

Interbull 2020-2023 Strategic Plan



May 2020

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1. Introduction

The Interbull 2020-2023 Strategic Plan outlines the changes Interbull envisages during the next three to five years and has four key functions:

- a) Establishes Interbull's direction for the next three to five-year period
- b) Sets out goals and objectives in line with the vision and mission statements
- c) Seeks to consolidate the gains made under the previous Strategic Plans
- d) Identifies the areas for investment to strengthen capability and services

Interbull comprises Interbull Centre, an operational unit that provides services to its members and service users, and is governed by the Interbull Steering Committee, which is a permanent sub-committee of the International Committee for Animal Recording (ICAR).

Interbull co-ordinates an international network through meetings, workshops, online discussion forums, surveys, presentations, publications and a website. Interbull annually organizes an international seminar for exchange of research results and experiences among industry representatives and scientists in the area of genetic evaluation of dairy cattle and publishes these through the online journal 'Interbull Bulletin'.

The Interbull Centre provides international leadership in researching and developing methods for generating international genetic evaluations. It achieves this through coordinating and reviewing research done in member countries, as well as running its own research program.

The Interbull Centre provides the International Genetic Evaluation Service that calculates international genetic evaluations for most of the economically important traits in dairy cattle and has over 35 countries currently subscribed to this service. The Interbull Centre is also the operational unit for ICAR's Interbeef Working Group, providing international evaluations for beef cattle. The Interbull Centre has developed the expertise, infrastructure, processes and procedures to carry out these services. The Interbull Centre is ISO certified.

Interbull provides member countries with advice and assistance on all matters relating to the genetic evaluation of cattle. This includes guidance for countries developing joint evaluation or recording schemes, and recommended codes of practice for national evaluation systems.

The Interbull Centre fulfils its function as the European Union Reference Centre for Bovine Breeding in accordance with European Union Regulations 2016/1012 (Animal Breeding) and 2017/1422 (EU Reference Centre).

Interbull services are only available to ICAR members or their national affiliates. ICAR charges its members a 'genetic evaluation' fee if they are involved in Interbull's Genetic Evaluation Service. Interbull only charges service fees for provision, maintenance and development of services.

This Strategic Plan, with its Vision and Mission statements, is applicable to both the Interbull Centre (operational unit) and to the ICAR appointed Interbull sub-committee (Interbull Steering Committee). Ultimately, the Interbull Centre is governed by the Interbull Steering Committee. The Interbull/ICAR relationship with other entities is visualised in Appendix 1.

2. Vision Statement

To be the worldwide network providing information services for the genetic improvement of livestock.

3. Mission Statement

To enhance livestock genetic improvement through international data exchange and best methods development.

4. Objective

To support the cattle industry with accurate genetic information on bulls of the major breeds for use by importers and exporters, thereby facilitating selection of the best genetics for different countries, environments or breeding goals.

5. Guiding Principles

In delivering the Interbull 2020-2023 Strategic Plan, Interbull will be guided by the following principles:

- **Customer-Oriented** – we align our objectives around understanding and satisfying our customers' requirements.
- **Accurate** – we are committed to measurements and data being correct and precise.
- **Unbiased** – we work with an open mind and no bias.
- **Independent** – we make decisions and act in the best interests of the global Interbull network, not any individual organization.
- **Integrity** – we act with honesty and consistency in whatever we do.
- **Transparency** – we are committed to open, two-way communication.
- **Cost-Effective** – we strive to find the most cost-effective means for customers to achieve their goals.
- **Innovative and Leading-Edge Services** – we continually look for new and better ways of doing things.

6. ICAR's Vision and Mission

Interbull operates under the mandate of the International Committee for Animal Recording (ICAR). ICAR's Vision and Mission statements are provided to put Interbull's in context.

ICAR Vision Statement

- ICAR shall have participating members in all countries.
- Collaborating with complementary organizations.
- To be the responsive organization in the field of animal industry standards.
- To provide dynamic work of the Subcommittees and working groups to serve members.

ICAR Mission Statement

To meet the needs of ICAR's global membership in a professional and responsive manner while collaborating with other organizations, having similar objectives, and operating in a dynamic animal production environment.

7. Consultation & Development Process

Consultation and input into the strategic planning process included a review of previous Strategic Plans (2013-15 and 2016-18), an Online Survey of Interbull Stakeholders and a Strategic Planning Meeting.

An Online Survey of Interbull Stakeholders was conducted in December 2019 with 49 respondents to the survey. The survey sought to clarify Interbull's vision and mission statements, review and identify the strengths, weaknesses, opportunities and threats of the organization, review

achievement of previous strategic objectives and test the ongoing relevance of the medium- to long-term strategic objectives in the 2016-18 Strategic Plan. Results of the survey were analysed and circulated to participants in advance of the Strategic Planning Meeting.

