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RÉSEAU CANADIEN POUR L'EXCELLENCE LAITIÈRE
CANADIAN NETWORK FOR DAIRY EXCELLENCE

BWYPEX: Discovery, Approval and Management of Genetic Abnormalities in Cattle

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Project Goals

Assess current methods used to:

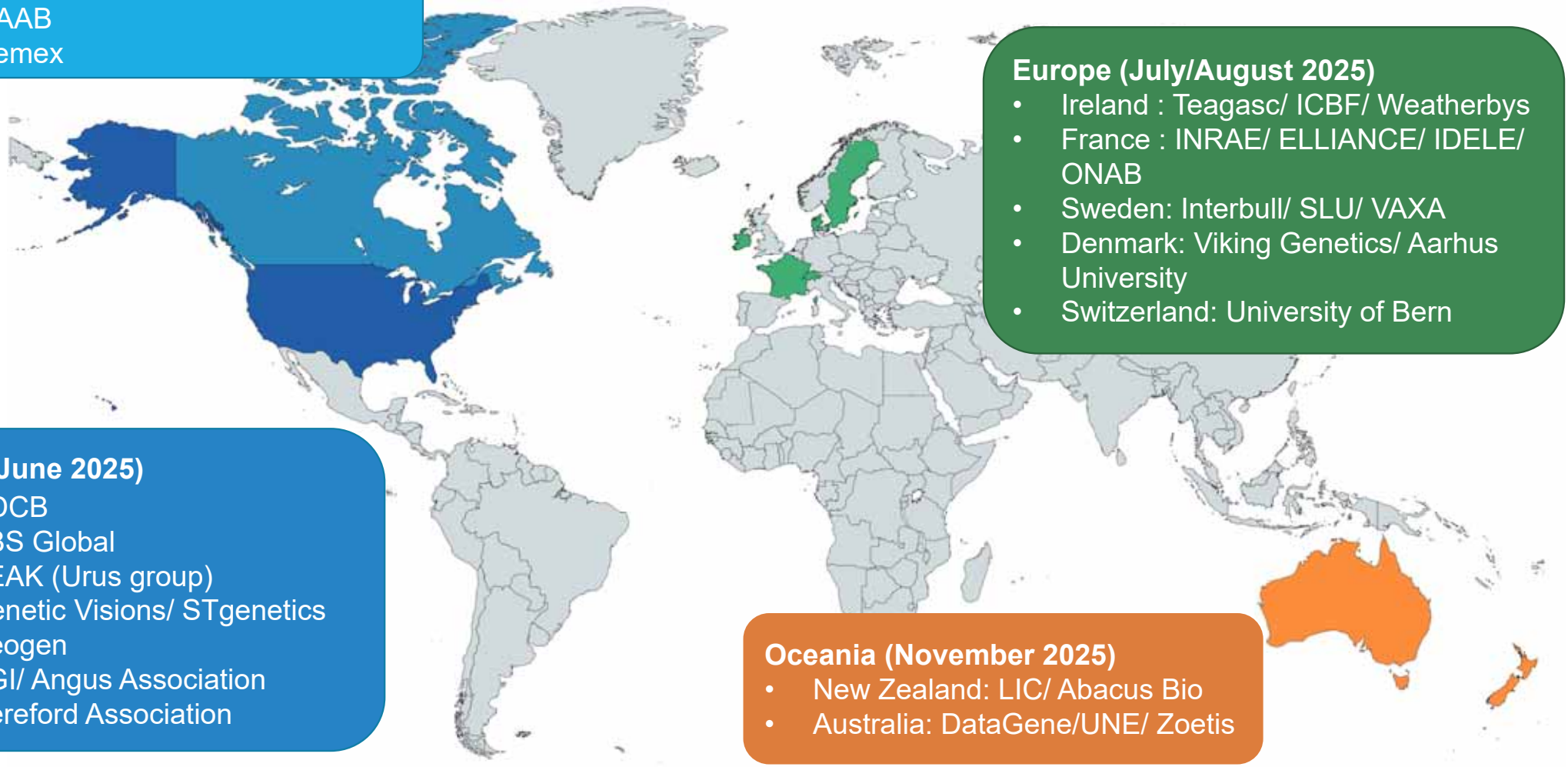
- Quickly discover new genetic abnormalities
- Identify the causative gene and/or haplotype
- Determine the nomenclature for approving and labelling animals

Better understand the:

- Management strategies of genetic abnormalities
- Required level of gene testing within the population
- Knowledge transfer to industry partners

My Journey

Canada/ Virtual Meetings
- Holstein USA/ Holstein Canada
- NAAB
- Semex

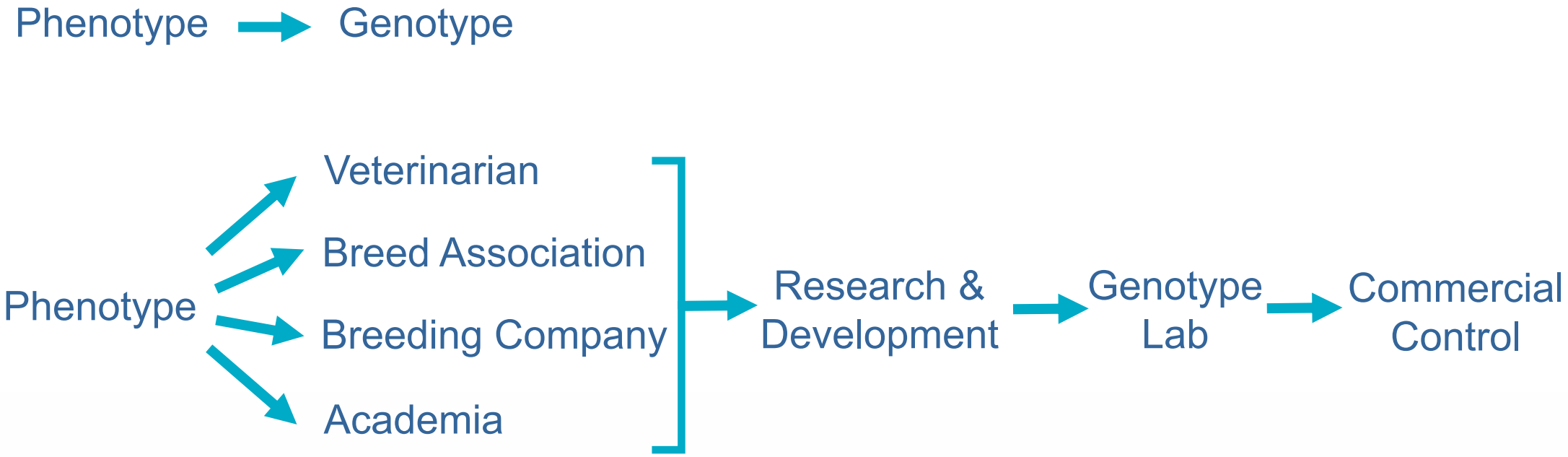


Europe (July/August 2025)
- Ireland : Teagasc/ ICBF/ Weatherbys
- France : INRAE/ ELLIANCE/ IDELE/ ONAB
- Sweden: Interbull/ SLU/ VAXA
- Denmark: Viking Genetics/ Aarhus University
- Switzerland: University of Bern

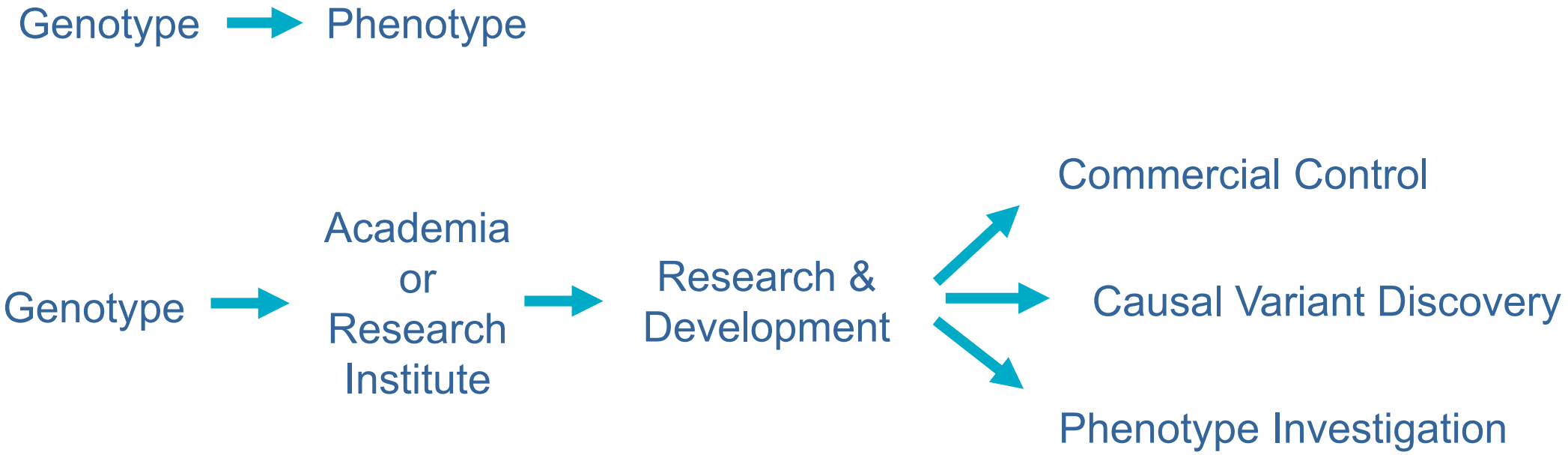
USA (June 2025)
- CDCB
- ABS Global
- PEAK (Urus group)
- Genetic Visions/ STgenetics
- Neogen
- AGI/ Angus Association
- Hereford Association

