



# **Proposal for DAFF funding by way of Annual Cattle & Sheep Grant Assistance.**

*Irish Cattle Breeding Federation Society Limited (ICBF)*

*Sheep Database Limited (Sheep Ireland)*

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## 1 Summary

This is a proposal that DAFF continues to provide support in the form of Grant Aid to ICBF and Sheep Ireland. The case made is based on:

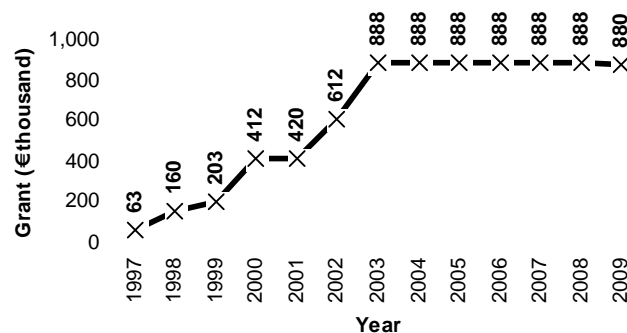
- **An excellent track record.** ICBF has established a world-class cattle breeding infrastructure in Ireland.
- **Realistic plans** to achieve a major improvement in the profitability of cattle and sheep farming in Ireland.
- **Delivery of benefits to the wider community** from the activities of ICBF and Sheep Ireland.
- **A net contribution to the state revenues.** For cattle ICBF is contributing a net €1.4 million per year.
- **Replacing DAFF activities with** savings to DAFF of €1.35 million per year.
- **Maintaining a very effective partnership** between DAFF and the agriculture industry.
- **Producing excellent returns on investment.**

## 2 Background

This a proposal for the continuation of state funding to the Irish sheep and cattle breeding sector in the form of an annual grant to the Irish Cattle Breeding Federation Society Ltd (ICBF) and Sheep Database Ltd (trading as Sheep Ireland). The proposal covers cattle breeding through ICBF and sheep breeding through Sheep Ireland. The management of both activities is the responsibility of the ICBF Executive. Policy decisions for ICBF are made by the ICBF Board and those for Sheep Ireland are made by the Board of Sheep Ireland.

The funds provided historically for cattle breeding by way of a grant to ICBF is summarised in figure 1. ICBF commenced operations in 1998 and as it took over an increasing number of functions previously carried out by DAFF the grant was increased up to €888,000 in 2003 and has remained at that level since then.

Figure 1. History of DAFF grant to ICBF.



Sheep Ireland commenced operations in the second half of

2008 with ICBF providing management and executive support under contract. The first year in which DAFF have provided support to Sheep Ireland by way of an annual grant is 2009. The Sheep Ireland grant for 2009 is €200,000.

This proposal is for the five year period commencing 1st January 2010 and ending 31st December 2014.

## 3 Achievements 2005 to 2009

This section contains a summary of the achievements in cattle and sheep breeding over the five year period ending in 2009.

### 3.1 ICBF

ICBF's achievements have been regularly reported in its Annual Report. The most recent report covers calendar year 2008 and, along with all previous Annual Reports, can be found

on the ICBF website ([www.icbf.com](http://www.icbf.com)). A copy of the 2008 Annual Report is included with this proposal.

ICBF's Annual Report for 2008 lists its achievements against ICBF's strategic plan as established in 2004 and updated annually. In summary<sup>1</sup> ICBF's achievements over the last five years include the following:

### 3.1.1 Genetic Evaluations

The genetic evaluation system now in place reflects the most appropriate breeding objective for maximizing profitability for dairy farming, the EBI (economic breeding index), and beef farming, the Euro-Star suckler beef value (SBV) index. These indexes are based on economic information from the Irish beef and dairy industries applied using the best available scientific principles to genetic information provided by ICBF's genetic evaluation system. The genetic evaluations provided by ICBF enable animals of all breeds (dairy and beef) to be fairly compared for a wide range of traits of economic importance in dairy and beef production.

The genetic evaluation system is being enhanced on an annual basis to accommodate new scientific knowledge, improvements in data availability as a result of other ICBF activities and improvements in computing and statistical technology.

The most recent major developments affecting genetic evaluations are:

- Incorporation of the large volume of data arising from the Suckler Cow Welfare Scheme (SCWS), and
- Incorporation of genomic information in the genetic evaluations for dairy animals.

ICBF's genetic evaluation system for dairy and beef cattle is world-class.

### 3.1.2 Uptake & Cost of Services

ICBF has been working closely with the cattle breeding industry in a range of initiatives to improve the uptake and reduce the cost of cattle breeding and information services to herd owners. These services from ICBF are provided on a full cost recovery basis in accordance with the policy adopted by ICBF in 2006. Achievements in the last five years include:

- Completion of the animal events roll-out and database implementation. The ICBF database is fully operational and has exceeded expectations in terms of its ability to support information services and to facilitate research of great strategic value to cattle breeding, to cattle farming and to the wider community.
- The development and rolling out of the EDIY (electronic do-it-yourself) milk recording system. This system eliminates cost through automation and use of computer technology. The uptake of milk recording has increased 25% as a consequence (from 400k to 500k cows per year) and in 2008 some 35% of milk recording was under the EDIY system.
- Support for animal recording element of the SCWS has been provided by ICBF from the inception of the scheme on 1<sup>st</sup> January 2008. The ICBF database has proven to be an ideal platform as its design needed little modification or extension to support the SCWS. As a consequence of the launch of the SCWS the overall level of participation in ICBF cattle breeding activities has moved to 90% of calves born in 2008.
- Development and roll-out of handheld computers for recording artificial inseminations conducted by technicians. This system was utilized to record 0.52 million inseminations in 2008. It makes use of the mobile phone network to link to technicians with the ICBF database and facilitates more rapid collection of data than the paper based systems it has replaced.

