

INTERBULL Centre

P.O. Box 7023
SE-750 07 Uppsala, Sweden

Telephone: +46-18-671000
Facsimile: +46-18-672648



INTERBULL is a sub-committee of the
International Committee for Animal Recording
(ICAR)
General Secretariat, ICAR
Via Tomassetti 3-1A, I-00161 Rome, Italy

Interbull Centre Activity Report 2005/2006¹

INTRODUCTION

The milestone of ten years of Interbull evaluations was commemorated last year at the Interbull meetings in Uppsala. While a noteworthy milestone to celebrate, it is important to move on and maintain focus on the future of Interbull and Interbull evaluations. This year much attention was paid to meet the demand to improve quality of Interbull evaluations and meeting the demands of the global dairy cattle community to get tools for genetic improvement of female fertility. Measures have been taken at the Interbull Centre for more thorough monitoring of the genetic evaluation procedure and verification of results prior to release, and the topic of data quality was extensively discussed at the workshop in The Netherlands. Also discussed during the workshop in Wageningen was the research on female fertility, resulting in the start of international genetic evaluation service for this trait complex with a test evaluation in September 2006. Meeting the demands of customers is crucial for a service providing organisation like Interbull. However, it is important to realize that the extent to which customer demands can be met depends on the amount of resources that are available.

This document describes the activities at the Interbull Centre since the last annual meeting of Interbull (June 2-4, 2005, Uppsala, Sweden). Workplans and future activities are also presented.

BUDGETS AND FINANCES

A complete financial report can be found in Appendix I+II. Budgets will be official pending approval by the Interbull Steering Committee on June 3, 2006. The result for year 2005 was positive and better than the budget. For 2006 (revised according to the actual situation) the budget shows a deficit, mainly due to the planned use of reservations from 2005 for creation of a sabbatical / post-doc position. The budgets for 2007 and 2008 indicate some deficits which for 2007 will be balanced with accumulated reserves.

The service fees for 2006 – 2008 were computed according to the current fee structure. The level of service fees has not changed since 1999 and no change in service fee is proposed for 2007. Full Interbull service fees for the female fertility evaluations are in effect as of 2006, and amount to 20% of the service fees for production traits. The EU commission has continued their support of the Interbull Centre. For 2005 the contribution was to €65,000, and a similar amount has been decided for 2006.

Interbull membership fees are handled directly by the ICAR office, Rome, Italy, and reported at the official meetings of ICAR. For 2005 the membership income of Interbull amounted to €44,476, and the amount of €48,953 is anticipated for 2006. Membership income is used to cover overhead costs for ICAR/Interbull, some travel expenses, publications and information. The Interbull Centre also contributes €6,930 from service fees to cover these costs.

¹ Presented at the 2006 Interbull Meeting, Kuopio, Finland, June 4-6, 2005

PERSONNEL

Flavio Forabosco started at the Interbull Centre in November 2005. He was previously employed by the National Association of Italian Cattle Breeders where the genetic evaluations of five Italian beef breeds were his main responsibilities. At the same time he successfully pursued a PhD degree from Wageningen University in The Netherlands resulting in a thesis entitled "Breeding for longevity in Italian Chianina cattle". Flavio replaces Thomas Mark, who started as assistant professor at the Royal Veterinarian and Agricultural University of Copenhagen, Denmark after defending his thesis "International genetic evaluations for udder health traits in dairy cattle" on 30th of September in Sweden.

For 2006 both Hossein Jorjani and Freddy Fikse work on a part-time (75%) basis at the Interbull Centre. The funds freed will be used for a six-month post-doc appointment of **Maria del Pilar Schneider**, who will work on estimation of genetic correlations using factor analytical approaches.

The complete permanent staff of the Interbull Centre consists of 5.1 scientists, 0.5 programmers and 0.4 secretaries.

Med. Houcine Othmane from Institut National de la Recherche Agronomique de Tunisie has spent six months (August 2005 until January 2006) at the Centre as visiting scientist. The topic of his studies was to develop a genetic evaluation model for milk production traits for Tunisian Holsteins.

SERVICE AND OPERATION

Routine international genetic evaluations for production traits were computed as scheduled in August and November 2005, and in February and May 2006. Test evaluation runs were performed in September 2005 and March 2006. Denmark, Finland and Sweden participated with Ayrshire, Holstein and Jersey data from a joint evaluation in the May 2006 routine evaluation. Many changes in national evaluations have also been introduced during this period, and are all described in the service reports published on www.interbull.org after each routine evaluation.