The Strategic Planning Meeting was held in Uppsala, Sweden, on 23rd and 24th January 2020 and was attended by representatives from the Interbull Steering Committee (SC), the Interbull Technical Committee (ITC), ICAR, the Interbull Centre, and Interbeef as well as key Interbull service users. Participants at the Strategic Planning Meeting are listed in Appendix 2.

In order to meet timelines and bring an external eye to bear, the material from the Strategic Planning Meeting was discussed with and provided to Chris Murphy, a consultant with many years of experience in strategic planning. The first cut at the strategy document was drafted by Chris and then workshopped with the Interbull Centre staff and Interbull Chair.

8. Review of 2016-18 Strategic Plan

The 2016-18 Strategic Plan was reviewed during the survey (and subsequent Strategic Planning Meeting). Aspects of the Strategic Plan itself that were thought to have worked well were that it provided:

- A clearer statement of direction and priorities for the Interbull Centre
- An improved approach and process for strategy development
- Broad identification of the needs of industry

Features of the previous Strategic Plan that could be improved were identified as:

- More regular reference to and assessment of progress by the Steering Committee
- Activities being more pro-active and guided by the Plan, rather than reactive
- Further clarity on direction and which activities to start or continue and which to cease

8.1 2016-18 Short-term Objectives

There was strong agreement by workshop and survey participants that there had been significant gains in several of the 2016-18 short-term (2-3 year) strategic objective areas:

- Build relationships with service users and other external research collaborators
- Robust documented policies and procedures are in place and regularly reviewed
- Support a culture of continuous improvement and customer focus

The 2016-18 short-term strategic objectives that were judged not to have been completely delivered on, or that remained unfinished and relevant were:

- Implement new traits
- Establish a new research and development (R&D) model supporting future development
- Improve the Interbull governance model
- Cultivate closer stakeholder involvement

8.2 2016-18 Medium- to Long-term Objectives

Medium- (3-5 year) to long-term (10 year) strategic objectives from the 2016-18 Strategic Plan that were judged to be less relevant for the Interbull 2020-2023 Strategic Plan were:

- Investigate potential for International genetic evaluations of other species
- Undertake female evaluations
- Adopt a proactive approach to heat tolerance

Medium- to long-term strategic objectives that were judged to still be highly relevant for the Interbull 2020-23 Strategic Plan were:

- Adopt a proactive approach to health and disease traits
- Ensure appropriate on-going funding and resourcing
- Maintain a highly respected and efficient ICAR/Interbull governance structure
- Ensure continuous improvement and timely implementation of updates and improvements
- Continued Interbull Centre staff development to keep up with changes in Interbull operations and portfolio

These perspectives were incorporated into the development of the Interbull 2020-2023 Strategic Plan.

9. SWOT Analysis

Table 1 provides the 2020 SWOT analysis, which was based on feedback from survey participants and on strengths, weaknesses, opportunities and threats identified and discussed at the Strategic Planning Meeting. The components of the SWOT analysis are not listed in order of priority.

Table 1: SWOT Analysis

| STRENGTHS | WEAKNESSES |
|--|---|
| <p><u>SERVICES</u></p> <ul style="list-style-type: none"> • International evaluation services • Customer service, support and management • Servicing many populations and traits • High quality standards, processes, procedures and documentation (ISO certified) <p><u>COLLABORATION</u></p> <ul style="list-style-type: none"> • Networks, meetings and ideas exchange opportunities; open and safe environment for exchange • Data sharing and management, including independent Data Hub/Exchange • Effective communications • Connection with ICAR and its working groups • Shared values across members <p><u>TECHNICAL / SCIENTIFIC EXPERTISE</u></p> <ul style="list-style-type: none"> • Technical expertise in statistical data analysis and methodologies • Scientific expertise, network and collaboration • Having an Operational Centre (the Interbull Centre) for implementation <p><u>STANDARDS / VALIDATION</u></p> <ul style="list-style-type: none"> • International standards and quality assurance for national genetic evaluations • EU reference centre • Research and scientific development of methods for validation of national evaluations <p><u>INDEPENDENCE</u></p> <ul style="list-style-type: none"> • Neutrality, independence, integrity and credibility • Trust and accountability <p><u>OTHER</u></p> <ul style="list-style-type: none"> • Source for genetic improvement information for local animal populations • Support for international pedigree management | <p><u>RESOURCING</u></p> <ul style="list-style-type: none"> • Inadequate resource availability • Sustainability and adaptability of business model <p><u>IMPLEMENTATION</u></p> <ul style="list-style-type: none"> • Slow implementation and service innovation • Limited focus and lack of detailed planning • Not owning and fulfilling goals and tasks <p><u>DECISION-MAKING</u></p> <ul style="list-style-type: none"> • Insufficient transparency on decision-making processes, including communication and feedback from Steering Committee and Business Meetings • Lack of genomic era strategy and long-term vision • Current governance model and legal structure <p><u>SERVICES</u></p> <ul style="list-style-type: none"> • Lack of vision in anticipating future services - adoption rate of new traits and adaptation of new methods; expanding outside the current core business; adjusting methodologies towards different species than cattle • Not offering - more regular evaluations for current traits; services for the increasing number of traits; services that are not open to all members • In need of a clear value proposition for all services offered <p><u>TENSIONS</u></p> <ul style="list-style-type: none"> • Competition or conflicts of interest • Differences between member countries • Non-adherence of accepted guidelines by some National Genetic Evaluation Centres <p><u>OTHER</u></p> <ul style="list-style-type: none"> • Location • External brand recognition • Rely on national evaluation centre to advertise Interbull activities to their customers, lack of a more direct networking/advertisement • Succession planning in Steering Committee |

