HIJRI-ALIGNED QURBANI SHEEP-DAIRY FARMING

The Economy of the Qurbani Ritual and an Open Invitation to Research, Test and Improve a Proposed Livestock Production System

STATUS

Open Discussion Paper | Proposed experimental model | Not a validated production protocol

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Research → Open Discussion → Testing → Evidence → Improvement → Replication

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Publication and document status

This paper is issued for open expert discussion by Awqaf New Zealand. It presents a research problem, a proposed production-system architecture and a set of hypotheses to be tested. It does not present a validated agricultural, veterinary, commercial or Shariah production protocol.

OPEN WAQF KNOWLEDGE
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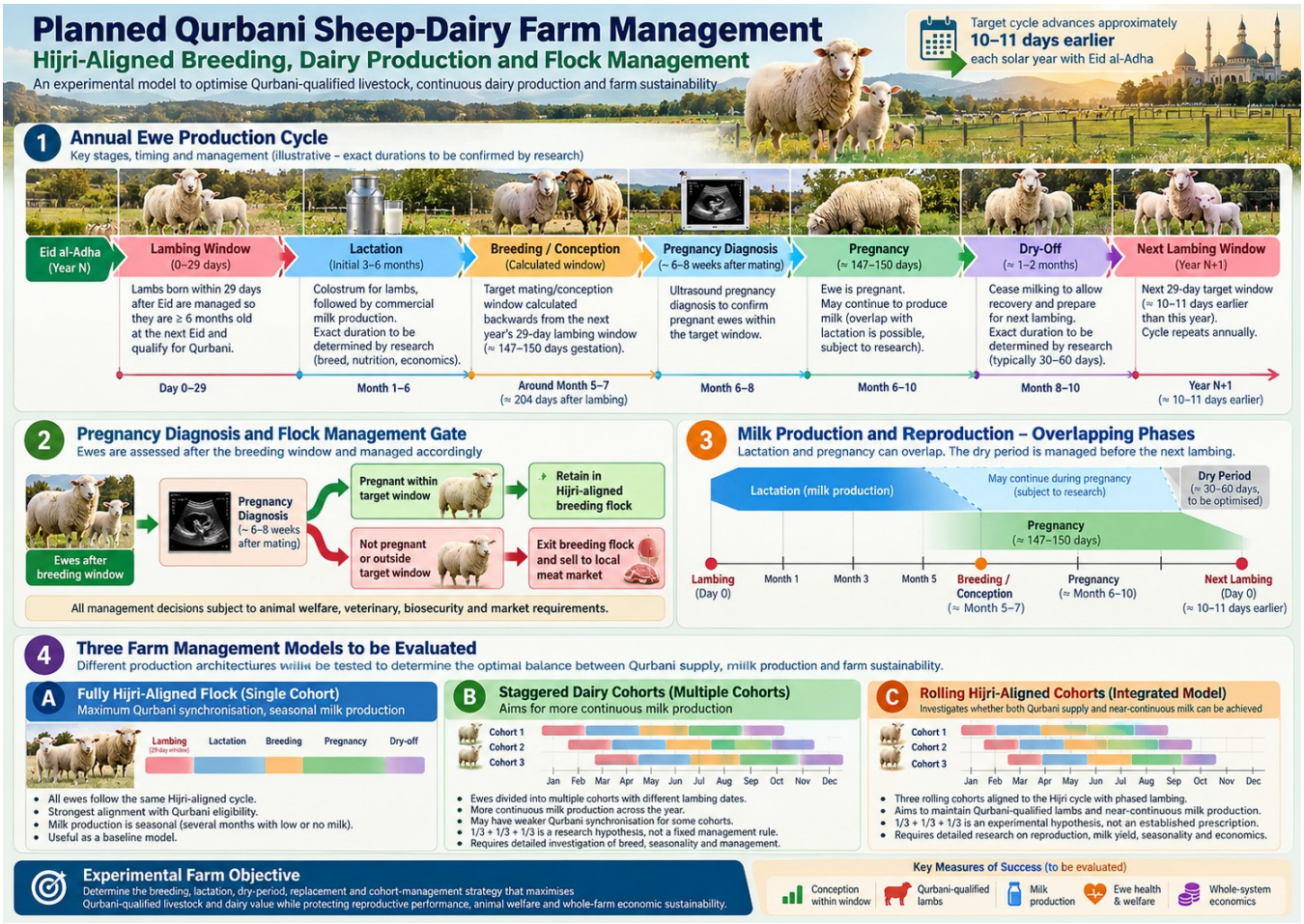

Executive Visual 3 | Planned Qurbani Sheep-Dairy Farm Management

This visual presents the refined experimental management logic: annual Hijri movement, target lambing window, calculated conception timing, pregnancy diagnosis, overlapping lactation and pregnancy, dry-off, flock-selection decisions and the three production architectures to be evaluated.

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Awqaf New Zealand

Sustainable Waqf for a Better World

Research the System. Develop the People. Improve Through Industry.

