct fees from the member organisations. For the most part these fees are based on a fixed amount per recorded cow and per first insemination. Some additional services are charged on a fee-per-service basis. The only State involvement is in the animal health area, where SHS and the slaughter organisations are partly compensated for the costs of running their national programmes of disease prevention.

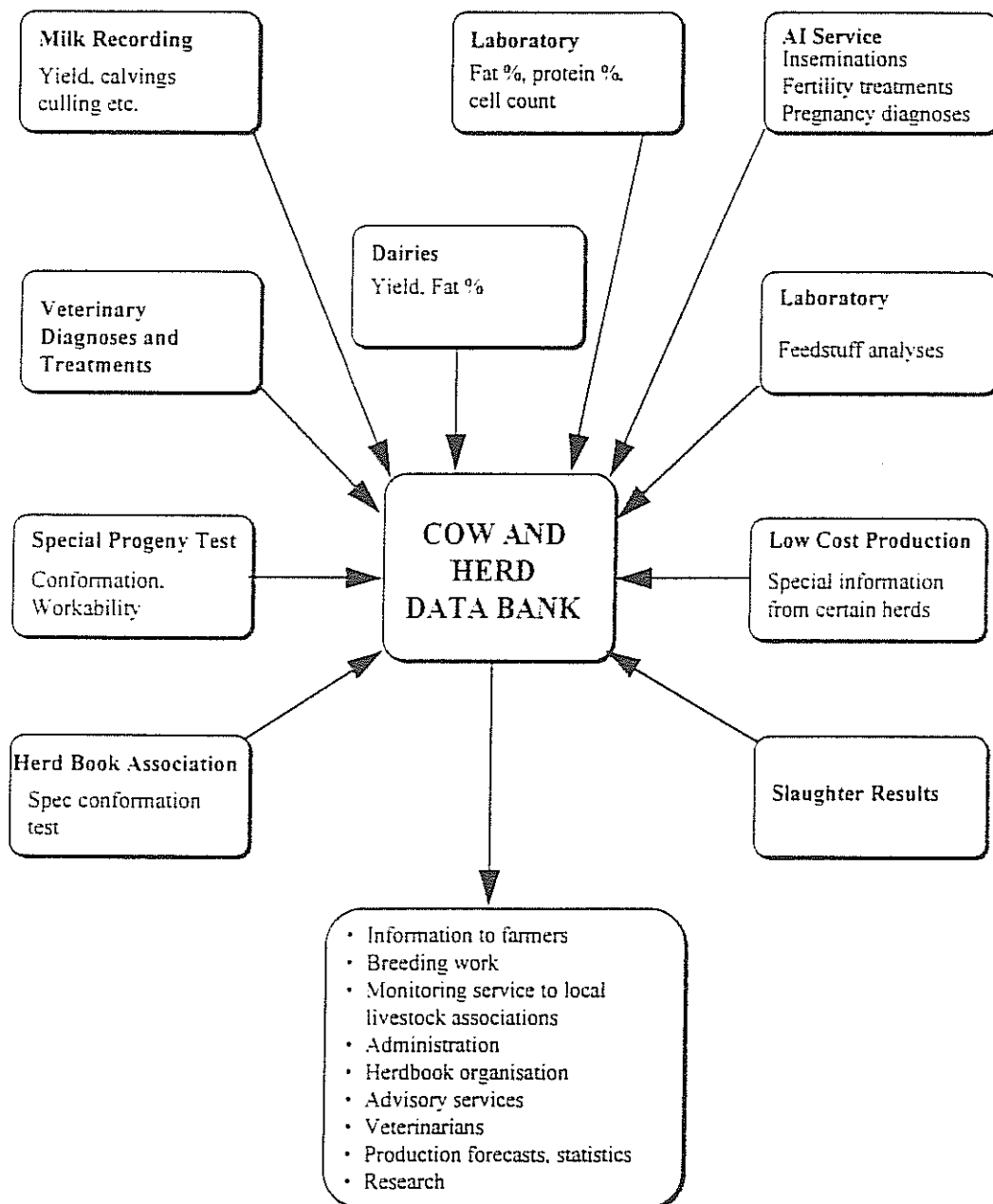
Central to SHS services is the national cattle database which it operates. This does central data processing, including billing, for AI and milk recording. Data entry to the system comes from milk recording, AI, slaughter houses and veterinarians, who are required to report all veterinary interventions to the system.