International genetic evaluations for Ayrshire, Guernsey, Brown Swiss, Holstein and Jersey conformation traits were computed according to the same schedule as for production traits. First time participant in the Holstein conformation evaluation was Estonia. An increasing number of countries submit data for the most recently added trait rear-teat placement, but several countries are still lacking this trait.

Udder health evaluations for Ayrshire, Brown Swiss, Guernsey, Holstein, Jersey and Simmental were also computed according to the same schedule. New countries/populations in these evaluations were Ireland in the Holstein, Czech Republic in the Holstein and Simmental evaluations, and Germany (incl. Austria) and Hungary in the Simmental evaluation.

Longevity evaluations for Ayrshire, Brown Swiss, Guernsey, Holstein, Jersey and Simmental were computed according to the same schedule as for production traits. Hungary participated with Holstein longevity data for the first time in the test evaluation of March 2006.

Calving trait evaluations for Holstein were computed according to the same schedule as for production traits. The traits considered are direct and maternal genetic effects of calving performance and stillbirth. In February 2006, the first routine evaluation for Ayrshire was conducted, including data from Canada, Denmark, Finland, Norway and Sweden. The traits considered were direct and maternal genetic effects for calving performance but not yet stillbirth. Test evaluations for the Brown Swiss breed group have been completed as well, including data from Germany (incl. Austria), The Netherlands, Switzerland and USA.

The total numbers of populations in the most recent (May 2006) routine Interbull genetic evaluation services were as follows:

Breed	Production	Confor- mation	Udder health	Longevity	Calving
Ayrshire	10	8	12	8	5
Brown Swiss	9	7	7	6	-
Guernsey	6	4	5	4	-
Holstein	24	20	25	18	12
Jersey	10	9	8	6	-
Simmental	10	-	8	2	-
Total	69	48	65	44	17

Modifications in international evaluation procedures

In the test evaluation run of March 2006 changes in file formats for udder health, longevity and calving traits were introduced to include a field that refers to the direction of the scale indicating whether high breeding values are desirable or undesirable. At the same time the format for calving traits was modified to allow for specification of type of genetic merit for all traits individually.

Pedigree issues

Handling of pedigrees was modified to deal with cross-references due to inconsistent breed code definition. For a number of countries, the country code plus the 12 digits of the international ID is unique across breeds, but frequently different countries supply the same ID (country code + 12 digits) with different breed codes (e.g. RED and HOL). In the modified procedure for pedigree handling, a breed code is chosen for relevant IDs (country code + 12 digits), and these breed codes are propagated throughout the whole pedigree file. For the choice of breed code, priority is given to information from the country of first registration.

Information activities

The web site of Interbull has been updated at several places. Two Interbull Bulletins, proceedings from the Interbull Open Meeting in Uppsala and the Interbull Technical Workshop in Wageningen, have been added. Interbull printed one issue of the newsletter, Interbulletin, since last year's Interbull Meeting, and this newsletter is also available on the web site of Interbull.

Workshop

An international technical workshop was held in March 2006 in Wageningen, The Netherlands. The workshop focused on two topics: data quality and female fertility. Discussions about female fertility were targeted towards the launch of an international genetic evaluation service for this trait group. Discussions on data quality were to a great extent related to national checks on data sent to Interbull, and Interbull checks on national data. Most of the presentations are published in Interbull Bulletin 34, and minutes from the workshop will be made available on the Interbull Business discussion forum.

RESEARCH AND DEVELOPMENT

A document listing research topics in the field of international genetic evaluation, with priorities as identified by the Interbull Centre and Interbull Steering Committee, is available on the web site of Interbull under "Publications and Documentation | General information". One of the purposes of the document is to list ongoing research projects, but the document can only stay updated if all members provide information about ongoing research. The following is a brief summary of research activities conducted at the Interbull Centre or with the involvement of the Interbull Centre staff since June 2005.

Validation

Estimated sire variances have a large influence on international genetic evaluations. The presence of any trends in genetic variances therefore make international evaluation sensitive to time period of data used for estimation of sire variances. The ITC asked a working group consisting of Freddy Fikse, Zengting Liu and Pete Sullivan to devise a procedure to validate trends in genetic variances. The working group outlined a procedure that can be used to estimate the genetic variance for a cohort (e.g., animals born in year t). Additionally a procedure to obtain tolerance intervals for within-year estimates of genetic variances has been outlined. A complete description of the procedure has been finalized and a software package has been prepared for use by genetic evaluation units.