A Collaborative Approach to a Hijri-Aligned Sheep-Dairy and Qurbani System

Science • Skills • Real-World Experience • Sustainable Communities

Knowledge Today
Sustainable Impact Tomorrow

Open Research Collaboration

Universities & Research Centres

Research • Test • Validate

- **Animal science and reproduction** — Breeding, lambing and reproductive management aligned with the Hijri cycle
- **Breed and cross comparison** — Performance, productivity and resilience
- **Nutrition, health and welfare** — Feed systems, animal welfare and biosecurity
- **Dairy production and milk quality** — Milk yield, quality and processing potential
- **Agriculture 4.0 and data analysis** — Sensors, monitoring and data-driven insights
- **Environmental and economic analysis** — Whole-system sustainability and viability
- **Qurbani utilisation and measurement** — Meat, milk, wool, hide and other uses
- **Evidence-based guidelines** — Practical recommendations for replication

Awqaf New Zealand

Integrate • Coordinate • Apply • Measure • Replicate

Partnerships and collaboration | Governance and oversight | Ethical and Shariah alignment | International replication | Monitoring and impact

Research findings inform training and industry

Operational experience informs training and research

SKILLED PEOPLE STRENGTHEN FARM OPERATIONS

Trained people apply research and share practical insights from daily operations

Open Vocational Education and Training Collaboration

RTOs & Training Providers

Train • Assess • Credential

- **Livestock husbandry and animal care** — Practical skills in handling, welfare and daily care
- **Sheep dairy operations** — Milking, milk hygiene and quality management
- **Reproduction, lambing and flock management** — On-farm skills aligned with research findings
- **Agriculture 4.0 and digital skills** — Sensor use, data collection and farm systems
- **Workplace health, safety and biosecurity** — Safe and compliant farm operations
- **Data collection and record keeping** — Accurate and reliable data for research and industry
- **Farm operations, supervision and management** — From daily operations to farm management
- **Leadership and train-the-trainer** — Develop future leaders and mentors

Experimental Qurbani Sheep-Dairy Farm

A living environment for research, training and innovation

Production • Research • Vocational Training • Demonstration

Real data • Real skills • Real impact

Industry Partners

Apply • Observe • Challenge

- **Farmers and livestock producers** — Practical experience and operational insights
- **Processors and supply chain** — Carcass, meat, milk, wool, hide and by-product utilisation
- **Dairy industry expertise** — Market requirements and product development
- **Technology providers** — Sensors, AI, data platforms and digital solutions
- **Qurbani market and logistics** — Market demand, standards and seasonal planning
- **Regulators and standard bodies** — Animal welfare, food safety and market compliance

Enabling Technology and Data Infrastructure

Cloud and Digital Infrastructure	Agriculture 4.0 (IoT, Sensors, AI)	Data Management and Analytics	Traceability and Supply Chain	Decision Support and Knowledge Sharing
Secure, scalable and reliable systems	Real-time monitoring and decision support	Animal, production and supply chain data	From farm to market	Dashboards, reporting and insights

Key Research Questions

1. Can breeding and lambing be progressively realigned with the migrating Hijri calendar while maintaining animal welfare and productivity?
2. Can the dairy component improve whole-system economics between annual Qurbani cycles?
3. What breeds or crosses are most appropriate?
4. How should Qurbani utilisation be scientifically measured?
5. What data should an Agriculture 4.0 system collect from the first experimental flock?

Human Capital Pathway From Learner to Leader

Learner	Skilled Worker	Technician	Supervisor	Farm Manager	Leader	Trainer / Mentor
Foundational skills and practical training	On-farm competencies and certification	Specialised skills and digital capabilities	Team leadership and farm operations	Full farm management and business skills	Strategic and community leadership	Train the next generation and scale impact

Inclusive opportunities, including for women from disadvantaged communities regardless of faith, ethnicity or background

Implementation Roadmap

Pilot	Validate	Expand	Institutionalise
Design and establish the experimental farm	Test, measure and refine	Develop networks and deploy solutions	Local ownership and training

Implementation Roadmap

Pilot	Validate	Improve	Replicate	Local Adaptation	International Network
Design and establish the experimental farm	Test, measure and refine	Optimise the system and training	Adapt to new regions and contexts	Work with local partners and meet local needs	Enable replication across countries

Long-term strategic objective: enable a distributed network reaching 1,000,000 sheep-dairy livestock over 10–15 years.

A strategic objective, not a scientifically validated forecast. Research will determine what scale is achievable and under what economic, environmental, welfare, regulatory and Shariah constraints.

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Executive Visual 2 | Research & Capability Ecosystem

A one-page view of the proposed research, training, industry, technology and human-capital ecosystem surrounding the experimental farm.

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Sustainable Waqf for a Better World

A Hijri-Aligned Sheep-Dairy and Qurbani System
for Sustainable Food, Community Impact and Global Replication

Knowledge Today
Sustainable Impact Tomorrow

Food Security
Nutritious food and dairy products

Animal Welfare
High welfare standards

Zero Waste
Full utilisation of Qurbani resources

Community Impact
Jobs, skills and local development

Environmental Sustainability
Lower emissions, better land use

The Integrated Qurbani Sheep-Dairy System

Key Components

- **Breed selection and improvement**
  Performance, productivity and resilience
- **Nutrition and health management**
  Feed systems and animal welfare
- **Dairy production and milk quality**
  Milk yield, quality and processing potential
- **Agriculture 4.0 and data analysis**
  Sensors, monitoring and insights
- **Environmental and economic analysis**
  Whole-system sustainability and viability
- **Qurbani utilisation and measurement**
  Meat, milk, wool, hide and other uses
- **Evidence-based guidelines**
  Practical recommendations for replication