Herd recording is widely practised: 77% of all dairy cows, and 9% of beef cows are in recording systems. Most farmers opt to do their own weighing and sampling, although a full technician service is available.

Approximately 90% of dairy cows are bred by AI. Over 50% of the cow population is Swedish Red & White, and 40% is Holstein Friesian. Despite the small size of these populations (approximately 250,000 and 200,000 cows respectively) the high levels of AI usage and milk recording support intensive breeding programmes. 125 Red & White and 90 Holstein Friesian bulls are progeny tested each year. Because they include emphasis on traits like fertility, the aim is to record 100 to 150 daughters per bull.

**Input and Output in Swedish Milk Recording, AI and Health Services.**

**SWEDEN**



### United Kingdom - structure of cattle breeding services

The U.K. has 2.7 million dairy cows and 1.7 million beef cows. Services to the cattle breeding industry have traditionally been organised separately in Scotland and Northern Ireland, with the bulk of activity in England and Wales. There, the scene has been dominated for decades by two national organisations, the Milk Marketing Board (MMB) and the Meat and Livestock Commission (MLC). Both were statutory bodies, funded by fees and levies. Breed societies have a strong tradition, more independent of the national organisations than in continental countries.

In 1990, the Wilson report was produced. It was intended as the grand plan for the UK services in the cattle breeding and related areas, in the wake of the break-up of the MMB.

A new Milk Development Council (MDC) has been formed. It raises a levy on milk (target £5M), of which close to £500,000 is used to fund the Animal Data Centre (ADC), a key feature of the Wilson Committee recommendations. Most of the rest is intended for promotional activities.

Milk recording in the UK is at a somewhat lower level than on the continent - 55% of cows are recorded. The service is provided by National Milk Records (NMR), formerly a service of MMB, but now a freestanding self financing service, shortly to be given a cooperative structure. Average size of recorded herds is 95, and there are 13,000 members, giving about 1.25M recorded cows. Most opt for a technician service. Cost is about £10 per cow per year (85% also take cell counting at an extra pound per cow). Costs are contained by employing part time recorders, typically doing six to nine herds per month. There are 1,700 of these, with 65 supervisors, 6 area managers and one national manager. They find training and testing important. There are 2 (were 5) labs, each doing 6 million samples per year. In eighteen months, NMR has reduced regional and headquarters office staff by 50%, mainly by altering work routines and by automation.

AI was also an MMB service, but is now a national co-op (Genus). Turnover is about £30M per year. Because of growing competition in AI, they are concentrating on other products and services. These include on-farm information and advisory services.

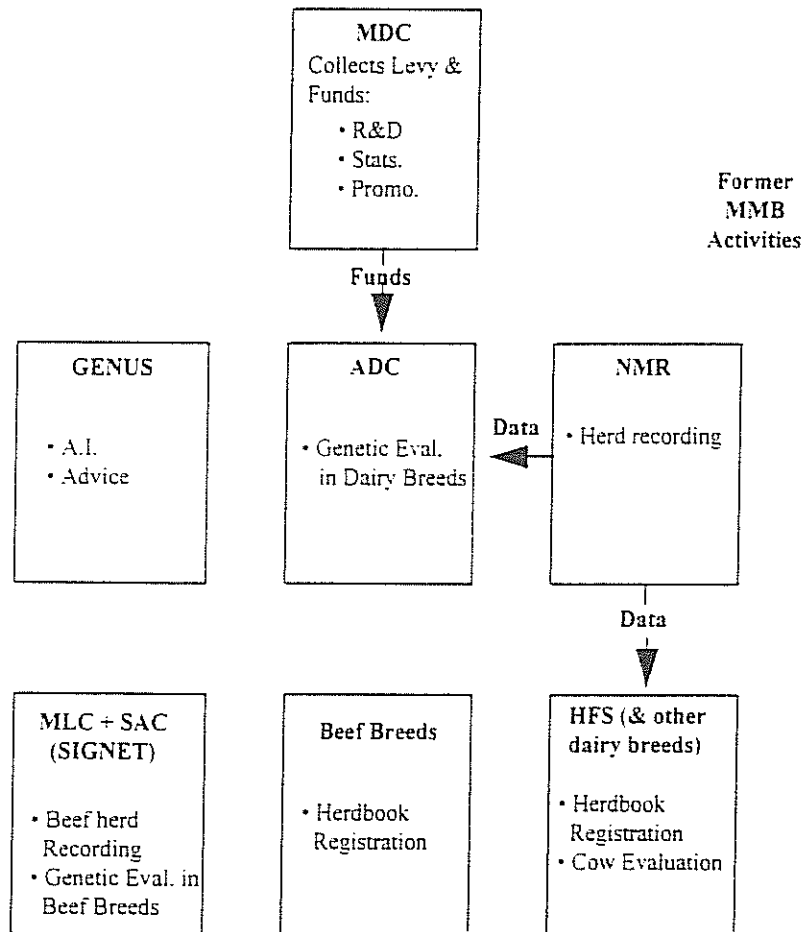
MLC continues, deriving its funds from Government, levy and fees (under 1967 Act). Recently, MLC set up a new company, called SIGNET, with the Scottish Agricultural Colleges (SAC), to offer its services to beef breeders on a commercial basis. They provide on farm recording, muscle scanning, registration services to breed societies, and genetic evaluation. These services are tied in with the advisory package offered by SAC. MLC also spends about £2M on R&D in the breeding area.