| OPPORTUNITIES | THREATS |
|--|---|
| <p><u>DATAHUB & DATA SHARING</u></p> <ul style="list-style-type: none"> • DataHub as infrastructure and neutral platform to share data • More data sharing (genotypes & phenotypes) • Rapid growth of female genotypes • Platform for R&D, indices for health traits and feed efficiency, carbon footprint, breeding for future climates, etc. and to shape policy decisions • DataHub/big data authentication or certification of sensors, etc. • Define guidelines for data sharing <p><u>VALIDATION</u></p> <ul style="list-style-type: none"> • New validation methods / validation of new traits • International accreditation of genetic evaluation services <p><u>TECHNOLOGY</u></p> <ul style="list-style-type: none"> • New information technologies (IT), machine learning, other technologies and sequencing • Collaborate and gain expertise from other people working with big data in other fields • Exploit the various IT possibilities related to how to make best use of big data (platforms etc.) <p><u>SERVICES</u></p> <ul style="list-style-type: none"> • New methodologies allowing international evaluations without exchange of sensitive information • New services based on genotypes and sequence data (from both males and females) • New approaches for conversion of total merit indices in order to grant market access • New trait groups (feed intake, health, animal behaviour) • Beef x Dairy • Exploit possible actions towards biodiversity <p><u>EXPANSION</u></p> <ul style="list-style-type: none"> • Expansion into new species and/or countries (including smaller and/or developing countries) • Exploit a communication service with all manufacturers (within and between countries) on accreditation and certification • Facilitating international knowledge sharing on genetic evaluation <p><u>NETWORKING</u></p> <ul style="list-style-type: none"> • Promote the Interbull brand further via ICAR/SLU mechanisms • More relevance to EURC status, reaching out to countries not yet involved with Interbull activities <p><u>OTHER</u></p> <ul style="list-style-type: none"> • Training opportunities for participating countries/organisations • Joint funding applications to support development | <p><u>CHANGING BUSINESS ENVIRONMENT</u></p> <ul style="list-style-type: none"> • Changing business environment (private evaluations, global consortiums) • Regional collaboration rather than international evaluation • Sustainability of smaller breeding programs/countries • Some large member countries diverge from Interbull's goals • Increased protectionism (e.g. trade, IPR, etc.) • Reduced public funding <p><u>REDUCED DATA SHARING</u></p> <ul style="list-style-type: none"> • Reduction in data sharing due to competitive pressures • Merging of national databases or similar developments • Data access, data staying on farm, decrease of traditional milk recording • Data ownership / governance, data control and access <p><u>RELEVANCE OF SERVICES</u></p> <ul style="list-style-type: none"> • Sustainability and relevance of current core services • Genomic pre-selection bias • Increasing gap between Interbull service and end-user requirements (AI companies and farmers) <p><u>OTHER</u></p> <ul style="list-style-type: none"> • Changes in livestock production, fewer animals, e.g. climate, environment, decreasing meat and milk consumption • Reduction of quantitative genetics expertise over time; Succession planning, and influx of young people is required • Lack of participation in contemporary communication, e.g. social media • Lack of vision in traditional stakeholders Interbull currently relies on lack of preparedness to change by some members' stakeholders |

10. Interbull 2020-2023 Strategic Plan

The review of the previous strategy and collation of new ideas contributed to identification of six goals within the Interbull 2020-2023 Strategic Plan. The six goals were considered equally important at the Strategic Planning Meeting and they are not ranked in any way (section numbering does not indicate priority). During the Strategic Planning Meeting, key objectives and focus activities were identified, and have been included with each goal. Additional activities that were put forward by participants, but that were not assessed, or not considered to be of the highest priority for this Strategic Plan have been included in Appendix 3 for future reference.