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<sup>1</sup> Please refer to ICBF Annual Report for 2008 for more detailed information.

- Launch of the HerdPlus® service for dairy and beef herds. This service which is focused on providing breeding information is currently being used by some 5,500 herds. One element of this service is the provision of an interactive sire advice facility which enables herd owners to select the most appropriate bulls for achieving their objectives. The inputs are the genetic evaluations of cows in the herd and all available bulls in AI. The outputs are integrated directly with breeding charts and downloaded onto the AI handhelds.
- An extension of the HerdPlus® service has been developed and rolled-out for farm advisors to access information from some 11,000 client herds. This service makes very effective use of the ICBF database to reduce the cost of advisors accessing detailed herd data. Discussion Group reports are part of this service. They provide comparative analyses of key performance indicators in the herds that comprise each discussion group.

### 3.1.3 Breeding Schemes

ICBF has commissioned research to establish the optimal breeding scheme design for the Irish beef and dairy breeds. This work was completed in 2006. It has since been extended to incorporate the impact of genomic selection with the results for dairy already available and those for beef expected before the end of 2010.

G~~EN~~IR~~EL~~AND® has been developed by ICBF, with support of NDP funding, as the vehicle for delivering an optimal breeding scheme design for Ireland. It includes procurement and progeny testing elements. First launched in spring 2005 for dairy progeny testing, and with the first results in late 2008, G~~EN~~IR~~EL~~AND® has been a major achievement. From spring 2009 the G~~EN~~IR~~EL~~AND® progeny test for dairy is financially self supporting. While there have been many challenges involved in establishing G~~EN~~IR~~EL~~AND® they have been overcome and Ireland is now benefitting from an indigenous dairy breeding program delivering the bulls that are ideal for Irish conditions. Considerable further work will be required to bring the breeding scheme for beef to the same level. However, given the progress with dairy, we are confident that this can be achieved without any increase in the level of state support.

### 3.1.4 Genomic Selection.

Cattle breeding is undergoing a major revolution as a consequence of developments in DNA technologies. ICBF and TEAGASC have lead the introduction of this technology to Ireland and in doing so demonstrated the strategic value of the ICBF database, as a research tool, and the relevance of the ICBF structure in leading the breeding industry. In spring 2009 some 35% of the artificial inseminations for breeding dairy replacements were to genomically selected bulls. This level of uptake of a new technology has not been achieved in any other country and of even greater importance, it has delivered a €2 EBI advantage of the genomically selected bulls over the daughter proven bulls.

### 3.1.5 Financial

ICBF's financial achievements over the last five years arise from a review conducted in 2006 as a consequence of unsustainable trends identified at that time. Fees for all services were reviewed on the basis of a contribution model which focused on ensuring each service was covering the full cost of its provision. The model was independently reviewed by Deloitte and has been the basis for financial planning since then.

ICBF has moved from a situation in which there were substantial losses, to breakeven. There has been a small surplus in each of the last two complete financial years (2007 and 2008).

The contribution from service income has grown from €0.65 million in 2005 to €1.41 million in 2008. This trend is a reflection of increased charges for some services (herd book and milk recording) and service growth for others (milk recording, AI handhelds, and HerdPlus®).

### 3.1.6 Resources

ICBF has created a team of some 30 people with the required office, computing and other facilities to enable it to support an expanding range of services and to develop and implement

innovative and novel solutions to a wide range of cattle (and more recently sheep) breeding challenges.

### 3.1.7 Communications

ICBF is involved in communicating on a wide range of subjects to a large national and international audience involved in all aspects of cattle breeding. These communications include:

- A weekly update – published on the ICBF website ([www.icbf.com](http://www.icbf.com)).
- Irish cattle breeding statistics – published on the ICBF website.
- Industry presentations – typically three to five presentations per week.
- Website – [www.icbf.com](http://www.icbf.com).
- Training of farmers and service providers.

### 3.1.8 International

ICBF maintains a number of important international linkages including:

- ICAR and Interbull.
- Leadership of the Interbeef Working Group to develop international evaluations for beef breeds & traits.
- International research forums including EAAP.
- International research collaborations including the FP6 funded Eureka and Ovultest projects.

## 3.2 Sheep Ireland

"Sheep Ireland" is the trading name of Sheep Database Ltd. In 2008 Sheep Ireland was formed after a period of extensive consultation with the sheep industry. The key events in the history of Sheep Ireland to date are summarized in Table 1.