## OVERSEAS MODELS *continued*

Breed societies are jointly represented by the National Cattle Breeders Association (NCBA). The pattern is for the smaller beef breeds to have their registration work done on contract by MLC and the dairy ones by NMR. The biggest, HFS, does its own registrations, cow inspections and cow indexing.

The UK experience in implementing the Wilson committee report is instructive. There is a feeling that full cohesion and common purpose has not yet been achieved. This is partly because the roles of several of the different strong players have not been well defined, and partly because momentum was allowed to drop after the report was agreed.



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## APPENDICES *continued*

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### APPENDIX B

#### PROJECTED FINANCIAL STATEMENTS - ICBA

B1(a) - B1(d)	Funding Options
B2	Capital Costs Summary
B3	Operating Statement
B4	Summary of Contributions
B.5.1 - B.5.8	Service Transaction Details

Irish Cattle Breeding Authority  
5-Year Development Plan

Appendix B1(a)

**ICBA - FINANCING OPTION 1**

DETAILS	5-YEAR TOTAL £'000s	Year 1 1,996 £'000s	Year 2 1,997 £'000s	Year 3 1,998 £'000s	Year 4 1,999 £'000s	Year 5 2,000 £'000s
<b>CAPITAL COSTS</b>	2,080	2,080	0	0	0	0
<b>OPERATIONS</b>						
Contribution from operations	3,349	(28)	134	984	1,016	1,044
Central Operating costs (excl. depreciation)	4,759	956	951	951	951	951
Operating cash surplus/deficit	(1,409)	(984)	(616)	33	65	93
<b>DEVELOPMENT (technical expense systems)</b>	2,500	500	500	500	500	500
<b>TOTAL FUNDING REQUIREMENT</b>	<b>5,989</b>	<b>3,564</b>	<b>1,116</b>	<b>1,067</b>	<b>1,116</b>	<b>1,047</b>
<b>POSSIBLE FUNDING:</b>						
Structural Funds Support	1,759	1,634	125		0	0
Industry contributions	2,230	1,530	591	67	15	7
Charge on I&R tags (3 million tags @p 20p)	2,000	400	400	400	400	400
Contribution by Department	0					
<b>TOTAL FUNDING</b>	<b>5,989</b>	<b>3,564</b>	<b>1,116</b>	<b>1,067</b>	<b>1,116</b>	<b>1,047</b>

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Appendix B1(b)

**LEISA FINANCING OPTION 2**

DETAILS	5-YEAR TOTAL £'000s	Year 1 1,996 £'000s	Year 2 1,997 £'000s	Year 3 1,998 £'000s	Year 4 1,999 £'000s	Year 5 2,000 £'000s
<b>CAPITAL COSTS</b>	2,080	2,080	0	0	0	0
<b>OPERATIONS</b>						
Contribution from operations	3,349	(26)	334	984	1,016	1,044
Central Operating costs (excl depreciation)	4,739	956	951	951	951	951
Operating cash surplus/deficit	(1,409)	(984)	(616)	33	65	93
<b>DEVELOPMENT (technical expenses/systems)</b>	2,500	500	500	500	500	500
<b>TOTAL FUNDING REQUIREMENT</b>	<b>5,989</b>	<b>3,564</b>	<b>1,116</b>	<b>1,417</b>	<b>1,565</b>	<b>1,547</b>
<b>POSSIBLE FUNDING:</b>						
Structural Funds Support	1,759	1,634	125	0	0	0
Industry contributions	1,110	985	125	400	400	400
Charge on I&R tags (2million tags @ 20p)	2,000	400	400	400	400	400
Contribution by Department	1,120	545	466	67	35	7
<b>TOTAL FUNDING</b>	<b>5,989</b>	<b>3,564</b>	<b>1,116</b>	<b>1,417</b>	<b>1,565</b>	<b>1,547</b>