GOALS



Meeting future data service needs



Defining a new traits pipeline



Providing international evaluations in the genomic era



Continuously improve core services



Strengthening governance



Driving branding and marketing

10.1 Goal 1: Meeting future data service needs



A key issue raised in the strategic planning process was the reduction in data sharing due to competitive pressures, with some stakeholders not prepared to fully share data.

The emergence of new data providers provides an opportunity for Interbull and requires the organization to engage with them and be open-minded around future prospects. The challenge (and opportunity) with large data providers is how Interbull can encourage them to share internationally and how Interbull could extend further its current accreditation and validation services.

Key challenges in meeting future data service needs are accessing the necessary people and capability, developing a sustainable business model with appropriate fee structures, and the speed of decision-making and time to market. New data providers will expect commercial timeframes for implementation and will find alternative options or not participate if execution is slow.

The strategic issue in this area is to focus on what is achievable in terms of expansion of data and phenotypic services against realistic expectations of funding, resourcing and income.

10.1.1 Objectives

Meeting future data service needs will be accomplished through achievement of the following objectives:

1A. Maintain existing data exchange services

1B. Expand data sharing

1C. Understand and meet future data needs

10.1.2 Focus Activities

During the Strategic Planning Meeting the following key focus activities were identified to meet future data service needs:

- Continue to deliver and improve data exchange services to meet Interbull user needs.
- Conduct a needs analysis to understand future data exchange requirements from existing service providers, industry stakeholders and new entrants, including their appetite to exchange phenotypes and genotypes in the future.
- Leverage infrastructure, capability and brand of Interbull to expand data services (beyond international genetic evaluations) where there is a compelling business case.
- Meet future data needs of customers through data science principles and collaboration with other big data users based on the conducted needs analysis.

10.2 Goal 2: Defining a new traits pipeline



When defining a data pipeline for new traits, the following issues/considerations were raised: 1) importance to assess the willingness and/or ability for the user to share the data; 2) consider the possibility to offer a new service based on data sharing and with that the possibility to move from receiving just EBV (as currently happens in MACE) to receive raw phenotypes; 3) the possibility to deal with raw phenotypes could require the need for a new infrastructure for collection of such data; 4) inclusion of new traits place an issue with the type of business model to follow in order to issue proper service fees. The possible different investments done on collecting new phenotypes by countries should be taken in consideration in order to have a fee structure that could clearly reflect the value proposition; 5) define the prioritization approach that should apply; and 6) clarify the process from R&D into service implementation.

10.2.1 Objectives

Defining a new traits pipeline will be accomplished through achievement of the following objectives:

2A. Identify the key decision factors

2B. Define the service need

2C. Define a business model and the relevant fee structure

10.2.2 Focus Activities

During the Strategic Planning Meeting the following key activities were identified to develop a system to identify, clearly define and prioritise (based on expected impact) a pipeline for introduction of new traits:

- Appoint a Working Group to address the following points:
 - Identify key decision factors for advancing any trait. Depending on the trait at hand decide if using national EBV or phenotypes, promote harmonization of trait across interested countries via an active link with the ICAR Working Groups or request the activation of one from ICAR if not currently available, assess the feasibility of the possible service depending on number of countries and breeds.
 - Define the service need and the required pipeline both in matter of infrastructure needed and programs/methodology to apply.
 - Define and develop a business model, business plan and appropriate fee structure, taking in consideration different level/entity of investments done by countries.

10.3 Goal 3: Providing international evaluations in the genomic era



It has been more than a decade since the “genomic era” commenced with a dramatic improvement in sequencing technologies and an enormous reduction in their cost. The key issue raised during the strategic planning process was ensuring that Interbull services remain relevant in the genomic era. The growing role of genomics brings with it both opportunities and threats.

It is critical that Interbull has a clear position regarding genomics and new phenotypes, and that it is providing genomic services that are relevant, customer-oriented and that complement members’ current programs.

There is an opportunity to locate Interbull within the context of the genomic era with roles from genotype and phenotype recording through to generation of breeding values, not only as a service provider but also a facilitator, leader and reference on the latest genomic technologies. This also brings potential challenges around using genomic information in evaluations, developing new validation methods, having the appropriate technology to deal with large-scale genomic data, and dealing with the consequences of using genomic data, e.g. the effect of genomic pre-selection that can affect national and international evaluation results.

10.3.1 Objectives

Providing international evaluations in the genomic era will be accomplished through achievement of the following objectives:

3A. Provide international genomic information

3B. Develop a system where all data can be used in one single step model

3C. Develop new methodologies

10.3.2 Focus Activities

During the Strategic Planning Meeting the following key activities were identified to provide international evaluations in the genomic era:

- Provide international genomic information that can be used as input into genomic evaluation (short-term action).
- Develop a system for the optimal use of genomic and conventional information (longer-term action): This is the next step after implementing genotype-based international evaluation.
- Develop new methodologies and validations to handle the impact of genomic pre-selection on international and national evaluations.