*Table 1. Summary<sup>2</sup> of events in the history of Sheep Ireland.*

Date	Event
Jun 2006	Completion of the <a href="#">Sheep Industry Development Strategy</a> under the Chairmanship of John Malone. This group recommended that ICBF become involved in sheep breeding.
Feb 2007	The development of a <a href="#">proposal from ICBF</a> for sheep breeding and sheep information. This proposal identified the need for an industry based decision making structure and a database to meet the information needs of the sheep breeding sector and the wider industry. It proposed a way forward for sheep breeding in Ireland along similar lines to that achieved by ICBF for cattle breeding.
Apr 2007	The Sheep Strategy Implementation Group, also chaired by John Malone <a href="#">reported on progress</a> with implementation of the recommendations of the <a href="#">Sheep Industry Development Strategy</a> and the funding arrangement for involving ICBF in sheep breeding.
Jul 2008	First meeting of the Interim Sheep Board. The Interim Sheep Board was formed under the Chairmanship of Ignatius Byrne of DAFF, and included six other

<sup>2</sup> This summary can be found in the Sheep Ireland website ([www.sheep.ie](http://www.sheep.ie)) under the heading "background" with live links to the relevant publications and supporting documentation.

Date	Event
	members: Henry Burns (IFA), Kevin Kinsella (IFA), and James Brosnan (ICMSA) representing farmers and John Joyce, Ann Murphy and Larry Barrett representing breeders. Oliver Molloy (DAFF) was appointed as Secretary. Dr Brian Wickham, the Chief Executive of ICBF, reported to the Interim Sheep Board.
Sep 2008	A strategy project team lead by Dr Peter Amer, commissioned by the Interim Sheep Board, completed a review of sheep breeding in Ireland and <a href="#">filed its report</a> . The Interim Sheep Board adopted, with minor modification the <a href="#">twenty recommendations</a> contained in the Strategy Project Team report.
Oct 2008 to May 2009	The ICBF team with considerable help from Timothy Byrne of <a href="#">AbacusBio Ltd</a> proceeded to establish Sheep Ireland, form Sheep Database Ltd, and to establish <a href="#">LambPlus</a> as the performance recording service for sheep flocks. A unique lifetime identification system for participating flocks based on the official NSIS identification was <a href="#">agreed with DAFF</a> . <a href="#">Timelines</a> and <a href="#">performance recording protocols</a> were developed. Flocks using the PSBIP service provided by DAFF in 2008 were invited to join LambPlus for 2009. <a href="#">Flock Books were consulted on the features of LambPlus</a> and the Sheep Ireland database and invited to express an interest in future participation. Briefings were provided to the <a href="#">Interim Sheep Board</a> , a series of <a href="#">TEAGASC meetings</a> with sheep farmers and to the Flock Books.

Sheep Ireland is rapidly being established along the lines of ICBF. That is, it is focused on delivering genetic improvement in the Irish Sheep industry for the benefit of sheep farmers and the wider industry.

#### 4 Objectives for Period 2010 – 2014

ICBF and Sheep Ireland will conduct periodic reviews and incorporate the results in their respective strategic plans. Currently the objectives for the next five year period – 1<sup>st</sup> January 2010 to 31<sup>st</sup> December 2014 are as summarized in Table 2 for ICBF and Sheep Ireland.

Table 2. ICBF & Sheep Ireland objectives for period 2010 to 2014.

No	ICBF & Sheep Ireland Objectives – 2010 to 2014	
1	<b><u>Cattle Genetic evaluations</u> - ensure ready availability of accurate genetic evaluations for all traits, breeds and animals (national &amp; international) of significance to Irish farmers.</b>	
1.1	Beef & Dairy	<ul style="list-style-type: none"> <li>• Research &amp; implement enhanced evaluations for; <b>calving traits, calving interval &amp; survival traits</b> and <b>beef performance traits</b>.</li> <li>• Implement enhancements to genetic evaluations that enable full <b>use of new data</b> collected through cattle breeding initiatives.</li> <li>• Ensure the methods for dealing with <b>heterosis &amp; recombination</b> in genetic evaluations make full use of all available data and incorporate the latest research findings.</li> <li>• Research &amp; develop <b>carcass cut evaluations</b> based on images<sup>3</sup> and carcass cut data<sup>4</sup>.</li> </ul>

<sup>3</sup> ICBF maintains an archive of mechanical grading carcass images in collaboration with the meat industry.

<sup>4</sup> As with much of the research undertaken by ICBF this work is in close collaboration with TEAGASC.