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Appendix B1(c)

**ICBA FINANCING OPTION 3**

DETAILS	5-YEAR TOTAL £'000s	Year 1 1,996 £'000s	Year 2 1,997 £'000s	Year 3 1,998 £'000s	Year 4 1,999 £'000s	Year 5 2,000 £'000s
<b>CAPITAL COSTS</b>	2,080	2,080	0	0	0	0
<b>OPERATIONS</b>						
Contribution from operations	1,489	(28)	334	364	396	424
Central Operating costs (excl. depreciation)	4,759	956	951	951	951	951
Operating cash surplus/ deficit	(3,269)	(984)	(616)	(587)	(555)	(527)
<b>DEVELOPMENT (technical expenses/systems)</b>	2,500	500	500	500	500	500
<b>TOTAL FUNDING REQUIREMENT</b>	<b>2,789</b>	<b>1,554</b>	<b>1,116</b>	<b>1,107</b>	<b>1,055</b>	<b>1,027</b>
<b>POSSIBLE FUNDING</b>						
Structural Funds Support	1,759	1,634	125	0	0	0
Industry contributions	2,445	985	141	337	455	527
Change on I&R tags (2million tags @ 20p)	2,000	400	400	400	400	400
Contribution by Department	1,645	545	450	350	200	100
<b>TOTAL FUNDING AVAILABLE</b>	<b>7,849</b>	<b>3,564</b>	<b>3,116</b>	<b>2,707</b>	<b>2,055</b>	<b>1,027</b>

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Appendix B1(d)

**ICBA FINANCING OPTION 4**

DETAILS	5-YEAR TOTAL £'000s	Year 1 1,996 £'000s	Year 2 1,997 £'000s	Year 3 1,998 £'000s	Year 4 1,999 £'000s	Year 5 2,000 £'000s
<b>CAPITAL COSTS</b>	2,080	2,080	0	0	0	0
<b>OPERATIONS</b>						
Contribution from operations	1,489	(28)	334	304	396	424
Central operating costs (excl. depreciation)	4,759	956	951	951	951	951
Operating cash surplus/deficit	(3,269)	(984)	(616)	(587)	(555)	(527)
<b>DEVELOPMENT (technical expenses/programs)</b>	2,500	500	500	500	500	500
<b>NET FUNDING REQUIREMENT</b>	<b>7,149</b>	<b>7,149</b>	<b>7,149</b>	<b>7,149</b>	<b>7,149</b>	<b>7,149</b>
<b>POSSIBLE FUNDING</b>						
Structural Funds Support	1,759	1,634	125	0	0	0
Industry contributions	4,445	1,185	541	737	855	927
Charge on I&R tags (2million tags @ 4pp)	0	0	0	0	0	0
Contribution by Department	1,645	545	450	350	300	100
<b>TOTAL FUNDING</b>	<b>7,849</b>	<b>3,364</b>	<b>1,116</b>	<b>1,087</b>	<b>1,155</b>	<b>1,027</b>

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Appendix B2

**ICBA: CAPITAL COSTS SUMMARY**

DETAILS	5-YEAR TOTAL £'000s	Year 1 1996 £'000s	Year 2 1997 £'000s	Year 3 1998 £'000s	Year 4 1999 £'000s	Year 5 2000 £'000s
<b>CAPITAL COSTS</b>						
Computer hardware	1012	1012				
Computer software	821	821				
Accommodation	63	61				
<b>TOTAL COMPUTER COSTS</b>	<b>1895</b>	<b>1895</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Furniture and Fittings	15	15				
Vehicles	130	130				
Test equipment	20	20				
Other	0					
<b>TOTAL</b>	<b>2080</b>	<b>2080</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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Appendix B3