Multiple-trait multiple-country genetic evaluations

Current, single-trait (ST) MACE assumes residual correlations to be zero and ST-MACE allows only one trait per country. The purpose of this study is two-fold: 1) Allow for lactation specific breeding values for some countries; 2) improve evaluations by utilizing within-country correlated information. A report was presented at the Interbull Open Meeting in Uppsala and at the ADSA meeting in Cincinnati. This report showed the feasibility of applying multiple-trait (MT) MACE to milk somatic cell and clinical mastitis data from 8 countries and confirmed the second purpose stated above, although differences were small for this specific example. A reliability approximation procedure for MT-MACE and an iterative procedure to generate effective independent weighting factors have been carefully examined and were found to work satisfactorily. Thomas Mark and Pete Sullivan were principle investigators in the initial parts of this project. Ongoing work aims at applying MT-MACE to female fertility and production traits and investigating large scale MT-MACE implementations. Hossein Jorjani is principle investigator for these parts.

International genetic evaluations for female fertility

Fertility traits are among the most economically important traits in dairy cattle, partly because of costs due to unnecessary multiple inseminations and fertility treatments, and partly because of prolonged lactations and reduced milk production which may eventually lead to involuntary culling. Despite its importance there has not been any international genetic evaluation for it, mainly because of the complex nature of the trait, i.e. lack of a single measure that can describe the entirety of the fertility complex in heifers and cows, and for interval and insemination records. However, during the past years the research results on multiple-trait MACE (MT-MACE) promised new opportunities for dealing with fertility traits. The aim of this project was to prepare the stage for an international genetic evaluation of fertility traits at the Interbull level. Results of the pilot study presented at Interbull Open Meeting 2005 (Uppsala) and Interbull Technical workshop 2006 (Wageningen) showed that large scale use of MT-MACE for fertility traits is in need of further research, mainly because of problems encountered at the post-processing stage (i.e. combining disparately estimated sets of correlations and bending of the resulting correlation matrix). However, ST-MACE results were very promising. Consequently, Interbull Centre has announced its readiness to embark on international genetic evaluation of fertility traits for up to four traits groups (for heifers' and cows' ability to conceive and re-cycle the reproduction), starting from September 2006. Hossein Jorjani is responsible for this project. Final report will be presented to the 2006 Interbull Meeting in Kuopio.

Monitoring selection decisions in global dairy cattle populations

Advances in reproductive technologies and availability of across-country evaluation of dairy bulls have enhanced internationalization of dairy cattle programs. Several studies have shown the benefits of across country selecting. To manage available genetic resources in a sustainable way much overlap between the uses of selected sires should be avoided. The objective of this project is to document the use of foreign versus domestic sires to breed cows and bulls and the overlap in the use of sires between countries for five dairy breeds. In addition, intensity of selection will be computed. MSc student Caroline Gustafsson is the principal investigator in this project. Results will be presented at the 8th World Congress on Genetics Applied to Livestock Production in Brazil.

R&D funding

In addition to funds raised from service fees, research and development activities at the Interbull Centre are financed by grants from the Swedish University of Agricultural Sciences (SLU), the European Union, and the World Guernsey Cattle Federation (WGCF).

Contributions of the above organisations to the future development of Interbull services are gratefully acknowledged.

INTERBULL PUBLICATIONS/PRESENTATIONS

The following Interbull-related publications/presentations were produced since the 2005 Interbull meeting:

Interbull Bulletin No. 33. Proceedings of the 2005 Interbull meeting, Uppsala, Sweden, June 2-4, 2005.

Interbull Bulletin No. 34. Proceedings of the Interbull Technical workshop, Wageningen, The Netherlands, March 2-3, 2006.

Interbulletin. The Official Newsletter of the International Bull Evaluation Service (Interbull) August 2005.

Fikse F., Liu Z. & Sullivan P. 2005. Tolerance values for validation of trends in genetic variances over time. *Interbull Bulletin 33*, 200-203.

Hjerpe E. & Jakobsen J.H. 2006. Interbull checks of international breeding values. *Interbull Bulletin 34*, *In press*.