Intended Impact

- Greater food security and nutrition
- Higher animal welfare and productivity
- Zero waste Qurbani model
- Jobs and vocational training opportunities
- Stronger and more resilient communities
- Environmental sustainability
- Evidence-based model for global replication

Enabling Technology and Data Infrastructure

Cloud and Digital Infrastructure
Secure, scalable and reliable systems

Agriculture 4.0 (IoT, Sensors, AI)
Real-time monitoring and decision support

Data Management and Analytics
Animal, production and supply chain data

Traceability and Supply Chain
From farm to market

Decision Support and Knowledge Sharing
Dasboards, reporting and insights

Implementation and Replication Roadmap

1. **Pilot** — Design and establish the experimental farm
2. **Validate** — Test, measure and refine
3. **Improve** — Optimise the system and training
4. **Replicate** — Adapt to new regions and contexts
5. **Scale** — Enable replication across countries

Long-term strategic objective: enable a distributed network reaching 1,000,000 sheep-dairy livestock over 10–15 years.
A strategic objective, not a scientifically validated forecast. Research will determine what scale is achievable and under what economic, environmental, welfare, regulatory and Shariah constraints.

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Executive Visual 1 | The System

This high-level concept visual summarises the proposed system architecture for open research discussion.

The proposal in 60 seconds

For decision-makers who are scanning the paper first, the proposed system can be understood through six points:

10–11 days	Eid al-Adha moves approximately this much earlier through the solar calendar each year.
29 days	Current working target for the lambing window used in the proposed Qurbani-alignment model, subject to expert and Shariah review.
147–150 days	Approximate sheep gestation interval used to calculate the mating/conception window backwards from the target lambing period.
3 production architectures	Fully Hijri-aligned, staggered dairy cohorts, and rolling Hijri-aligned cohorts are proposed for comparison.
Agriculture 4.0 from the first animal	Digital identity, reproduction, welfare, milk, feed, environment and Qurbani-chain data are treated as research infrastructure.
Open research	The model is offered for challenge, testing and improvement. It is not presented as a validated production protocol.

These numbers are research framing devices. They do not replace breed-specific animal science, local regulation, animal-welfare requirements or Shariah review.

The following three visuals form the executive communication layer of this Discussion Paper. They are intended to let senior Awqaf officials, university management and other decision-makers understand the proposition quickly before moving into the detailed research discussion.

1. Open invitation

Awqaf New Zealand invites animal scientists, sheep-dairy specialists, veterinarians, agricultural economists, livestock producers, processors, supply-chain specialists, data scientists, Agriculture 4.0

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researchers, Waqf scholars and other relevant experts to examine and challenge the proposed Hijri-aligned Qurbani sheep-dairy system.

THE QUESTION IS NOT "IS THE MODEL RIGHT?"

The question is: What is biologically feasible, economically sustainable, operationally scalable, ethically responsible and scientifically measurable, and what must be changed before any replication is attempted?

What we invite reviewers to do

- Identify assumptions that are unsupported or unrealistic.
- Suggest better reproductive, dairy, welfare and flock-management strategies.
- Propose measurable variables, controls and experimental designs.
- Identify data gaps in the economy and utilisation of the Qurbani ritual.
- Challenge the proposed 29-day target lambing-window logic and the operational age assumptions.
- Recommend technologies and traceability methods that add real value rather than complexity.
- Identify legal, market, biosecurity, animal-welfare and Shariah questions requiring specialist review.

What Awqaf NZ is not claiming

Awqaf NZ is not claiming a world-first system, a proven production protocol, guaranteed economics, a validated one-million-livestock forecast, or universal Shariah agreement on every operational assumption. The purpose of this paper is to expose the model to scrutiny before it is treated as a replicable system.

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2. The Economy of the Qurbani Ritual

Qurbani is often observed at the point of slaughter, but economically it begins much earlier and continues after slaughter. Livestock genetics, breeding, feed, veterinary care, labour, transport, markets, inspection, slaughter, cold-chain logistics, distribution, hides, wool, offal, organic resources, data and traceability can all form part of the wider system.

Qurbani is a production, logistics, processing and resource-utilisation economy, not only a slaughter event.