**ICBA PROJECTED OPERATING STATEMENT**

DETAILS	5-YEAR TOTAL £'000s	Year 1 1,996 £'000s	Year 2 1,997 £'000s	Year 3 1,998 £'000s	Year 4 1,999 £'000s	Year 5 2,000 £'000s
<b>OPERATING INCOME</b>						
Contributions from operations	3,349	(28)	334	984	1,016	1,044
Other income	0					
<b>TOTAL</b>	<b>3,349</b>	<b>(28)</b>	<b>334</b>	<b>984</b>	<b>1,016</b>	<b>1,044</b>
<b>CENTRAL OPERATING COSTS</b>						
Wages and salaries - management & admin	500	100	100	100	100	100
- information systems	640	128	128	128	128	128
- QA and Technical Support	649	128	128	128	128	128
Hardware/software maintenance	1,030	206	206	206	206	206
Data communications	575	115	115	115	115	115
Rent and Rates	600	120	120	120	120	120
Insurance	100	20	20	20	20	20
Light and Heat	60	12	12	12	12	12
Provisional expenses	300	100	50	50	50	50
Stationery	30	10	5	5	5	5
Telephone & Postage (general)	60	12	12	12	12	12
Audit and accountancy	25	5	5	5	5	5
Depreciation - hardware	1,012	253	253	253	253	253
Depreciation - software	821	164	164	164	164	164
Depreciation - other	248	50	50	50	50	50
Research & Development Costs	200		50	50	50	50
<b>TOTAL</b>	<b>6,838</b>	<b>1,422</b>	<b>1,417</b>	<b>1,417</b>	<b>1,417</b>	<b>1,464</b>
<b>OPERATING SURPLUS/(DEFICIT)</b>	<b>(3,489)</b>	<b>(1,451)</b>	<b>(1,083)</b>	<b>(433)</b>	<b>(402)</b>	<b>(121)</b>



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Appendix B-4

**ICBA SUMMARY OF CONTRIBUTIONS**

ACTIVITY	5-YEAR TOTAL £'000s	Year 1 1996 £'000s	Year 2 1997 £'000s	Year 3 1998 £'000s	Year 4 1999 £'000s	Year 5 2000 £'000s
1 Identification and Registration	1860	0	0	620	620	620
2 Milk Recording	635	104	121	128	137	145
3 Herdbooks	34	0	5	7	10	12
4 Type classification & Final Assessment	55	0	8	11	15	21
5 AI	750	0	186	188	188	188
6 Charlemagne Beef Recording	68	6	10	14	18	20
7 Central Performance Testing	-517	-111	-109	-106	-105	-105
8 Calculations/publication of Values	-485	-27	113	123	133	143
<b>TOTAL</b>	<b>3349</b>	<b>-28</b>	<b>334</b>	<b>984</b>	<b>1016</b>	<b>1044</b>



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Appendix B5.2

**SERVICE TRANSACTION DETAILS: MILK RECORDING**

DETAILS	Provided to / (by)	Current Volumes	Unit price 1995 IR£	PROJECTED TRANSACTIONS									
				Year 1 (1996)		Year 2 (1997)		Year 3 (1998)		Year 4 (1999)		Year 5 (2000)	
				Units 000's	Value IR£'000	Units 000's	Value IR£'000	Units 000's	Value IR£'000	Units 000's	Value IR£'000	Units 000's	Value IR£'000
<b>INCOME</b>													
MIR national data	MIR Soc's	300000	0.20	125	65	350	70	375	75	400	80	425	85
MIR data for pedigree herds (Quality assurance/inspection)	Breed Soc MIR Soc's	100000	0.10 1.00	100 325	10 325	100 350	10 350	100 375	10 375	100 400	10 400	100 425	10 425
Optional reports*	Farmet	N/A	1.00			14	14	15	15	16	16	17	17
<b>TOTAL INCOME</b>					400		414		475		506		537
<b>COSTS</b>													
Quality assurance/inspection			0.90	125	293	350	315	375	338	400	360	425	383
Optional reports (post)			0.80			14	4	15	5	16	5	17	5
Annual reports			4.00	1	4	1	4	1	5	1	4	1	4
<b>TOTAL COSTS</b>					297		323		347		369		392
<b>CONTRIBUTION</b>					104		121		128		137		145
<b>*ADDITIONAL REPORTS</b>													
Culling reports													
Breeding reports													
Feed programmes													
Herd management data													
Cow values													
Somatic cell counts													
<b>INTERNATIONAL BENCHMARKS</b>				<b>GENERAL ASSUMPTIONS</b>									
MIR cows (000s)				30% of national dairy herd (1.3m)									
Denmark				400,000 MIR cows									
600				Optional reports.									
85%				of consolidation									
% of national herd				Average 2 per farm per annum									
				IDRC* included in ICBA from 1996									