No	ICBF & Sheep Ireland Objectives – 2010 to 2014	
1.2	Dairy	<ul style="list-style-type: none"> <li>Implement a <b>culling index</b> for dairy cattle.</li> <li>Implement <b>test day model</b> for milk production traits.</li> <li>Research &amp; implement systems for the incorporation of <b>genomic data</b> into the EBI for domestic &amp; foreign bulls.</li> <li>Research and implement evaluations for <b>farmer satisfaction</b>.</li> <li>Research &amp; implement improvements to <b>dairy linear type</b> evaluations.</li> <li>Consult with industry and <b>implement enhancements</b> to the EBI on an annual basis.</li> </ul>
1.3	Beef	<ul style="list-style-type: none"> <li>Through the <b>Interbeef project</b> obtain access to genetic evaluations for foreign animals of particular relevance to Irish cattle farmers.</li> <li>Research &amp; implement enhanced across breed <b>evaluations for Beef Linear Type Traits</b> that use foreign evaluations and docility data from SCWS.</li> <li>Support and participate in research by TEAGASC and UCD into ways to improve feed conversion efficiency.</li> <li>Consult with industry and <b>implement enhancements</b> to Euro-Star indexes on an annual basis.</li> </ul>
1.4	Knowledge & information	<ul style="list-style-type: none"> <li>Review and update the <b>genetic evaluation information</b> available through the <b>ICBF website</b>.</li> <li>Provide <b>training and support</b> to field personal on genetic evaluations and breeding schemes.</li> <li>Hold <b>EBI competitions for discussion groups</b> and provide full publicity to enhance farmer understanding of the EBI and the benefits for farm profitability.</li> <li>Develop a <b>competition that enhances farmer understanding of the beef Euro-Star indexes</b> and the benefits for farm profitability.</li> </ul>
1.5	Service quality	<ul style="list-style-type: none"> <li>Publish <b>annual timetable</b>, in advance, for genetic evaluations and monitor performance against this timetable.</li> <li>Achieve substantial reductions in turn-around time for genetic evaluations.</li> </ul>
1.6	Suckler Scheme	<ul style="list-style-type: none"> <li>Establish and implement a strategy for ensuring participants in the scheme receive sufficient benefits to ensure they <b>become regular users of HerdPlus®</b>.</li> <li>Ensure <b>DAFF requirements</b> are fully met.</li> </ul>
2	<b>Uptake &amp; cost of services - increase participation (from 2009 levels) and substantially reduce unit cost of cattle breeding services to farmers.</b>	
2.1	Milk Rec. Services	<ul style="list-style-type: none"> <li>Complete implementation of <b>review of milk recording services</b> provided by ICBF with the objective of improving service quality.</li> <li>Move milk recording data recording and information support to a <b>web based</b> platform.</li> </ul>
2.2	AI Services	<ul style="list-style-type: none"> <li>Support and enhance <b>AI handhelds service</b> provided to AI industry in Ireland.</li> <li>Research and implement <b>lower cost options for handhelds</b> for technicians servicing smaller numbers of herds and cows.</li> <li>Implement <b>revised software</b> and <b>updated systems</b> that deliver significant benefits to Irish farmers and the Irish AI industry.</li> <li>Implement revised and enhanced <b>web-based information services</b> for AI companies (active bulls, AI codes, GENEIRLAND®).</li> </ul>
2.3	HB Services	<ul style="list-style-type: none"> <li>Support and enhance <b>web based herd book (Taurus)</b> processing service.</li> <li>Ensure <b>services to herd books</b> are of high quality.</li> <li>Integrate <b>breed improvement programs</b> for herd books in the GENEIRLAND® service.</li> </ul>

No	ICBF & Sheep Ireland Objectives – 2010 to 2014	
2.4	<b>HerdPlus®</b>	<ul style="list-style-type: none"> <li>• <b>Expand usage</b> of HerdPlus® service to dairy &amp; beef herds.</li> <li>• <b>Enhance service</b> features to ensure customers are highly satisfied and the service is attractive to new customers.</li> <li>• <b>Maintain high quality GROW® service</b> to beef herds and expand into commercial suckler herds.</li> </ul>
2.5	<b>Advisor services</b>	<ul style="list-style-type: none"> <li>• Review marketing of <b>HerdPlus® services to advisors</b> and implement findings.</li> <li>• Enhance information <b>services to Discussion Groups</b>.</li> </ul>
2.6	<b>Health services</b>	<ul style="list-style-type: none"> <li>• <b>Support initiatives</b> to establish whole herd health scheme(s) in Ireland.</li> <li>• <b>Support Teagasc research</b> initiatives for dairy and beef herd health.</li> <li>• <b>Lead in development and provision</b> of herd health services for beef and dairy breeders.</li> <li>• <b>Implement</b> herd health service for breeders supplying bulls to Tully.</li> </ul>
2.7	<b>Best practice</b>	<ul style="list-style-type: none"> <li>• Implement a <b>promotion campaign</b> to ensure farmers follow <b>best practice</b> is all aspects of <b>cattle breeding</b>.</li> </ul>
3	<b><u>Breeding Schemes</u> - ensure cattle breeding industry delivers optimal economic returns from genetic improvement for Irish cattle farmers.</b>	
3.1	<b>Procurement Service</b>	<ul style="list-style-type: none"> <li>• Establish <b>G-EN-IR-ELAND®</b> procurement as the central element to the operation of optimal breeding schemes for dairy and beef breeds in Ireland.</li> <li>• <b>Expand G-EN-IR-ELAND® web based procurement</b> service to meet needs of AI Companies and Breed Associations that actively participate in breed improvement programs.</li> </ul>
3.2	<b>Progeny Test</b>	<ul style="list-style-type: none"> <li>• Annually review <b>G-EN-IR-ELAND® progeny test</b> and <b>implement findings</b>.</li> <li>• <b>Efficiently Operate G-EN-IR-ELAND®</b> beef and dairy progeny test schemes from recruitment of herds to completion of progeny test.</li> </ul>
3.3	<b>Tully</b>	<ul style="list-style-type: none"> <li>• Ensure <b>best practice</b> is followed to minimize risk of bulls failing health criteria for entry to AI.</li> <li>• Ensure <b>bulls tested at Tully</b> are only those that are actively involved in <b>G-EN-IR-ELAND® procurement</b> for a breed improvement program of an AI company and Breed Association.</li> </ul>
3.5	<b>Genomic Selection</b>	<ul style="list-style-type: none"> <li>• Provide <b>active leadership</b> to the cattle industry in the harnessing of DNA technologies for the benefit of farmers and the breeding industry.</li> <li>• Establish a <b>DNA bank</b> for use in future dairy and beef cattle breeding research.</li> <li>• Secure a facility for <b>DNA storage, extraction and genotyping</b> on a long term basis to underpin both research and the provision of DNA based services.</li> <li>• Extend the <b>ICBF database</b> to support research into genomic selection and the provision of DNA technology based information services to the breeding industry.</li> <li>• Review the <b>optimal breeding scheme</b> for beef and dairy utilizing the latest DNA technologies and implement adjustments to operational <b>G-EN-IR-ELAND®</b> procurement and progeny testing service.</li> </ul>
4	<b><u>Service development and other services</u> - develop and market a range of information services that make effective use of the cattle breeding database, compliment the services provided by members and spread the overhead cost of maintaining and operating the ICBF database and genetic evaluation systems.</b>	