CORE PROPOSITION

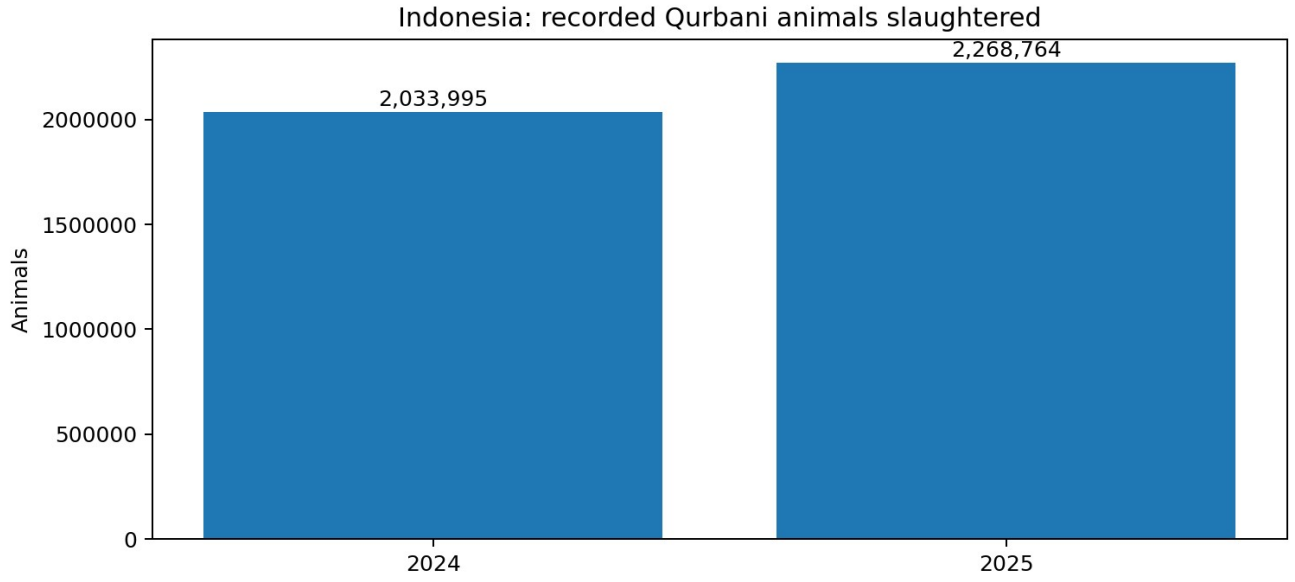
The economic unit of analysis should not be only the sacrificial animal on Eid day. It should include the full production and utilisation chain, while avoiding double counting and distinguishing market value, social value and environmental value.

A measurement problem

There is no single sufficiently robust global figure in this draft for the total economic value of Qurbani. Rather than repeat a commercial market estimate without a transparent methodology, this Discussion Paper proposes building the evidence from verifiable national counts, livestock values, processing and logistics, and measurable post-slaughter utilisation.

3. Qurbani at scale: Indonesia

Indonesia provides one of the strongest examples of national-scale Qurbani activity. Indonesia's Ministry of Agriculture reported 2,268,764 Qurbani animals slaughtered in 2025, compared with 2,033,995 in 2024, an increase of 11.5%.



Official Indonesian Ministry of Agriculture figures. 2025 was reported as 11.5% above 2024.

Metric	2024	2025
Recorded Qurbani animals	2,033,995	2,268,764
Absolute increase	-	234,769
Reported growth	-	11.5%

Source: Ministry of Agriculture, Republic of Indonesia, national iSIKHNAS reporting. A separate 2026 ministry page reports the same 2025 total but cites a different 2024 comparator in one passage; this draft therefore uses the ministry's national 2025 announcement reporting 2,033,995 for 2024 and 11.5% growth, and flags the discrepancy for final source reconciliation.

WHY THIS MATTERS

A system involving more than two million animals in one country creates measurable demand for livestock production, animal health, inspection, slaughter capacity, labour, transport, distribution and resource utilisation.

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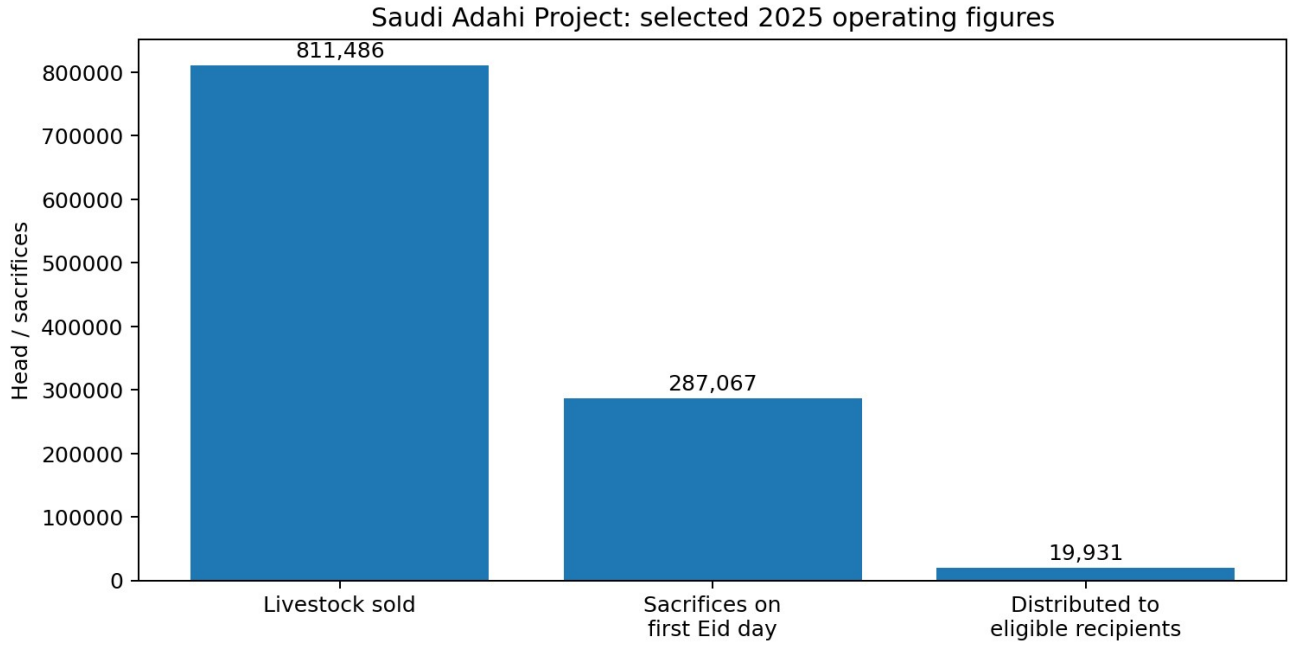
4. Qurbani at scale: Saudi Adahi operations

Saudi Arabia's Adahi project illustrates the concentrated logistics required around Hajj and Eid. Saudi Press Agency reported that on the first day of Eid al-Adha in 2025 the project carried out 287,067 sacrifices, sold more than 811,486 head of livestock and distributed 19,931 sacrifices to eligible recipients.