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Appendix B5.3

**SERVICE TRANSACTION DETAILS - HERDBOOK ADMINISTRATION**

DETAILS	SERVICE Provided to / (by)	Current Volumes	Unit price 1995 IRL	PROJECTED TRANSACTIONS																	
				Year 1 (1996)		Year 2 (1997)		Year 3 (1998)		Year 4 (1999)		Year 5 (2000)									
				Units 000's	Value IRL'000	Units 000's	Value IRL'000	Units 000's	Value IRL'000	Units 000's	Value IRL'000	Units 000's	Value IRL'000								
<b>INCOME:</b>																					
Society contribution	Breed Soc		0.50																		
Animal registration	Farmer		10.00	2	20	2	20	3	30	4	40	4	40	5	50						
Certificates	Farmer		1.25	1	1	1	1	1	1	2	2	3	3	2	2						
<b>TOTAL INCOME:</b>					22		31		45		55		63		70						
<b>COSTS:</b>																					
Data input - registration			0.10																		
Certificates			0.50	2	1	3	2	4	2	3	3	4	4	5	5						
Post			0.50	2	1	3	2	4	2	3	3	4	4	5	5						
Admin/Production of Herdbook			7.50	2	15	2	15	3	23	4	30	4	30	5	38						
<b>TOTAL COSTS:</b>					17		26		34		43		50		58						
<b>CONTRIBUTION:</b>					5		7		10		12		13		12						

GENERAL ASSUMPTIONS	
TARGET (1999)	N/A
ACTIVITY	Provision of herdbook services to small societies on request

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Appendix B5.4

**SERVICE TRANSACTION DETAILS: TYPE CLASSIFICATION AND LINEAR ASSESSMENT**

SERVICE DETAILS	Provided to / (by)	Current Volumes	Unit price 1995 IRL	PROJECTED TRANSACTIONS										
				Year 1 (1996)		Year 2 (1997)		Year 3 (1998)		Year 4 (1999)		Year 5 (2000)		
				Units 000's	Value IRL'000	Units 000's	Value IRL'000	Units 000's	Value IRL'000	Units 000's	Value IRL'000	Units 000's	Value IRL'000	
INCOME (Classification/assessmt (beef) Classification/assessmt (dairy))	Farmers Farmers		10.00 10.00	1 5	7 45	1 6	8 60	1 8	9 83	1 12	10 120			
TOTAL INCOME					52		68		92		130			
COSTS Subcontract costs Data processing Postage			8.00 0.10 0.30	3 5 5	42 1 2	7 7 7	54 1 2	9 9 9	73 1 3	13 13 13	104 1 4			
TOTAL COSTS					44		57		77		109			
CONTRIBUTION					8		11		15		21			

GENERAL ASSUMPTIONS

TARGET (1999)  
ACTIVITY

N/A  
Linear assessment provided for:  
(a) pedigree beef animals rising from 10% to 20% (year 2000)  
(b) dairy herds (if competitive) rising from 10% (1997) to 20% (2000)

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Appendix B5.5

**SERVICE TRANSACTION DETAILS: AI AND PROGENY TESTING**

DETAILS	SERVICE Provided to / (by)	Current Volumes	Unit price 1995 IRL	PROJECTED TRANSACTIONS											
				Year 1 (1996)		Year 2 (1997)		Year 3 (1998)		Year 4 (1999)		Year 5 (2000)			
				Units 000's	Value IRL'000	Units 000's	Value IRL'000	Units 000's	Value IRL'000	Units 000's	Value IRL'000	Units 000's	Value IRL'000	Units 000's	Value IRL'000
<b>INCOME</b>															
Identify/validate offspring	AI org's		2.00	9	18	10	20	10	20	10	20	10	20	10	20
Progeny records	AI org's		1.00	132	132	132	132	132	132	132	132	132	132	132	132
Linear assessment of daughters	AI org's		10.00	5	50	5	50	5	50	5	50	5	50	5	50
Beef carcass data	AI org's		2.00	10	20	10	20	10	20	10	20	10	20	10	20
QA & inspection services	AI org's				60		60		60		60		60		60
<b>TOTAL INCOME</b>					280		282		282		282		282		282
<b>COSTS</b>															
Linear assessment subcontracts			8.00	5	40	5	40	5	40	5	40	5	40	5	40
QA & inspection costs					54		54		54		54		54		54
<b>TOTAL COSTS</b>					94		94		94		94		94		94
<b>CONTRIBUTION</b>					186		188		188		188		188		188