Oceania (November 2025)
- New Zealand: LIC/ Abacus Bio
- Australia: DataGene/UNE/ Zoetis

Conventional Pathway



Genomic Screening



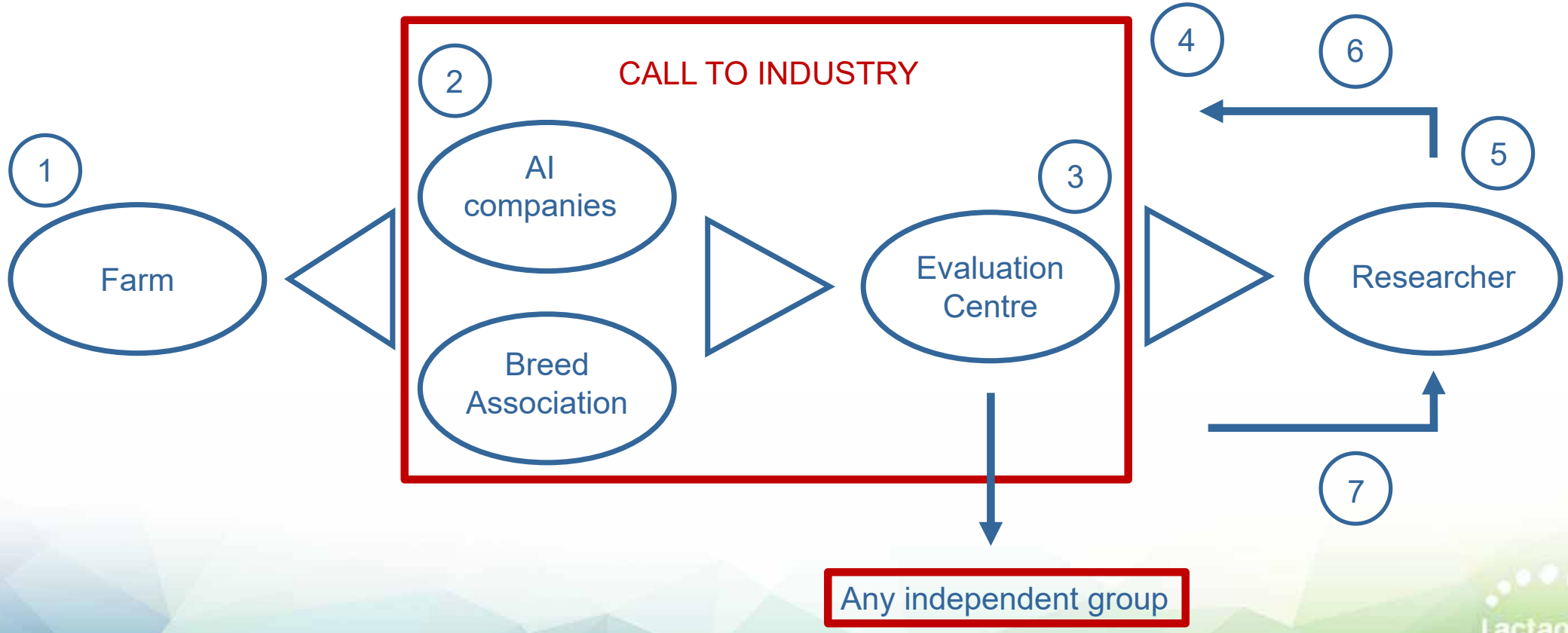
Report Overview

Major Talking Points

How do we:

- Incentivize producers to report information?
- Encourage open communication across chain?
- Encourage research institutions to not patent information?
- Standardize the nomenclature process?
- Develop data repositories and/or biobanks?