OPERATIONAL INTENSITY

The Arabic SPA report also stated a sales rate of 379 head per minute. This is not a measure of the global Qurbani market, but it illustrates the scale and time compression that organised sacrificial-livestock systems can face.

Research opportunity

The economic research programme should compare decentralised community Qurbani systems, national livestock markets, charitable distribution systems and highly concentrated Hajj-linked operations. They are not economically identical, but together they demonstrate why Qurbani deserves treatment as a livestock and supply-chain research field.

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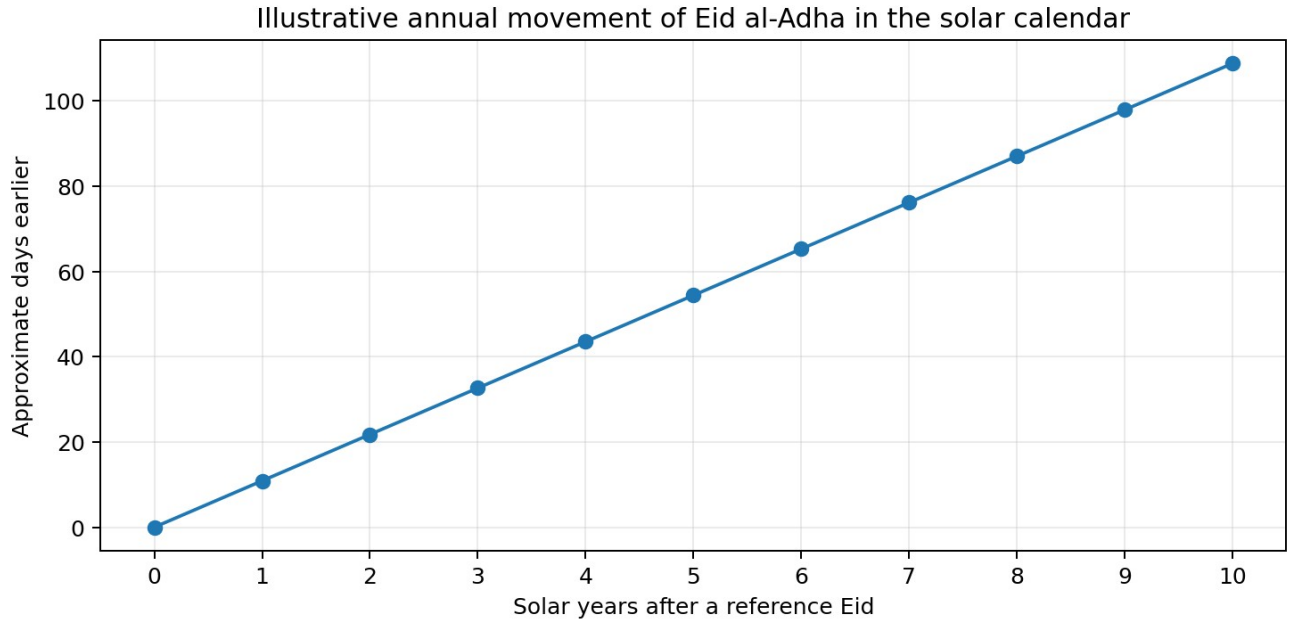
5. The moving target: Eid and the solar production year

Eid al-Adha follows the Hijri calendar and therefore moves approximately 10 to 11 days earlier through the solar calendar each year. For livestock systems governed by solar seasons, pasture growth, climate, reproductive biology and processor schedules, this creates a moving production target.



Illustrative at ~10–11 days earlier per solar year; actual Gregorian dates depend on the Hijri calendar and local determination.

RESEARCH PROBLEM

Can breeding, lambing, lactation, growth and flock replacement be progressively managed around an annually advancing Qurbani target without compromising animal welfare, reproductive performance, milk economics or farm resilience?

Why a static annual calendar is insufficient

A production system designed around one Gregorian month will gradually become misaligned with Eid. The proposed system therefore treats the expected Eid date as an input to annual planning, then works backwards through the required lamb age, target lambing window, gestation and mating window.

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6. Proposed breeding-cycle architecture

The current Awqaf NZ working model uses a 29-day target lambing window for lambs intended to meet the project's working Qurbani-age requirement at the following Eid. The 29-day interval is a research design assumption derived from the project's working age interpretation and annual Hijri timing logic. It is not a biological constant or a universal religious ruling and requires expert and Shariah review.