**GENERAL ASSUMPTIONS**

TARGET (1999) N/A

ACTIVITIES  
 Id/Valid offspring : 100 bulls x 100 offspring each  
 Progeny records : 6000 daughters + 60000 contemporaries (twice per year)  
 Linear assess : 5000 p/a  
 Carcass data : 100 bulls @ 100 offspring per bull = 10000 p/a  
 QA/Inspection : 2 inspectors

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Appendix B5.6

**SERVICE TRANSACTION DETAILS ON FARM BEEF RECORDING**

SERVICE		PROJECTED TRANSACTIONS																			
		Year 1 (1996)		Year 2 (1997)		Year 3 (1998)		Year 4 (1999)		Year 5 (2000)		Year 1 (1996)		Year 2 (1997)		Year 3 (1998)		Year 4 (1999)		Year 5 (2000)	
DETAILS	Provided to / (by)	Current Volumes	Unit price 1995	Units '000's	Value IRE'000	Units '000's	Value IRE'000	Units '000's	Value IRE'000	Units '000's	Value IRE'000	Units '000's	Value IRE'000	Units '000's	Value IRE'000	Units '000's	Value IRE'000	Units '000's	Value IRE'000	Units '000's	Value IRE'000
<b>INCOME</b>																					
Weight recording	Breeder	1500	27.50	3.50	96	5.50	151	7.50	206	10.00	275	11.00	303								
Linear assessment	Breeder		10.00	1.05	11	1.65	17	2.25	23	3.00	30	3.30	33								
Scanning	Breeder		5.00	1.75	9	2.75	14	3.75	19	5.00	25	5.50	28								
<b>TOTAL INCOME</b>					116		182		248		330		363								
<b>COSTS</b>																					
Staff costs (weighing and scanning)			20.00	3.50	70	5.50	110	7.50	150	10.00	200	11.00	220								
Staff costs (linear assessment)			9.00	1.05	9	1.65	15	2.25	20	3.00	27	3.30	30								
Travelling costs			5.00	4.55	23	7.15	36	9.75	49	13.00	65	14.50	72								
Other variable costs			2.00	3.50	7	5.50	11	7.50	15	10.00	20	11.00	22								
<b>TOTAL COSTS</b>					109		172		234		312		343								
<b>CONTRIBUTION</b>					6		10		14		18		20								

**GENERAL ASSUMPTIONS**

**CURRENT ACTIVITY:** 10% of registered animals  
**TARGETS (1999):** Weight recorded – 50% of ped beef  
**OTHER ASSUMPTIONS:** Linear assessed – 30% of WR animals  
 Scanned = 50% of WR animals

**NOTE:** Weight recording will become largely a DIY undertaking in the future, with establishment of standards/supervision by ICBA

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Appendix B5.7

**SERVICE TRANSACTION DETAILS: CENTRAL PERFORMANCE TESTING**

DETAILS	SERVICE Provided to / (by)	Current Volumes	Unit price 1995 IRL	PROJECTED TRANSACTIONS																	
				Year 1 (1996)		Year 2 (1997)		Year 3 (1998)		Year 4 (1999)		Year 5 (2000)									
				Units	Value IRL'000	Units	Value IRL'000	Units	Value IRL'000	Units	Value IRL'000	Units	Value IRL'000								
<b>INCOME:</b>																					
Test fees	Breeders		500	100	50	150	75	200	100	220	110	220	110								
<b>TOTAL INCOME:</b>					50		75		100		110										110
<b>COSTS</b>																					
Variable costs (feed/vet/materials)		150-220	450	100	45	150	68	200	90	220	99	220	99								99
Wages and salaries					106		106		106		106		106								106
Establishment costs					10		10		10		10		10								10
<b>TOTAL COSTS</b>					161		184		206		215		215								215
<b>CONTRIBUTION</b>					-111		-109		-106		-105		-105								-105

GENERAL ASSUMPTIONS

TARGET (1999)	N/A
Staffing	1 X Yard Manager 3 X Yard staff 25% overtime for yard staff