No	ICBF & Sheep Ireland Objectives – 2010 to 2014	
4.1	Cattle trading	<ul style="list-style-type: none"> <li>Develop information <b>service for cattle sales</b> in association with service providing members.</li> </ul>
4.2	Research & technical	<ul style="list-style-type: none"> <li>Support <b>genetic conservation</b> programs.</li> <li>Provide data &amp; technical <b>support for research</b> conducted by research organisations including Teagasc and Universities.</li> <li>Contribute expertise and support to <b>EU funded FP6 and FP7 projects</b>.</li> <li>Establish <b>mechanism for industry good and national good benefits</b> of ICBF to be funded in longer term.</li> </ul>
4.3	KPIs'	<ul style="list-style-type: none"> <li>Develop <b>information service for provision of performance indicators</b>.</li> <li>Establish the market and a commercial KPI service model with the objective of <b>increasing number of dairy and beef herds fully participating</b> in cattle breeding services</li> </ul>
4.4	Information	<ul style="list-style-type: none"> <li><b>Review website</b> design to facilitate access to improved and more extensive information.</li> <li>Provide <b>relevant and timely information</b> to key sectors in sheep and cattle breeding.</li> </ul>
5	<b>Sheep - achieve the greatest possible improvement, from genetic and other factors, in the profitability of the national sheep flock for the benefit of Irish farmers and the sheep industry.</b>	
5.1	Sheep Services	Implement the 20 recommendations from the Strategy Team as adopted by the Interim Sheep Board in November 2008.

## 5 Justification for DAFF Support

### 5.1 Net Revenue to State

An analysis of the contributions that ICBF's activities make to State Revenues has been conducted. The results are contained in Table 3. These show that ICBF's activities are generating a net surplus to Revenue of some €1.4 million.

*Table 3 Movements in intervening 5 years - Annual exchequer receipts directly relating to ICBF activities.*

Item	2004	2008	Change
P35 - 2004 v P35 2008 (Note 1)	€200,000	€333,000	€133,000
Vat on services (cattle breeding services @ 13.5%) (Note 2)	€31,000	€190,350	€109,350
Vat on 'new service' EDIY at service provider level (Note 3)	€0	€43,200	€43,200
Vat on increased AI services (Note 4)		€202,500	€202,500
Genetic gain - Income tax @ 22%, PRSI @ 5% (Note 5)	€1,188,000	€2,970,000	€1,782,000
<b>Total</b>	<b>€1,469,000</b>	<b>€3,739,050</b>	<b>€2,270,050</b>
<b>Grant Income Per Year</b>			<b>€88,000</b>
<b>Net gain to Exchequer</b>			<b>€1,382,050</b>
<b>Annual return on grant</b>			<b>156%</b>

<b>Note 1:</b> Increased employment at ICBF has increased the employment taxes paid.
<b>Note 2:</b> ICBF's service income has increased from €600k in 2004 to €1,400k in 2008. Cattle breeding services are charged with 13.5% VAT.
<b>Note 3:</b> Electronic 'Do-It-Yourself' (EDIY) Milk recording service pioneered by ICBF has increased milk recording by 40,000 cows. This service operated by Milk Recording Coops costs least €8/cow and VAT is at 13.5%.
<b>Note 4:</b> An outcome of the research and education that ICBF has done on Dairy Genetic Evaluations has been an increased uptake of Artificial Insemination (AI) at farm level. DIY sales have risen by 100,000 straws. Average straw @ €15, and 13.5% VAT.
<b>Note 5:</b> Genetic gain is traditionally measured by achieving more output for the same cost (e.g. more milk, same cost) by using genetically superior animals. Since 2004, the work done by ICBF has helped increase the rate of genetic gain on dairy cows (in actual terms) by € (from €4 to €10). There are 1.1 million cows in the country. This genetic gain will be reflected as €6.6m extra profit per year at farm level. Though many farmers pay tax at the higher rate, for this exercise, we assume that this extra profit is taxed at 22% income tax, and 5% PRSI. Genetic gain is cumulative (you typically don't lose the gains of the previous generation) and thus will give additional revenue in future years over and above the annual gains estimated here.

## 5.2 Benefits to the Community

ICBF provides benefits to organisations and individuals that do not receive chargeable services from ICBF. These are summarised Table 4. State funding is an efficient mechanism for the costs of delivering these benefits to be shared with beneficiaries.