Jakobsen J.H. & Fikse W.F. 2005. Feasibility of MACE for calving traits for non-Holstein breeds. *Interbull Bulletin 33*, 28-33.

Jakobsen J.H. & Hjerpe E. 2006. Interbull checks of incoming data. *Interbull Bulletin 34*, *In press*.

Jorjani, H. 2005. International genetic evaluation of female fertility traits in 11 Holstein populations. *EAAP Book of Abstracts 11*, 47.

Jorjani, H. 2005. Preliminary report of Interbull pilot study for female fertility traits in Holstein populations. *Interbull Bulletin 33*, 34-44.

Jorjani, H. 2006. Multiple trait MACE for female fertility traits. *Interbull Bulletin 34*, *In press*.

Leclerc H., Fikse W.F. & Ducrocq V. 2005. Prospects of principal components and factor analysis for estimation of genetic correlations among countries for milk production traits. *Interbull Bulletin 33*, 21-24.

Leclerc H., Fikse W.F. & Ducrocq V. 2005. Principal components and factorial approaches for estimating genetic correlations in international sire evaluation. *J. Dairy Sci.* 88, 3306-3315.

Leclerc H., Minéry S., Delaunay I., Druet T., Fikse W.F. & Ducrocq V. 2005. Estimation of genetic correlations among countries in international dairy sire evaluations with structural models. *J. Dairy Sci.* 89, 1792-1803.

Mark T., Jakobsen J.H., Jorjani H., Fikse W.F. & Philipsson J. 2005. International trends in genetic evaluation of functional traits in dairy cattle. *EAAP Book of Abstracts 11*, 42.

Mark T., Madsen P., Jensen J. & Fikse W.F. 2005. Prior (co)variances can improve multiple-trait across-country evaluations of weakly linked bull populations. *J. Dairy Sci.* 88, 3290-3302.

Mark T., Madsen P., Jensen J. & Fikse W.F. 2005. Short Communication: Difficulties in estimating across-country genetic correlations for weakly linked bull populations. *J. Dairy Sci.* 88, 3303-3305.

Mark T. & Sullivan P.G. 2005. Multiple-trait-multiple-country genetic evaluations for udder health. *Interbull Bulletin 33*, 8-15.

Mark T. & Sullivan P.G. 2005. Multiple-trait-multiple-country genetic evaluations of dairy bulls for udder health traits. *J. Dairy Sci.* 88 (Suppl. 1), 229.

Mark T. 2005. International genetic evaluations for udder health traits in dairy cattle. Doctoral Thesis. *Acta Universitatis agriculturae Sueciae* nr 2005:93.

Philipsson, J. 2005. Interbull – how it began and some achievements. *Interbull Bulletin 33*, 131-135.

WORKPLANS

Services

Routine evaluations for production, conformation, udder health, longevity and calving traits are scheduled with the following release dates:

2006 August 7
November 13
2007 Not yet decided

Test evaluation runs for production, conformation and udder health, longevity, calving and female fertility traits:

2006 September
2007 Not yet decided

Dates for routine and test evaluations in 2007 are pending a decision at the Interbull Meeting in Kuopio following the outcome of a member survey on the desired number and timing of evaluations.

Pending on the discussions on international genetic evaluations for beef breeds and traits and availability of financial resources, various activities may take place during the period 2006-2008.

Research

Project	Stage
<i>Hossein</i>	
Validation of complex statistical models	Data analysis
International genetic evaluations for female fertility	Data analysis & reporting
Multiple-trait MACE	Data analysis
<i>Jette</i>	
Weighting factors for complex statistical models	Implementation
<i>Pilar</i>	

Project	Stage
Reduced rank genetic correlation matrix for international genetic evaluations	Data analysis
<i>Freddy</i> Validation of genetic variance	Implementation

Pending on decisions by ICAR, and the availability of financial resources for development of a system for international genetic evaluations for beef breeds, R&D will start at the Interbull Centre in collaboration with the stakeholders of the feasibility study already conducted according to the business plan presented at the 2005 Interbull Meeting in Uppsala. New staff will be recruited for this project.

Meetings

Annual Interbull meeting, 2007, in conjunction with the 58th EAAP meeting in Dublin, Ireland, August 23-25, 2007.