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Appendix B5.B

**SERVICE TRANSACTION DETAILS CALCULATION/VALUATION OF GENETIC VALUES**

DETAILS	Provided to / (by)	Current Volumes	Unit price 1995 IRC	PROJECTED TRANSACTIONS									
				Year 1 (1996)		Year 2 (1997)		Year 3 (1998)		Year 4 (1999)		Year 5 (2000)	
				Units	Value IRC'000	Units	Value IRC'000	Units	Value IRC'000	Units	Value IRC'000	Units	Value IRC'000
<b>INCOME</b>													
Block service to AI (9 Cows indexes)	AI Oups Owners		10.00		45	14	45	15	45	16	45	17	45
<b>TOTAL INCOME</b>					45	185	195	205	215				
<b>COSTS</b>													
Specialist staff costs					60		60		60		60		60
Overheads (@20%)					12		12		12		12		12
<b>TOTAL COSTS</b>					72		72		72		72		72
<b>CONTRIBUTION</b>					-27		123		133		143		143

**GENERAL ASSUMPTIONS**

LARGE F (1999) H/a

ACTIVITIES: Calculation of proofs  
Quality assurance of original data  
QA of data processing  
Compliance with int'l standards  
Capture factory data  
(30 slaughter points, 1.5m head)  
2 X geneticists

SPECIALIST STAFF:

---

APPENDIX C

INFORMATION TECHNOLOGY COSTS

**PROJECTED INFORMATION TECHNOLOGY COSTS**

<b>Capital Costs</b>					
	<i>Units</i>	<i>Max Price per Unit</i>	<i>Min Price per Unit</i>	<i>Max Cost</i>	<i>Min Cost</i>
Transaction Server	1	£500,000	£250,000	£500,000	£250,000
Information Server	1	£350,000	£150,000	£350,000	£150,000
Data Warehouse Server	1	£250,000	£80,000	£250,000	£80,000
RDBMS Licence	3	£30,000	£18,000	£90,000	£54,000
TP software	20	£2,000	£1,000	£40,000	£20,000
CASE Tools	3	£15,000	£10,000	£45,000	£30,000
Statistics Tools	10	£2,000	£750	£20,000	£7,500
Reporting Tools	10	£500	£250	£5,000	£2,500
Local Area Network	1	£40,000	£24,000	£40,000	£24,000
Wide Area Network	1	£20,000	£10,000	£20,000	£10,000
Training	1	£25,000	£10,000	£25,000	£10,000
<b>Totals</b>				<b>£1,385,000</b>	<b>£638,000</b>
<b>Software Development/ Acquisition</b>					
IS Strategy	1	£80,000	£40,000	£80,000	£40,000
Transaction Processing System					
<i>Analysis</i>	1	£70,000	£40,000	£70,000	£40,000
<i>Design</i>	1	£11,000	£60,000	£11,000	£60,000
<i>Construction</i>	1	£150,000	£100,000	£150,000	£100,000
Information Processing System					
<i>Analysis</i>	1	£80,000	£50,000	£80,000	£50,000
<i>Design</i>	1	£90,000	£60,000	£90,000	£60,000
<i>Construction</i>	1	£125,000	£100,000	£125,000	£100,000
Data Warehouse System					
<i>Analysis</i>	1	£80,000	£70,000	£80,000	£70,000
<i>Design</i>	1	£80,000	£60,000	£80,000	£60,000
<i>Construction</i>	1	£120,000	£70,000	£120,000	£70,000
				<b>£886,000</b>	<b>£650,000</b>
Software Packages	1	£75,000	£30,000	£75,000	£30,000
<b>Complete Software Totals</b>				<b>£961,000</b>	<b>£680,000</b>
IS Infrastructure (Accomodation)	1	£100,000	£25,000	£100,000	£25,000
<b>Total Capital Costs</b>				<b>£2,446,000</b>	<b>£1,343,000</b>
<b>Operations Costs</b>					
	<i>Rate</i>	<i>Base Cost MAX</i>	<i>Base Cost Min</i>	<i>Max Maint</i>	<i>Min Maint</i>
Hardware Maintenance	12.50%	£1,360,000	£628,000	£170,000	£78,500
Software Maintenance	10%	£961,000	£680,000	£96,100	£68,000
Communications Charges	100%	£150,000	£80,000	£150,000	£80,000
Staff Costs	100%	£145,000	£110,500	£145,000	£110,500
<b>Operations Totals</b>				<b>£561,100</b>	<b>£337,000</b>
	<i>Years</i>	<i>Capital</i>	<i>Annual Ops</i>	<i>Total Ops</i>	<i>Total</i>
5 Year Cost of Ownership (MAX)	5	£2,446,000	£561,100	£2,805,500	£5,251,500
5 Year Cost of Ownership (MIN)	5	£1,343,000	£337,000	£1,685,000	£3,028,000