Eid target	Work backwards	29-day lambing window	~147–150 d gestation	Calculated mating window	Pregnancy diagnosis
Moving Hijri date	Age/condition target	Concentrated births	Biological interval	Window advances annually	Selection gate

Pregnancy and flock-management gate

Ewes diagnosed pregnant within the target window remain in the Hijri-aligned breeding flock. Ewes that do not become pregnant within the defined window, or fall outside the target reproductive window, are proposed to exit the aligned breeding programme and ordinarily enter the local meat market, subject to animal-welfare, veterinary, biosecurity and market requirements.

IMPORTANT

This is a proposed experimental management rule. It must be tested against reproductive biology, genetic progress, replacement cost, welfare, market value and whole-farm economics before it can be recommended.

7. Dairy production and reproduction must be modelled together

The system should not be represented as a simple sequence of 'milk first, pregnancy later'. Lactation and pregnancy can overlap. The research task is to determine when mating should occur, how long milking should continue, and what dry period is appropriate before the next lambing event for the breeds and production environment being tested.

Variable	Why it matters	Status
Lactation length	Milk revenue, ewe condition, labour	Experimental variable
Dry period	Udder recovery and next lambing preparation	Experimental variable
Mating while lactating	Potential continuity of milk versus reproductive pressure	To be tested
Body condition	Links nutrition, welfare and conception	Measure continuously

KEY RESEARCH QUESTION

What lactation and dry-period strategy maximises whole-system milk value while maintaining conception within the annually advancing Hijri breeding window, ewe body condition, welfare and subsequent lambing performance?

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8. Three production architectures to test

Model	Core idea	Potential advantage	Primary research risk
A. Fully Hijri-aligned	Most/all breeding follows the advancing target window	Strong Qurbani synchronisation	Seasonal or interrupted milk supply
B. Staggered dairy cohorts	Cohorts reproduce at different times	More continuous milk	Some lambs may be poorly timed for Qurbani
C. Rolling Hijri-aligned cohorts	Cohorts are staggered but progressively re-aligned	Potential balance of milk and Qurbani supply	Biological and operational feasibility unknown

The 'one-third' concept

A 1/3 + 1/3 + 1/3 cohort split may be useful as an initial experimental hypothesis, but it should not be treated as a fixed flock rule. Alternative splits, including dynamic allocation based on milk demand, conception performance, feed supply and Qurbani requirements, may prove superior.

COMPARATIVE EXPERIMENT

Compare Qurbani-qualified lamb output, milk litres, conception within window, ewe welfare/body condition, feed cost, labour, replacement rate, processor demand and total economic return across the three architectures.

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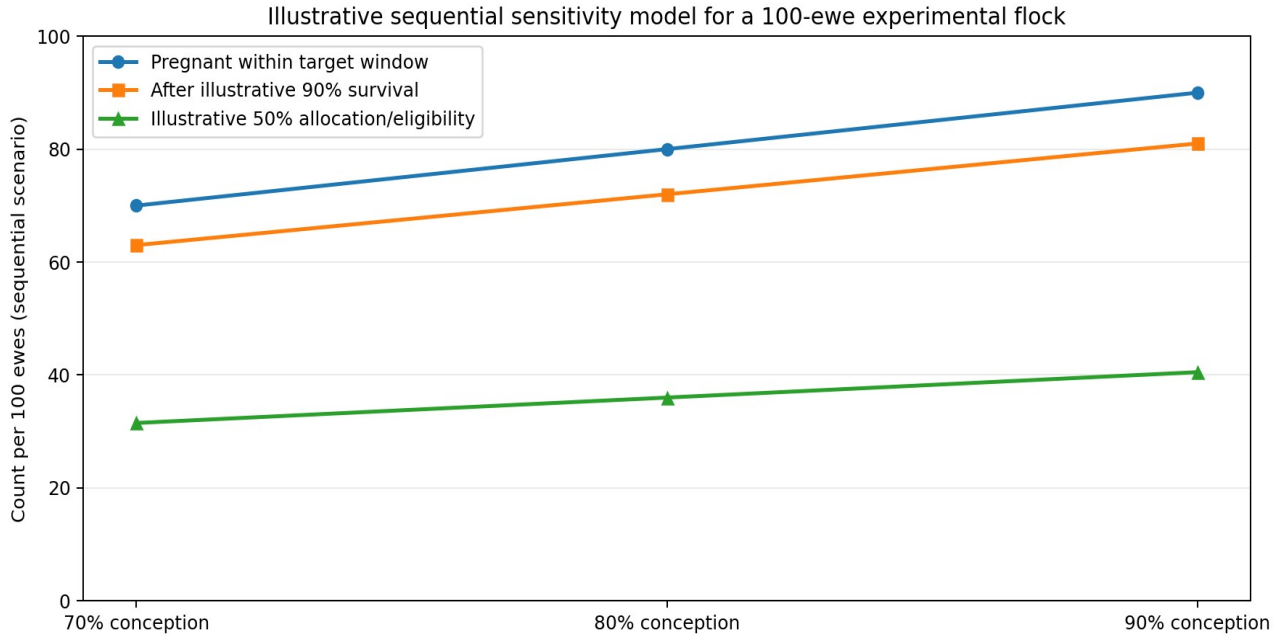
9. From concept to numbers: a 100-ewe sensitivity model

Before field data exist, scenario modelling can show which assumptions matter most. The following chart is deliberately illustrative. It is not a forecast and not a result from an Awqaf NZ farm.