Course

A five-day course on national and international genetic evaluation practices is planned in conjunction with the 8th World Congress on Genetics Applied to Livestock Production in Brazil, August 2006. The course will be targeted towards PhD students, employees at genetic evaluation centres and countries with the intention to join the Interbull services in the near future giving priority to participants from countries around the hosting country. The course will be held after the World Congress.

Workshops

A one-day seminar/workshop with AI industry and world breed societies will be organized in conjunction with the World Dairy Expo in Madison, WI, USA (October 2-6, 2007). Purpose of the workshop is to intensify the dialogue with the cattle breeding industry about Interbull and Interbull evaluations.

Provided ICAR decides on developing the system for international genetic evaluations for beef breeds and traits a workshop may be arranged in early 2007.

Planned Publications

Interbull Bulletin: Proceedings Interbull Open Meeting June 4-6, 2006, Kuopio, Finland.

Interbulletin August 2006.

Interbull Centre Finances and Budgets, May 2006

COMMENTS TO ACCOUNTS AND BUDGETS

The financial situation of the Interbull Centre is presented in Appendix II. All figures are given in Euros. The table includes the final accounts for 2005 in comparison with the budget for 2005 and with the results for 2004. The budget for 2006 is revised according to the expectations as of the end of April 2006. A budget for 2007 is presented for approval together with a provisional budget for 2008, in order to have an opportunity to project the economy on a longer term.

Some important assumptions for the budgeting procedure have been made. They will be given into some detail below, but the most important facts are:

- Services now include all six breed groups for production, conformation, udder health, and longevity and three breed groups for calving (Ayrshire, Brown Swiss and Holstein). The service for female fertility is scheduled to start with a test evaluation in September 2006, and the first routine evaluation will take place in February 2007, pending the outcome of the test evaluation.
- More countries are expected to join the Interbull evaluations for longevity and calving.
- Activities related to the development of international beef evaluations are not considered in the present budget. The balance is expected to be unaffected by these activities, because it is assumed that external funds cover the costs of these activities from the start.
- The reservations made in the past years due to favourable exchange rates, publication costs covered by ICAR from the Interbull membership fees and some vacancies will be used to create a sabbatical / post-doc position for in total 1½-2 years, starting the second half of 2006.

Accounts for 2005

The final accounts for 2005 are presented in Appendix II, according to the same format as in previous years. The accounts have also been audited within the normal procedures for the Swedish University of Agricultural Sciences (SLU). The result for 2005 was better than the projections in the budget. Incomes were close to expectations. The previous USDA research funding has been phased out, but supports of Swedish organizations and WGCF have been maintained. The EU contribution was with 65,000 the same as in 2004. Costs were considerably lower than expected, in particular publications and phone, fax, postage because Interbull membership fees handled by ICAR were utilized to cover costs for printing and distribution of Interbull Bulletin 33.

The result for 2005 led to a positive balance of 15,812, which means that the accumulated balance at the end of 2005 was 153,748.

Revised budget for 2006

Comments refer to the numbers in the table and points at deviations or new information since last meeting. Corresponding figures for 2005 are given within parenthesis when appropriate.

1. Service fees are for production 305,059 (316,042), conformation 87,482 (87,482), udder health 44,747 (41,443), longevity 37,649 (36,225) and calving traits 27,567 (26,131). Service fees for female fertility will be 12,107, i.e. equal to ¼ of the fee for a full year.
2. SLU has provided funds for a 0.5 researcher position for four years, which started April 2002. Continued support is expected, though not for a special position. Continued support (£ 5,000) by the World Guernsey Cattle Federation (WGCF) is also expected.
3. An EU grant of 65,000 has already been decided for 2006. 70% is paid the actual year and 30% the next year after an approved report.

5. Salary costs incl. social benefits are included for on average 5.6 (5.1) scientists, 0.5 programmers, and 0.4 secretaries. This is an increase of 0.5 scientists compared with the previous budget and includes a post-doc position.
7. Higher costs compared to 2005 are expected in 2006 due to the Interbull Technical workshop in Wageningen, (The Netherlands), the ICAR and Interbull meeting in Kuopio (Finland) and the WCGALP in Brazil, where Interbull arranges the dairy genetics session.
8. Publication costs are expected to be higher than for 2004 and 2005 because two Interbull Bulletins will be published in 2006.
9. Phone, fax and postage costs are expected to be higher than for 2004 and 2005 because two Interbull Bulletins will be published in 2006.
12. The contract established between Interbull and the North-American consortium on outsourcing the conformation evaluations, assumes an annual basic fee of 50,000.