Table 4. Groups benefiting and benefits provided by ICBF & Sheep Ireland.

<i>Group Benefiting</i>	<i>ICBF/Sheep Ireland Activities that Create Benefits</i>	<i>Benefits</i>
Current farmers who do not participate in fee-paying services. This currently covers some 75% of all cattle herds and 95% of all sheep flocks. Cattle herds do provide some funding to ICBF through tag contributions.	<ul style="list-style-type: none"> <li>▪ Genetic evaluations.</li> <li>▪ Research and provision of data to facilitate research.</li> <li>▪ Communications that identify opportunities for improving farm profitability.</li> <li>▪ Delivery of optimal breeding schemes.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Better informed breeding decisions.</li> <li>▪ Innovation giving rise to improved farm and industry profitability.</li> <li>▪ Improved knowledge of factors affecting farm profitability.</li> <li>▪ More rapid genetic progress for profitability traits.</li> </ul>
Future cattle & sheep farmers.	<ul style="list-style-type: none"> <li>▪ Cattle &amp; sheep breeding databases of animal data and information.</li> <li>▪ Research and provision of data to facilitate research.</li> <li>▪ Delivery of optimal breeding schemes.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Access to useful information on the ancestors of future animals.</li> <li>▪ Knowledge gained from past experience.</li> <li>▪ Business opportunities and improved competitiveness.</li> <li>▪ Population of more profitable animals.</li> </ul>
The wider cattle & sheep breeding industry, including AI companies, Breed Assns and Flock Books that do not utilise ICBF services.	<ul style="list-style-type: none"> <li>▪ Genetic evaluations.</li> <li>▪ Research and provision of data to facilitate research.</li> <li>▪ Delivery of optimal breeding schemes.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Access to information that enables elite animals to be identified.</li> <li>▪ New knowledge arising from research findings.</li> <li>▪ Participation in a breeding industry that is achieving optimal rates of genetic gain.</li> </ul>
The processors and marketers of dairy, beef, and sheep products.	<ul style="list-style-type: none"> <li>▪ Breeding objectives &amp; genetic evaluations.</li> <li>▪ Research and provision of data to facilitate research.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Farm production that produces the animal products most valued by processors &amp; marketers.</li> <li>▪ New knowledge arising from</li> </ul>

<i>Group Benefiting</i>	<i>ICBF/Sheep Ireland Activities that Create Benefits</i>	<i>Benefits</i>
	<ul style="list-style-type: none"> <li>▪ Communications that identify opportunities for improving farm profitability.</li> <li>▪ Delivery of optimal breeding schemes.</li> </ul>	<ul style="list-style-type: none"> <li>▪ research findings.</li> <li>▪ New product opportunities arising from exploitation of genetic variation in farm animals.</li> </ul>
The suppliers of inputs to dairy, beef, and sheep farming.	<ul style="list-style-type: none"> <li>▪ Research and provision of data to facilitate research.</li> <li>▪ Communications that identify opportunities for improving farm profitability.</li> </ul>	<ul style="list-style-type: none"> <li>▪ New knowledge arising from research findings.</li> <li>▪ Identification of products and services that add to farm profitability.</li> <li>▪ Farmers who understand the benefits of products and services.</li> <li>▪ Database which can be used to facilitate animal health services.</li> </ul>
Consumers of dairy, beef, and sheep products.	<ul style="list-style-type: none"> <li>▪ Breeding objectives &amp; genetic evaluations.</li> <li>▪ Research and provision of data to facilitate research.</li> <li>▪ Delivery of optimal breeding schemes.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Efficient production of dairy, beef, and sheep products and thus access to products that minimise use of resources.</li> <li>▪ New knowledge arising from research findings.</li> </ul>
The wider business community.	<ul style="list-style-type: none"> <li>▪ Research and provision of data to facilitate research.</li> </ul>	<ul style="list-style-type: none"> <li>▪ New knowledge arising from research findings.</li> <li>▪ Evaluation of potential value of new technologies in dairy, beef, and sheep breeding and farming.</li> </ul>
Society in general.	<ul style="list-style-type: none"> <li>▪ Research and provision of data to facilitate research.</li> </ul>	<ul style="list-style-type: none"> <li>▪ New knowledge and understanding arising from research.</li> </ul>

### 5.3 Saving State Costs

ICBF undertakes activities that were previously the responsibility of DAFF. The cost savings are detailed in section 6 and amount to €1.35 million per year.

## 6 Savings to DAFF

The estimated savings to DAFF from the transfer of functions to ICBF and Sheep Ireland is itemized in Table 5. The total savings is some €1.35 million.

Table 5. Savings to DAFF from transfer of functions to ICBF.