For illustration only, the chart starts with 100 ewes and compares 70%, 80% and 90% conception within the target window. It then applies a 90% survival assumption and a 50% illustrative allocation/eligibility share. The stages are sequential, not additive. Real flock performance may differ materially because prolificacy, lamb survival, sex ratio, breed, nutrition, climate, replacement policy, health and Qurbani eligibility rules all affect output.

Sensitivity variables to model

- Conception within target window: 60–95% scenarios
- Lambs born per ewe lambing: breed-specific scenarios
- Pre-Qurbani survival rate
- Male/female and replacement allocation
- Milk yield and milk price
- Feed cost per ewe and per litre
- Exit value of open/out-of-window ewes
- Slaughter, transport, processing and cold-chain cost
- Value recovered from hides, wool, offal and other usable resources

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10. Agriculture 4.0: measure from the first animal

The experimental farm should be designed as a measurement environment from the outset. Data collection should be purposeful: every field should support a biological, welfare, economic, traceability or research question.

Data layer	Examples	Research value
Animal identity	Digital ID, parentage, breed/cross	Traceability and genetic analysis
Reproduction	Mating, conception, scanning, lambing	Window alignment
Health & welfare	Weight, body condition, treatment, mortality	Welfare and performance
Dairy	Yield, composition, lactation curve	Milk economics
Feed & environment	Pasture, ration, weather, heat	Resource efficiency
Qurbani chain	Eligibility, transport, slaughter, utilisation	Supply-chain measurement

FUTURE DECISION-SUPPORT QUESTION

For this breed, latitude, pasture system and expected Eid date, what mating window maximises the probability of Qurbani eligibility and target condition while preserving milk economics and animal welfare?

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11. Measuring the whole-system economics

A credible Qurbani-economy model must avoid adding unrelated gross values together. It should distinguish cash revenue, avoided cost, resource recovery, social distribution, environmental outcomes and non-market benefits.

Economic layer	Possible measures	Unit	Caution
Livestock production	Qualified lambs, exit ewes, replacements	head / $	Avoid double counting
Dairy	Milk, cheese/yoghurt where applicable	L / kg / $	Processor and market assumptions
Feed & land	Pasture, purchased feed, irrigation	kg DM / ha / $	Location dependent
Animal health	Veterinary, mortality, welfare indicators	$ / rates	Welfare is not reducible to price
Qurbani logistics	Transport, slaughter, cold chain	$/head	Peak-capacity effects
Resource utilisation	Hides, wool, offal, organics	kg / $ / utilisation %	Marketability varies

Proposed Qurbani Utilisation measurement

The research programme should measure not only whether material is 'used' but how it is used, for whom, at what cost, with what welfare safeguards and with what environmental and economic consequences. This supports a more rigorous utilisation framework than a simple zero-waste slogan.

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12. Research agenda

1. Can breeding and lambing progressively realign with the migrating Hijri calendar while maintaining reproductive performance and animal welfare?

2. Is the proposed 29-day target lambing window biologically and operationally practical, and how should it be defined under the relevant Qurbani eligibility interpretation?

3. What breeds or crosses are most suitable for combined dairy, Qurbani, climate and welfare objectives?

4. Can dairy improve whole-system economics between Qurbani cycles without undermining conception, body condition or lamb performance?

5. Which production architecture produces the best balance between Qurbani-qualified livestock and commercially useful milk supply?

6. What is the optimal lactation and dry-period strategy for the selected production system?

7. How should open or out-of-window ewes be managed economically and ethically?

8. What data should Agriculture 4.0 collect from the first experimental flock?

9. How should the utilisation of Qurbani resources be measured scientifically across meat, hides, wool, offal and organic resources?

10. What is the measurable economy of the Qurbani ritual at farm, processor, community, national and international levels?

11. Which variables determine whether a validated system can be replicated in Australia, New Zealand, Canada or other suitable jurisdictions?

12. What governance, traceability, legal, biosecurity and Shariah controls are required before replication?

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13. Research, capability and application ecosystem

Awqaf NZ proposes a collaborative architecture in which scientific conclusions remain independent of operational preferences. Universities research and validate; vocational institutions train and credential; industry applies and challenges; Awqaf NZ integrates, coordinates, measures and develops replication pathways.

Participant	Primary contribution	Boundary
Research institutions	Research, testing, validation	Scientific conclusions remain independent
VET / training partners	Practical skills, assessment, credentials	Training does not substitute for research
Industry	Application, observation, operational feedback	Feedback informs but does not determine science
Awqaf New Zealand	Integration, coordination, application, measurement, replication	Does not claim specialist authority outside its competence

REPLICATE, DON'T DUPLICATE

Standardise what should be common. Localise what must be local. Replicate the system, adapt the farm, and localise legal responsibility.

Human-capital pathway

Community entry → vocational training → practical farm experience → paid employment → Agriculture 4.0 capability → supervision → farm management → governance & innovation → senior leadership → training the next generation.

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14. How to contribute to the open discussion

Awqaf New Zealand welcomes evidence-based critique, alternative models, relevant datasets, case studies, published research, practical farm experience and proposals for collaborative testing.

Suggested response format

1. Which claim, assumption or research question are you addressing?
2. Is your comment based on published evidence, field experience, modelling, Shariah analysis, regulation or another source?
3. What change do you recommend?
4. How could the proposed change be tested or measured?
5. Does it materially change the experimental design or only improve wording/presentation?