10.4 Goal 4: Continuously improve core services

The strategic planning process identified the need to continually improve and extract more value from current core services. A key point made was that these services remain important to Interbull and can easily be overlooked when considering future directions.



The two key aspects of focus in this area are extracting increased value from existing services (especially as resources are constrained) and promoting core services to existing and potential clients (linked to Goal 6: Driving branding and marketing).

A key challenge in this area is maintaining a business model that meets the needs of a wide range of heterogenous customers (e.g. large and small countries) at different levels of existing service uptake and use.

From a strategic perspective it was agreed that there would be value in cataloguing and reviewing the services Interbull already provides, examining ways to drive efficiencies and/or increased value from these services, and using a framework to identify and prioritise resources for core services versus development of new services.

10.4.1 Objectives

Continuously improving core services will be accomplished through achievement of the following objectives:

4A. Assess service user satisfaction and needs

4B. Review and adjust methods and tools

10.4.2 Focus Activities

During the Strategic Planning Meeting the following key activities were identified to continuously improve core services:

- Frequently assess customer satisfaction, needs and demands regarding Interbull's core services and service levels, and ensuring service delivery meet these needs.
- Regularly review and adjust methods and tools to account for changes in data and/or in underpinning assumptions. Regularly review results and update programming if required.

10.5 Goal 5: Strengthening governance



Concerns raised during the strategic planning process regarding Interbull's governance were not specifically around the operations and performance of the organisation, but were more accurately categorized in two areas:

- Insufficient speed, clarity and transparency of decision-making processes and outcomes; and
- Better defining, integrating and streamlining the relationships between Interbull stakeholders, ICAR (and its Committees and Working Groups), the Interbull Steering Committee, Interbull Centre, Swedish University of Agricultural Sciences (SLU), Interbull Business Meeting delegates and the European Commission.

Participants in the Strategic Planning Meeting acknowledged that a balance must be found between managing expectations for substantial change by some stakeholders and a level of resistance to change by others. It was also acknowledged that this area is complex due to the number of partners and stakeholders involved.

10.5.1 Objectives

Strengthening governance will be accomplished through achievement of the following objectives:

5A. Develop faster, more transparent decision-making

5B. Maintain a fit-for-purpose governance structure

10.5.2 Focus Activities

During the Strategic Planning Meeting the following key activities were identified to strengthen governance:

- Shortening the duration of decision-making processes and communicating decisions in a more timely and effective manner.
- Ensuring that the governance structure is suitable for delivery of Interbull services and for providing direction to Interbull Centre.
- Documenting and reviewing the existing Interbull governance model, including Steering Committee membership and Business Meeting participation.
- Working with ICAR and relevant subgroups to better define the relationship between ICAR (and its Committees and Working Groups), SLU, Steering Committee, Interbull Centre and Interbull Business Meeting delegates and explore the potential to streamline this system.
- Identifying gaps or areas of improvement and proposing changes to the existing governance model or an alternative governance structure.
- Implementing agreed changes, if required, with the endorsement of ICAR and Interbull service users.
- Ensuring Interbull Centre is appropriately resourced to provide support to the Steering Committee (and other applicable governance groups), and that best-practice systems, processes and reporting are in place.

10.6 Goal 6: Driving branding and marketing

A key strategic issue is the level of visibility and awareness of the activities and value of Interbull to existing clients, potential clients and other stakeholders. This issue has several components and causes, including an absence of a stated value proposition for Interbull (including what makes Interbull unique), incomplete statements of the services that Interbull offers, and limited communication to build the awareness and visibility of Interbull. These issues are compounded by the fact that Interbull often operates “behind the scenes” and its contribution of value to end-users may not be apparent.



Motives identified for increasing the level of branding and marketing included informing end-users about Interbull programs and services, promoting Interbull as a global leader in independent and unbiased genetic improvement and positioning the Interbull Centre for global R&D coordination, application and networking.

It is important to be clear on the reasons for marketing Interbull and the requirement for specific messages and approaches to different stakeholder audiences. Ultimately the primary purpose of a communication and branding strategy is for existing member organisations to fully appreciate the offering and value of Interbull (and “buy in” to it). This also provides an opportunity to market and position Interbull to a range of potential funders, members, partners and technical collaborators. The key challenge will be in balancing the potentially significant costs for communication, branding and marketing against the prospective benefit of these activities.

10.6.1 Objectives

Driving branding and marketing will be accomplished through achievement of the following objectives:

6A. Clearly define Interbull's value proposition

6B. Improve communication and marketing

10.6.2 Focus Activities

During the Strategic Planning Meeting the following key activities were identified to focus on to drive branding and marketing:

- Better define services that are on offer, both current and in future services.
- Clearly define the value of each of Interbull's core services and ensuring this is effectively communicated and promoted to existing and new clients.
- Specify target markets or audiences through identifying who uses which methodologies (and why they use these methodologies).
- Develop a communication and marketing plan with appropriate messages for each market segment or audience. There may be a different value for the same service delivered to different segment, hence also a different message will be required.
- Stakeholder surveys or interviews will be used where appropriate.