It is expected that the 2006 results will be negative. The primary reason is the planned use of reservations from 2005 for creation of a sabbatical / post-doc position. The accumulated balance is still expected to be slightly higher than that of 2004.

Budget for 2007 and provisional budget for 2008

Specific comments are given when essential deviations from previous years are expected. No change in service fees for 2007 is proposed, whereas an increase of service fees for several non-production traits may be necessary for 2008. However, the provisional budget presented for 2008 does not take that into account.

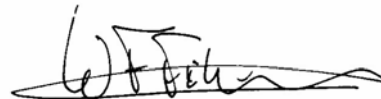
1. Service fees in 2007 for production are expected to 305,059, for conformation to 87,482, for udder health to 43,107, for longevity traits 37,649, for calving traits 27,567, and for female fertility traits 50,805.
2. Research grants from SLU, the WGCF and other sources will be applied for.
4. Salary costs are included for 5.6 scientists (incl. sabbatical / post-doc), 0.5 programmers, and 0.4 secretaries for 2007. For 2008, salary costs are included for only 5.1 scientists and unchanged number of support staff. Whether this is realistic in relation to the services provided and the R&D expected will be evaluated prior to Interbull Meetings in 2007.
7. Lower costs compared to 2006 are expected in 2007 because of fewer meetings (Interbull/EAAP meeting in Ireland and seminar with AI industry and breed societies in Madison, WI, USA). The provisional budget for 2008 accounts for two meetings, the ICAR and Interbull meeting in the USA and one workshop.

It is expected that both 2007 and 2008 will yield some deficits, which for 2007 will be balanced with accumulated reserves, whereas the 2008 budget will be elaborated in more detail within the coming year. The possible development of beef international genetic evaluations will lead to revisions of the final budgets for both 2007 and 2008, but should not have negative implications for service fees for dairy cattle international genetic evaluations.

Uppsala, May 10, 2006



Jan Philipsson
Interbull Secretary



Freddy Fikse
Interbull Centre Director

Interbull Centre Finances and Budgets (Euro), April 2006

	2004	2005		2006		2007	2008
	Actual	Budget	Actual	Budget (original)	Budget (revised)	Budget	Prov. Budget
<i>Income</i>							
1. Service fees	481,247	508,500	507,323	506,900	514,600	551,700	551,700
2. Research grants	93,356	68,200	64,140	73,000	83,300	67,400	63,100
3. EU grants	65,000	65,000	65,000	65,000	65,000	65,000	65,000
4. Other income	-	-	6,334	-	-	-	-
Total	639,603	641,700	642,797	644,900	662,900	684,100	679,800
<i>Expenses</i>							
5. Salary costs	337,313	339,600	338,015	348,400	373,700	392,100	383,600
6. Computer costs	43,438	45,000	49,275	45,000	45,000	45,000	45,000
7. Travels, conferences	33,206	25,000	26,127	40,000	40,000	35,000	35,000
8. Publications	10,210	14,000	8,084	10,000	10,000	10,000	10,000
9. Phone, fax, postage	15,616	14,000	5,135	14,000	10,000	10,000	10,000
10. Steering Comm. and ICAR	6,314	8,000	6,300	8,000	7,000	7,000	7,000
11. Miscellaneous	7,218	5,000	7,645	5,000	8,000	8,000	8,000
12. Outsourced activities	50,000	56,500	59,552	50,000	50,000	50,000	50,000
13. Office and univ. adm. costs	131,508	128,000	126,852	128,000	132,000	135,000	135,000
Total	634,823	635,100	626,985	648,400	675,700	692,100	683,600
Balance	4,780	6,600	15,812	-3,500	-12,800	-8,000	-3,800
Accum. Balance	137,936	144,536	153,748	150,248	140,948	132,948	129,148

Note: Interbull membership fees are not included in this table because they are handled directly by the ICAR office, Rome, Italy, and reported at the biennial meetings of ICAR. For 2005 the membership income of Interbull amounted to EUR 44,476 and for 2006 membership fees are budgeted at 48,953. They contribute to cover overhead costs for ICAR/Interbull, some travels, publications and information work. The Interbull Centre also contributes (EUR 6,930) annually to ICAR from service fees to cover these costs.