<b>Item</b>	<b>DAFF Savings (€ indexed to 2008)</b>
Genetic evaluations (cattle)	€303,742
AI approvals	€33,013
Quality assurance	€156,813
Tully Bull Performance Test Centre	€633,624
Sheep	€222,204
<b>Total</b>	<b>€1,349,396</b>

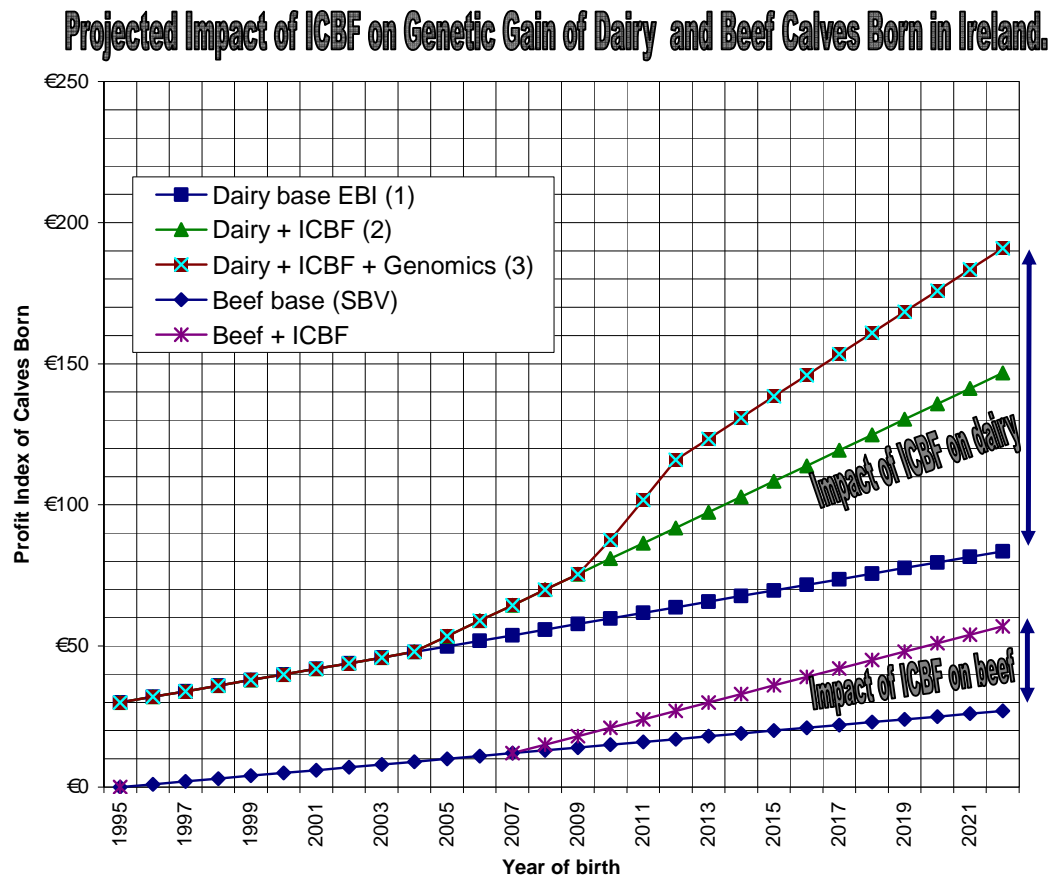
## 7 Sector Returns from DAFF Funding

### 7.1 Cattle

DAFF funding has ensured the viability of the ICBF. While it is difficult to separate the contribution made by each component it is clear that:

- ICBF has established a world class cattle breeding infrastructure that has enabled genetic improvement to be monitored.
- The rate of genetic improvement of the national cattle herd is moving from an extended period of very slow gains to more rapid gains as a result of ICBF's activities as shown by Figure 2.

Figure 2. Genetic trends in Irish dairy & beef cattle.



Each unit of EBI in the dairy heifer calves born is worth € per lactation. On the basis of 275,000 dairy replacements and four lactations (1.1 million milking cows) this gives a return, in the first generation, of €2.2 million per EBI unit. There will be further returns in later generations of females and from bull calves. For the purpose of this exercise, and to keep the explanation simple, these later generation gains, although considerable, are disregarded. Similarly, a €1 unit of SBV (Suckler Beef Value) is worth €2.2 million in the first generation in the suckler beef herd.

The rate of gain in the dairy herd has increased from two EBI units per year (in the period 1995 to 2001) to 5.5 EBI units per year (2 in figure 2). The impact of the recent introduction of genomic selection is firstly to bring about a step increase in gain and secondly to increase the rate of gain to some 7.5 EBI units per year (3 in figure 2).

Current information indicates the rate of gain per year in the suckler beef herd has increased from 1 unit of SBV per year to 3 units of SBV per year.

It must be noted that even these rates of gain are considerably below the theoretical optimum of some 23 EBI units per year for dairy and 18 SBV units per year for beef.

The cost and benefits of ICBF activities are conservatively estimated in Table 6. In this table the total costs of operating ICBF are considered. Only first generation benefits are considered. All benefits are expressed in terms of the contribution of genetic improvement to farm profitability. These gains are the result of more efficient animals being selected as a result of the genetic evaluation systems and breeding programs implemented by ICBF. Because there is a lag in genetic improvement there is a period of three years before the impact of ICBF's activities are expressed on the productivity of the resulting offspring. However, the gains are cumulative and over time are very large.