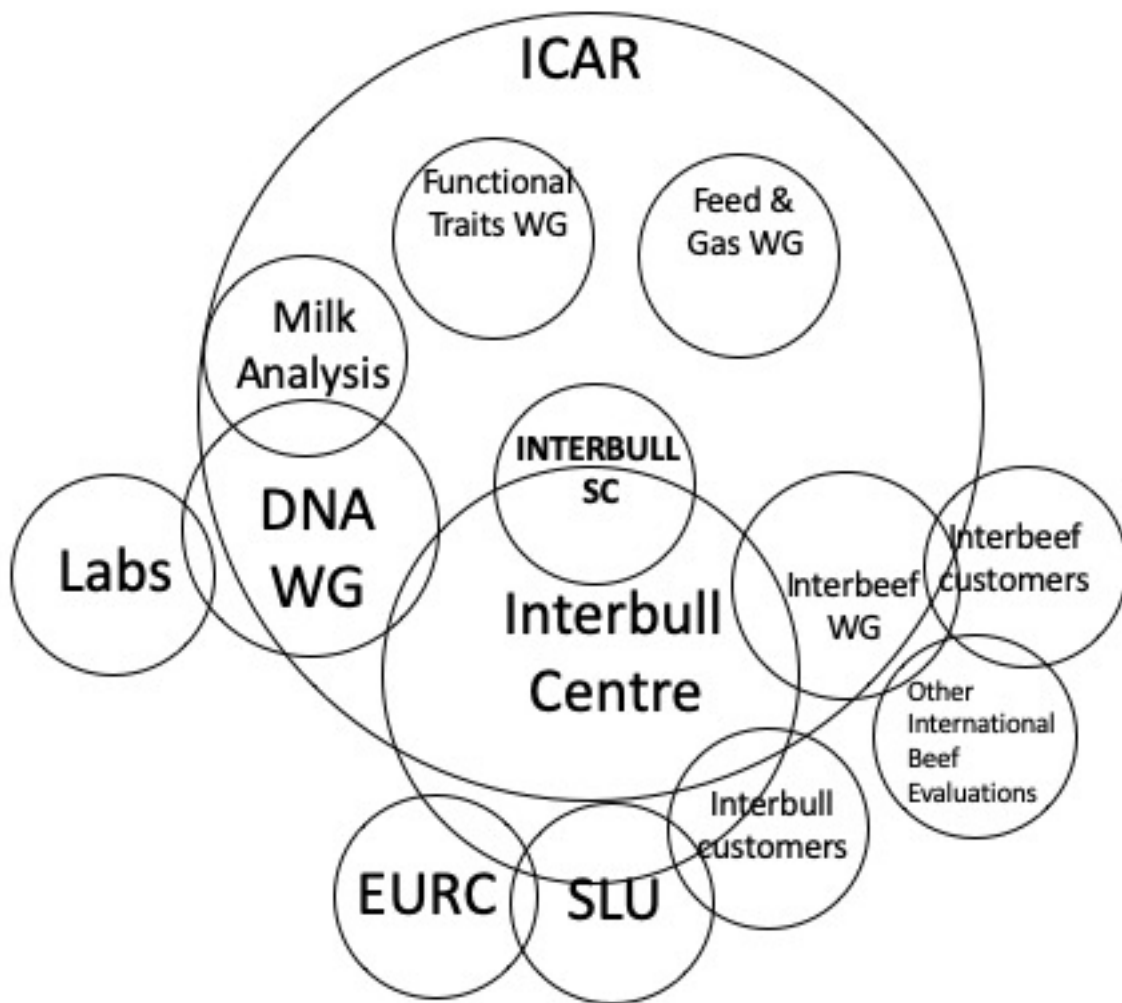
Annual Objectives / Action Plan

(to be completed and confirmed)