National System Example



Roadmap to Success: National System for Genetic Abnormality Recording

PHASE 1: ESTABLISH THE FRAMEWORK

1 Industry Coordination

Engaged all key stakeholders:

- AI companies
- Breed associations
- Evaluation centres
- Research institutes
- Producer groups

Establish an independent national repository

2 Data Infrastructure

Build data pipeline and standards

- Standardized formats
- Secure data transfer
- Automated flagging systems

Ensure information from all sources integrates seamlessly

THE BENEFITS
Why This Phase Matters

Strong governance and industry buy-in

Reliable, efficient information flow

Roadmap to Success: National System for Genetic Abnormality Recording

PHASE 1: ESTABLISH | PHASE 2: OPERATE THE SYSTEM

3 Industry Education & Engagement

Ensure producers understand the system & see the benefits

- Clear communication
- Simple reporting tools
- Feedback & surveys

Producer participation is the key to success

4 Case Reporting & Investigation

Abnormalities first observed on farm

- Photos of affected calves
- Sire & dam information
- Description of signs

Reports flow to national repository for flagging

5 Research Discovery & Implementation

Investigate flagged cases & identify casual variants

- Genomic & sequencing analyses
- Partner review & agreement

Release results into PUBLIC DOMAIN

Implement in breeding infrastructure:

- Publication of findings
- SNP panels
- Gene & haplotype tests
- Routine screening

THE BENEFITS Why This Phase Matters

High engagement, high quality data

Early detection

Rapid, open adoption across industry

Roadmap to Success: National System for Genetic Abnormality Recording

PHASE 1: ESTABLISH | PHASE 2: OPERATE | PHASE 3: EXPAND AND COLLABORATE

6 Biobanking & Sample Infrastructure

Strengthen the biological foundation for discovery

- Routine tissue collection
- Standardized kits
- National biobank for long-term storage

Samples available for future analyses as technology evolves

7 International Collaboration & Global Surveillance

Work together across borders to protect global cattle populations

- Cross-country validation
- Share data & findings
- Use global resources (Interbull)
- Coordinate strategies

Ensure information from all sources integrates seamlessly

THE BENEFITS Why This Phase Matters

Global insight, coordinated action, better outcomes

Support long-term sustainability

Enables international collaboration

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Thank you!