Table 6. *Benefits and cost of ICBF.*

<b>Year</b>	<b>Total Annual Cost of Operating ICBF (million)</b>	<b>Projected Dairy Benefits (million)</b>	<b>Projected Beef Benefits (million)</b>	<b>Benefit minus Cost (million)</b>
1997	€0.1	€0	€0	€0
1998	€0.2	€0	€0	€0
1999	€0.2	€0	€0	€0
2000	€0.3	€0	€0	€0
2001	€0.7	€0	€0	-€1
2002	€1.3	€0	€0	-€1
2003	€2.6	€0	€0	-€3
2004	€3.2	€0	€0	-€3
2005	€3.3	€3	€0	€5
2006	€3.1	€16	€0	€13
2007	€4.9	€23	€0	€19
2008	€5.9	€31	€4	€29
2009	€4.7	€39	€8	€42
2010	€5.0 <sup>5</sup>	€61	€12	€68
2011	€5.0	€88	€16	€99
2012	€5.0	€115	€20	€130
2013	€5.0	€127	€24	€146
2014	€5.0	€139	€28	€162
2015	€5.0	€151	€32	€178
2016	€5.0	€163	€36	€194
2017	€5.0	€175	€40	€210
2018	€5.0	€188	€44	€227
2019	€5.0	€200	€48	€243
2020	€5.0	€212	€52	€259
2021	€5.0	€224	€56	€275
2022	€5.0	€236	€60	€291

## 7.2 Sheep

A cost benefit study conducted for Sheep Ireland by independent consultants<sup>6</sup> has shown a benefit to cost ratio ranging from three to one at a 50% uptake and six to one if high levels of uptake are achieved.

<sup>5</sup> Projected for 2010 onwards assuming current levels of activity.

## 8 Consequences of Reduced Funding

In the event of funding being reduced to below current levels the consequences are likely to be serious as outlined separately here for cattle and sheep.

### 8.1 Cattle

- ICBF has been operating for a number of years on the basis of a partnership between farmers, the breeding industry and DAFF. The farmers make contributions through tag payments, the breeding industry pays for services and DAFF contributes by way of grant and NDP capital funding. This model has worked well in bringing Ireland to a position of world leadership in cattle breeding. A substantial reduction in funding by DAFF would destabilize this model.
- ICBF would be forced to reduce its expenditure to match any reduction in funding from DAFF. One avenue would be to focus on income generating services and to reduce the resources allocated to delivery of the “public good” activities. Some cost reduction could be achieved by this approach although it would result in associated reduction in benefits for the non-service paying beneficiaries of ICBF activities. However, a detailed consideration of the options has not yet been undertaken.

### 8.2 Sheep

- The activities of Sheep Ireland have only just commenced. It would be extremely detrimental to the reputation of DAFF if funding was to be reduced at this early stage of a development that is gathering considerable industry support and enthusiasm.
- A substantial reduction in funding could only be handled by halting development.

## 9 Plans for Increasing Industry Funding

The approach being taken for both ICBF and Sheep Ireland is to introduce and expand user pays services as rapidly as possible.

### 9.1 Cattle

User pays service plans for cattle include (as indicated in the objectives for the next five year period):

- HerdPlus<sup>®</sup> was launched in 2006 and has grown to 5,500 herds. Our plan is to increase this number to some 75% (20,000 herds) of the long term viable dairy and beef herds by 2014.
- A sales support information service is currently under development. This is expected to result in some extra service based revenue being generated.
- A service to support genomic selection is planned. Once established this will be provided on a user pays basis.
- We have no immediate plans to alter the fees charged for milk recording, herd book or AI services. These are all carrying a fair share of overheads and will be reviewed if the cost of providing these services alters significantly.
- Over the next five years income from services is expected to continue to grow by some €250,000 per year. However, a large part of this income will be required to cover service provision costs.

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<sup>6</sup> Byrne & Amer. Report to Interim Sheep Board 23rd October 2008. A copy can be found here: [http://www.sheep.ie/publications/files/Cost\\_Benefit\\_Analysis\\_231008.pdf](http://www.sheep.ie/publications/files/Cost_Benefit_Analysis_231008.pdf)

## 9.2 Sheep

Sheep Ireland is currently finalizing its LambPlus service which will be provided on a user-pays basis. This will result in growing service income for Sheep Ireland as uptake grows.

## 10 Concluding Remarks

ICBF commenced operations in 1998 with a clear vision to establish a world-class breeding program for the Irish cattle industry. This has been delivered in its entirety by ICBF with the support of the DAFF grant. A continuation of the grant is justified on the grounds that:

- It will facilitate ICBF and Sheep Ireland in delivering on realistic (for ICBF) objectives to improve the profitability of cattle and sheep farming in Ireland.
- It will generate more revenue for the State than it will cost.
- It will ensure the delivery of a wide range of benefits to the broader community including future farmers.
- It will ensure continued provision of enhanced services to those traditionally provided by DAFF.
- It will ensure the continuation of a partnership with the farming industry that has been particularly innovative and is providing excellent returns for all sectors of the industry.



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19<sup>th</sup> June 2009

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### Registered Offices:

Irish Cattle Breeding Federation Society Ltd, Highfield House, Shinagh, Bandon, Co Cork. Registered Dublin, Ireland. Registration Number 4914R, Industrial and Provident Societies Acts, 1893 to 1978.

Sheep Database Ltd trading as "Sheep Ireland", Highfield House, Shinagh, Bandon, Co Cork. Registered Dublin, Ireland. Registration Number 465004, Companies Acts 1963 to 2006.

Reference: \\lcbf-server1a\data\Shared\Company\FINR\DAFRD Funding Requests\Grant 2010 to 2014\ICBF Grant Proposal 2010 to 2014 June 2009 ver 1.2.doc