| STRATEGIC GOAL | OBJECTIVE | ANNUAL ACTIVITIES | | |
|--|--|--|--|---|
| | | 2020/21 | 2021/22 | 2022/23 |
| Meeting future data service needs | Maintaining existing data exchange services | <ul style="list-style-type: none"> • See 'Improving communication and marketing' | | |
| | Expanding data sharing | | <ul style="list-style-type: none"> • Review rules, policies and protocols for data access • Promote data sharing opportunities | |
| | Understanding and meeting future data needs | <ul style="list-style-type: none"> • Conduct needs analysis to understand future data exchange requirements | <ul style="list-style-type: none"> • Develop a business plan and model | <ul style="list-style-type: none"> • Investigate and develop (if appropriate) new services, tools and validations /certifications |
| Defining a new traits pipeline | Establishing effective processes for prioritise new traits | <ul style="list-style-type: none"> • Define a process to introduce services for any new traits of interest | | <ul style="list-style-type: none"> • A strategy clarified for other species and, if needs are confirmed, services adapted to new species |
| | Evaluating and validating new trait phenotypic data | <ul style="list-style-type: none"> • Establish a working group to develop definitions and input to Steering Committee • Develop a model to validate and harmonise new traits • Define the service needs and pipeline / system and protocols to collect and share data | | |
| | Leading new trait implementation | <ul style="list-style-type: none"> • Define business model and fee structure / level | <ul style="list-style-type: none"> • Have 3 new traits as part of Interbull evaluations | |
| Providing international evaluation in the genomic era | Implementing genomic services | <ul style="list-style-type: none"> • To be completed following ITC-SAC meeting | <ul style="list-style-type: none"> • To be completed following ITC-SAC meeting | <ul style="list-style-type: none"> • To be completed following ITC-SAC meeting |
| | Improving genomic evaluations | <ul style="list-style-type: none"> • To be completed following ITC-SAC meeting | <ul style="list-style-type: none"> • To be completed following ITC-SAC meeting | <ul style="list-style-type: none"> • To be completed following ITC-SAC meeting |
| | Developing new methodologies | <ul style="list-style-type: none"> • Develop technical strategic plan | <ul style="list-style-type: none"> • To be completed following ITC-SAC meeting | <ul style="list-style-type: none"> • To be completed following ITC-SAC meeting |

| STRATEGIC GOAL | OBJECTIVE | ANNUAL ACTIVITIES | | |
|---|---|--|--|--|
| | | 2020/21 | 2021/22 | 2022/23 |
| Continuously improving core services | Adapting and optimizing delivery of core services | <ul style="list-style-type: none"> • Complete an inventory of current services and software • Regularly review and adjust methods and tools | <ul style="list-style-type: none"> • Regularly review and adjust methods and tools | <ul style="list-style-type: none"> • Regularly review and adjust methods and tools |
| | Increasing uptake of core services | See 'Improving communication and marketing' | | |
| | Balancing resources | <ul style="list-style-type: none"> • Develop a framework to allocate resources to enhancements of core services | <ul style="list-style-type: none"> • Monitor expenditure on core services compared to development of new services | <ul style="list-style-type: none"> • Monitor expenditure on core services compared to development of new services |
| Strengthening governance | Developing faster, more transparent decision-making | <ul style="list-style-type: none"> • Evaluate decision-making processes and Interbull Centre resourcing to support • Implement any agreed changes to processes and support | <ul style="list-style-type: none"> • Annual evaluation of governance and Steering Committee performance • Ensure robust documented policies and procedures are in place and regularly reviewed | <ul style="list-style-type: none"> • Annual evaluation of governance and Steering Committee performance • Ensure robust documented policies and procedures are in place and regularly reviewed |
| | Advancing a fit-for-purpose governance structure | <ul style="list-style-type: none"> • Review existing governance model • Implement any agreed changes to governance model • Appropriate contracts in place (ICAR-SLU; SLU-users) | | |
| Driving branding and marketing | Clearly defining Interbull's value proposition | <ul style="list-style-type: none"> • Clear definition of the value proposition | <ul style="list-style-type: none"> • Survey 2021 of end users – recognition of services, etc. • Create a branding, communications and marketing plan • Initiate communications and marketing activities | <ul style="list-style-type: none"> • Evaluate communications and marketing activities |
| | Improving communication and marketing | <ul style="list-style-type: none"> • Identify target markets/audiences | | |