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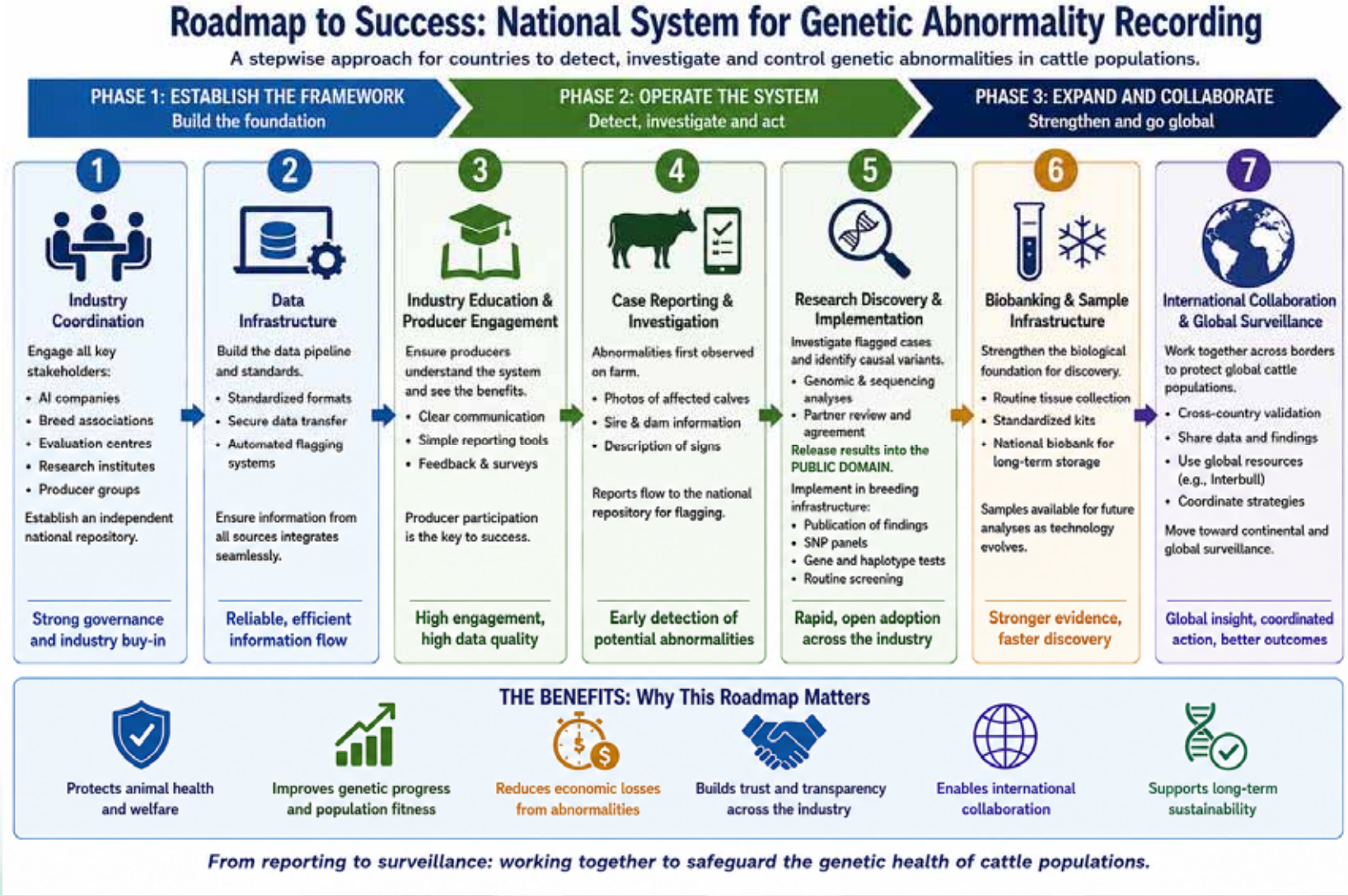
Roadmap to Success: National System for Genetic Abnormality Recording
A stepwise approach for countries to detect, investigate and control genetic abnormalities in cattle populations.
PHASE 1: ESTABLISH THE FRAMEWORK
Build the foundation
PHASE 2: OPERATE THE SYSTEM
Detect, investigate and act
PHASE 3: EXPAND AND COLLABORATE
Strengthen and go global
1
Industry Coordination
Engage all key stakeholders:
• AI companies
• Breed associations
• Evaluation centres
• Research institutes
• Producer groups
Establish an independent national repository.
Strong governance and industry buy-in
2
Data Infrastructure
Build the data pipeline and standards.
• Standardized formats
• Secure data transfer
• Automated flagging systems
Ensure information from all sources integrates seamlessly.
Reliable, efficient information flow
3
Industry Education & Producer Engagement
Ensure producers understand the system and see the benefits.
• Clear communication
• Simple reporting tools
• Feedback & surveys
Producer participation is the key to success.
High engagement, high data quality
4
Case Reporting & Investigation
Abnormalities first observed on farm.
• Photos of affected calves
• Sire & dam information
• Description of signs
Reports flow to the national repository for flagging.
Early detection of potential abnormalities
5
Research Discovery & Implementation
Investigate flagged cases and identify causal variants.
• Genomic & sequencing analyses
• Partner review and agreement
Release results into the PUBLIC DOMAIN.
Implement in breeding infrastructure:
• Publication of findings
• SNP panels
• Gene and haplotype tests
• Routine screening
Rapid, open adoption across the industry
6
Biobanking & Sample Infrastructure
Strengthen the biological foundation for discovery.
• Routine tissue collection
• Standardized kits
• National biobank for long-term storage
Samples available for future analyses as technology evolves.
Stronger evidence, faster discovery
7
International Collaboration & Global Surveillance
Work together across borders to protect global cattle populations.
• Cross-country validation
• Share data and findings
• Use global resources (e.g., Interbull)
• Coordinate strategies
Move toward continental and global surveillance.
Global insight, coordinated action, better outcomes
THE BENEFITS: Why This Roadmap Matters
Protects animal health and welfare
Improves genetic progress and population fitness
Reduces economic losses from abnormalities
Builds trust and transparency across the industry
Enables international collaboration
Supports long-term sustainability
From reporting to surveillance: working together to safeguard the genetic health of cattle populations.