OPEN REVIEW PRINCIPLE

We do not use discussion to prove the model. We use discussion to test the model.

Contact and publication

Website: www.awqafnz.org

Awqaf New Zealand will maintain the public Discussion Paper as a version-controlled research publication. Material changes should be documented rather than silently replacing earlier propositions.

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Source-status convention used in this edition

Verified external data	Government, peer-reviewed or otherwise traceable source.
Awqaf NZ historical experience	First-hand organisational history or archival evidence.
Calculated scenario	Transparent arithmetic based on stated assumptions.
Research hypothesis	Proposition requiring testing.
Experimental variable	Parameter deliberately left open for field research.
Working Shariah assumption	Operational assumption requiring appropriate scholarly review.

15. Compliance-by-Design Framework

Compliance is treated as part of system design, not as a final administrative check. The proposed model is intended to be researched, designed, tested and, if validated, implemented in accordance with the laws, regulations, standards and institutional requirements applicable in each jurisdiction of operation.

No assumption of regulatory equivalence is made between Australia, New Zealand, Canada, France or any future jurisdiction. Before field implementation or replication, the relevant local requirements must be identified, reviewed and assigned to the responsible local entity.

15.1 Compliance areas to be reviewed

Animal welfare, veterinary and biosecurity: breeding, husbandry, transport, animal health, disease control, identification, movement and welfare requirements.

Food, dairy and slaughter regulation: milk production and processing, food safety, abattoir requirements, Qurbani operations, refrigeration, distribution, by-products and traceability.

Research and institutional governance: research ethics where applicable, institutional approvals, experimental protocols, data quality, scientific independence and conflicts of interest.

Environment and workplace requirements: land, water, waste and resource utilisation, environmental approvals, occupational health and safety, employment and training obligations.

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Privacy, data protection and cybersecurity: personal information relating to workers, researchers, learners, customers or other participants, access controls, cloud services, retention, security and cross-border data issues where applicable.

Intellectual property and third-party rights: logos, trademarks, photographs, research outputs, licences, software, data rights, attribution and collaboration agreements.

Nonprofit, advertising and communications: charitable-purpose requirements, public claims, advertising, digital campaigns and applicable programme-specific conditions.

Shariah review where applicable: Qurbani eligibility and practice, Waqf structures and any future Islamic financial or charitable arrangements.

15.2 Google for Nonprofits and digital infrastructure

Awqaf New Zealand's participation in Google for Nonprofits is separate from the scientific and institutional architecture of this Discussion Paper. The paper does not represent Google as a sponsor, research partner, institutional endorser or provider of the proposed farm system.

Public project architecture therefore uses the generic description “Cloud & Digital Infrastructure”. Any future reference to a specific Google product should be made only where that product has actually been activated for Awqaf New Zealand and after the applicable product-specific terms, branding rules and usage conditions have been checked.

Where Google Ad Grants or another Google for Nonprofits product is used to communicate this work, the relevant programme and product-specific requirements should be reviewed at the time of use. This includes maintaining accurate nonprofit information, non-discriminatory administration of programmes and services, mission-relevant communications, and any applicable website, advertising and product policies.

15.3 Agriculture 4.0 data governance

Agriculture 4.0 is a core research layer of the proposed system. From the first experimental animals, the project may collect structured data relating to digital animal identity, genetics and parentage, mating and pregnancy, lambing, milk yield and composition, feed and pasture, weight and body condition, health and welfare, environment, Qurbani eligibility, processing and traceability.

Animal-production data should be governed as research and operational data. Where systems also contain personal information about workers, researchers, learners, customers or other participants, appropriate privacy, access-control, cybersecurity, retention, consent or other lawful-processing requirements should be assessed under the law applicable to the relevant jurisdiction.

AI-assisted analysis and decision-support tools should support, rather than replace, qualified human judgement, veterinary and animal-welfare oversight, scientific review, regulatory responsibility and Shariah review where applicable.

15.4 Compliance pathway

Concept → Research → Design → Scientific verification → Animal welfare & biosecurity review → Legal/regulatory review → Data, privacy & cybersecurity review → Third-party/IP review →

Institutional and Shariah review where applicable → Experimental approval → Field testing → Measurement → Independent evaluation → Replication review

15.5 Status of this compliance review

This Discussion Paper is an exploratory research-scoping publication, not a legal, regulatory, veterinary, financial, investment or Shariah opinion. The compliance framework identifies material areas requiring review; it does not certify compliance with every law, regulation, programme term or standard in every jurisdiction. Applicable requirements must be verified by the relevant institution, regulator or appropriately qualified adviser before implementation. Google for Nonprofits and other digital-product terms should be rechecked at the time of use.

Document status and disclaimer

This document is an exploratory concept and research-scoping paper prepared by Awqaf New Zealand for open discussion. Generic references to universities, research centres, vocational institutions, industry and technology providers describe possible categories of collaboration and do not constitute endorsement, sponsorship, a joint venture, formal partnership or other binding agreement with any particular organisation unless separately confirmed in writing.

The research questions, proposed production model, implementation pathways and strategic objectives described in this document are Awqaf New Zealand proposals subject to independent scientific testing, feasibility assessment, animal-welfare requirements, regulatory and legal review, institutional approval and, where applicable, Shariah review. Nothing in this document constitutes agricultural, veterinary, legal, financial, investment or Shariah advice.