Appendix 1: Structure – connections between entities



Appendix 2: Strategic Planning Workshop participants

| Participant | Roles | Representing |
|--------------------|---|--|
| Haifa Benhajali | Geneticist and Research Coordinator, Interbull Centre | Interbull Centre. Interbull Technical Committee |
| Martin Burke | Chief Executive Officer, ICAR | ICAR |
| Andrew Cromie | Technical Director, Irish Cattle Breeding Federation (ICBF) / Chairman ICAR-Interbeef Working Group | Interbeef |
| Gerben de Jong | Manager of Animal Evaluation Unit, CRV | Steering Committee. Interbull Technical Committee |
| Gordon Doak | (Former) Technical Director, National Association of Animal Breeders / Associate Service Director, Certified Semen Services (CSS) | Steering Committee |
| João Dürr | Chief Executive Officer, Council on Dairy Cattle Breeding | Interbull Service User |
| Ephraim Ezra | Herdbook Manager, Israel Cattle Breeders' Association | Interbull Service User |
| Marija Klopčič | Researcher, Department of Animal Science, University of Ljubljana | Steering Committee |
| Sophie Mattalia | Head of Service, Institut d'Elevage | Steering Committee |
| Jay Mattison | Chief Executive Officer, National DHIA / President, ICAR | ICAR |
| Hugh Nivison | Managing Director, Agricultural Business Research Institute (ABRI) | Interbeef |
| Valentina Palucci | Geneticist and Quality Manager, Interbull Centre | Interbull Centre |
| Reinhard Reents | Managing Director, vit | Interbull Service User |
| Toine Roozen | Director, Interbull Centre | Interbull Centre |
| Enrico Santus | General Manager, Associazione Nazionale Allevatori Bovine della Razza Bruna (ANARB) | Steering Committee |
| Urs Schnyder | Head of Genetic Evaluations, Qualitas AG | Steering Committee |
| Matthew Shaffer | Chief Executive Officer, DataGene | Steering Committee (Chair) |
| Brian Van Doormaal | Chief Services Officer, Lactanet Canada | Steering Committee (Vice Chair) |
| Roel Veerkamp | Head of Animal Breeding and Genomics Centre, Wageningen Livestock Research, Wageningen UR. | Meeting facilitator |

Unable to attend:

| | | |
|----------------------|--|---|
| Gert Pedersen Aamand | Director, Nordic Cattle Genetic Evaluation | Steering Committee, Interbull Technical Committee (Chair) |
|----------------------|--|---|

Appendix 3: Other activities

During the Strategic Planning Meeting other activities were put forward by participants, that were not assessed, or not considered to be of the highest priority for this Strategic Plan. However, these proposed activities have been captured below for future reference.

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| <p>Meeting future data service needs</p> <ul style="list-style-type: none"> • Reviewing rules, policies and protocols for data access, in conjunction with ICAR Working Groups, to confirm the most appropriate data access model. • Promoting a data sharing and DataHub approach, and positioning Interbull as the preferred platform for exchanging high-quality animal data (genotypes, phenotypes, pedigrees). • Providing flexible mechanisms for data exchange and sharing that do not compete with individual Interbull members' programs and do not duplicate existing infrastructure. • Providing a global platform and tools for the efficient exchange of phenotypic data for evaluations and the development and validation of phenotypes. • Investigating and developing (if appropriate) new services, tools and validations/certifications utilizing the DataHub platform, including collection, storage and exchange of sensor data. • Accessing and retaining data science capabilities to deal with the very latest techniques in data analysis. • Applying standards for genomic data quality and exchanges, as set by the ICAR DNA Working Group. |
| <p>Defining a new traits pipeline</p> <ul style="list-style-type: none"> • Prioritising traits already evaluated by several countries, e.g. health traits. • Proactively implementing an efficient system to provide objective and independent evaluations for priority new traits. • Developing a flexible system for delivering services adapted to traits (or subgroups of traits) for specific situations or countries. • Proposing new approaches for new traits (e.g. SNPmace) • Establishing data sharing for new traits including data description and labels to capture and collect data elements for data streams. |
| <p>Providing international evaluations in the genomic era</p> <ul style="list-style-type: none"> • Maintaining networks to facilitate genomic knowledge and expand the exchange of genomic data. • Creating and adapting new relevant validation methods. • Coordinating and leading research for both international and national genomic evaluations. • Defining guidelines for national evaluation centres. • Accommodating the genomic pre-selection bias in evaluations. • Ensuring access to strong expertise via Interbull Centre staff or external capability. • Validating genomic results through feedback on, and certification of, algorithms and SNP microarrays (SNPchips). |
| <p>Continuously improving core services</p> <ul style="list-style-type: none"> • Completing an inventory of current services and software and assessing using a relevancy matrix. • Enhancing tools for exchanging phenotypic information for genetic evaluations. • Ensuring up-to-date validation methodologies. • Utilising a framework to allocate resources to enhancements of core services (compared to development of new services), based on a set of agreed principles and criteria. • Continuing to assess if MACE is delivering the best possible evaluation results. |
| <p>Strengthening governance</p> <ul style="list-style-type: none"> • <i>No additional activities identified.</i> |
| <p>Driving branding and marketing</p> <ul style="list-style-type: none"> • Communicating Interbull news and information on activities more regularly. • Promoting Interbull's role in certifying and validating national evaluation results. • Informing customers about different added-value Interbull services. • Increasing reach and collaboration with a wider industry audience, including revamping meetings or forums to more effectively engage. • Coordinating and participating in a global R&D networks. • Developing a "seal of approval" for use by those with Interbull certification. • Encouraging early-career scientists to participate in relevant R&D, e.g. studies of new traits, and providing tools, data, infrastructure and other support. • Engaging with new potential clients, e.g. Interbeef, small ruminants, camelids, etc. |