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DOWNSTREAMING OF IMPACT-ORIENTED AND ECO-FRIENDLY QURBAN MANAGEMENT AT UNIVERSITAS NUSA CENDANA

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***Abstract**. Qurban management is generally focused on animal slaughtering and meat distribution, while donor governance, animal welfare, sanitation, waste management, post-slaughter handling, packaging, and targeted distribution are not always managed in an integrated manner. This community service program aimed to develop and implement an impact-oriented and eco-friendly upstream-to-downstream-building management model at Universitas Nusa Cendana. The program adopted a participatory and collaborative approach through six interrelated stages: donor management, animal procurement and health inspection, pre-slaughter animal care, sharia-compliant and eco-friendly slaughtering, post-slaughter processing and packaging, and information system-based distribution. The program involved 28 shohibul qurban, who collectively contributed four cattle, complemented by four additional cattle from institutional donors and the Rector of UNDANA, resulting in eight cattle. The program integrated animal health examinations, animal-welfare practices, sanitation, waste management, cold-chain handling, vacuum packaging, and beneficiary verification throughout. The program prepared and distributed approximately 600 meat packages to 570 economically vulnerable beneficiaries within the university community, including students, educational support staff, security personnel, cleaning service workers, and drivers. The information system supported beneficiary verification, distribution tracking, transparency, and accountability. The program demonstrates that qurban management can be developed beyond seasonal charitable distribution into a more professional, inclusive, data-driven, and environmentally responsible model. Although nutritional outcomes were not directly measured, the distribution of animal-source protein has the potential to support household nutritional adequacy, food security, and broader stunting-prevention efforts.*

***Keywords:** downstreaming, information system-based distribution, qurban management, waste management*

Abstrak. Pelaksanaan qurban umumnya berfokus pada penyembelihan dan distribusi daging, sedangkan administrasi donatur, kesejahteraan hewan, pengelolaan limbah penyembelihan, pengemasan daging, dan pendataan penerima belum selalu terintegrasi. Kegiatan pengabdian kepada masyarakat ini bertujuan mengembangkan dan menerapkan model pengelolaan qurban terintegrasi dari hulu hingga hilir di Universitas Nusa Cendana, Kupang, Nusa Tenggara Timur. Program menggunakan pendekatan partisipatif dan kolaboratif melalui enam tahap, yaitu koordinasi donatur; pengadaan dan pemeriksaan kesehatan hewan; perawatan prapenyembelihan; penyembelihan sesuai syariat Islam dan penanganan limbah; pengolahan dan pengemasan daging secara higienis; serta distribusi berbasis sistem informasi. Hasil kegiatan dievaluasi secara deskriptif berdasarkan dokumen administrasi, kesehatan hewan, pengemasan, dan distribusi. Sebanyak 28 shohibul qurban menyumbangkan empat ekor sapi secara kolektif, sedangkan lembaga mitra dan Rektor UNDANA menyumbangkan empat ekor sapi tambahan. Seluruh delapan sapi menjalani pemeriksaan ante-mortem dan dilengkapi Surat Keterangan Kesehatan Hewan (SKKH). Pelaksanaan meliputi perawatan hewan yang mendukung kesejahteraan, pemilahan limbah, pembagian porsi daging, pengemasan vakum, penyimpanan dingin, dan pendokumentasian verifikasi penerima. Sekitar 600 paket daging didistribusikan kepada 570 penerima terdaftar, terutama mahasiswa dan tenaga pendukung universitas yang mengalami kerentanan ekonomi. Program menghasilkan kerangka operasional yang mengintegrasikan prinsip syariah, pertimbangan lingkungan, penanganan daging terstandardisasi, dan distribusi inklusif untuk memfasilitasi akses pangan sumber protein hewani. Namun, dampak terhadap status gizi, ketahanan pangan rumah tangga, kinerja lingkungan, dan ketepatan distribusi belum dievaluasi secara kuantitatif. Pelaksanaan berikutnya memerlukan pemantauan dan evaluasi sistematis untuk mengukur hasil jangka panjang dan potensi replikasi model.

Kata Kunci: distribusi berbasis sistem informasi, hilirisasi, pengelolaan limbah, pengelolaan qurban

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INTRODUCTION

Qurban is one of the annual religious practices observed by Muslims, involving the slaughter of livestock and the provision of meat as a highly nutritious food source (Naipospos & Pane, 2025). In addition to its religious and social dimensions, qurban has the potential to expand community access to animal-source protein, particularly when its management and distribution are planned and appropriately targeted (Cahyani, Wirawan, & Rahmawati, 2026; Kania, Pratiwi, & Rajab, 2026; Marlina, Isran Bidin, Zul Azmi, Adriyanti Agustina Putri, & Rama Gita Suci, 2019). However, qurban management practices in many settings still tend to focus primarily on slaughtering and meat distribution, while aspects such as donor management, animal welfare, sanitation, waste management, post-slaughter handling, packaging, and distribution accuracy are not always managed in an integrated and standardized manner (Hayati, Budiman, Wijaya, & Masuwd, 2024; Md Salleh, Kedin, Sulaiman, & Mahat, 2023; Wibowo, 2020). Such conditions may limit the optimization of the social, nutritional, and environmental benefits that qurban activities can potentially provide.

The issue of access to nutritious food is particularly relevant in the context of East Nusa Tenggara (NTT). Based on the data, the prevalence of stunting in NTT remains high compared with the national average (Picauly et al., 2024; Suratri et al., 2023). Stunting is a multidimensional problem that cannot be addressed through a single intervention; nevertheless, adequate consumption of nutritious food, including animal-source protein, is an important component of stunting prevention efforts (Iswara & Syafiq, 2024; Sholikhah & Dewi, 2022; Usrotussachiyah, Sari, & Ratnasari, 2022). In this context, the distribution of qurban meat to vulnerable groups can be regarded as one form of support for improving access to animal-source protein. Although qurban meat distribution cannot be directly claimed to reduce stunting prevalence without measurements of nutritional status, better-targeted qurban management has the potential to support household nutritional adequacy and broader food-security efforts (Matnin, 2026; Sudarto, 2025) .

At Universitas Nusa Cendana, qurban activities also require further development toward a more organized upstream-to-downstream management system. Based on the initial identification conducted with the partner organization, several aspects required strengthening, including the management and registration of shohibul qurban (qurban donors), the selection and care of animals prior to slaughter (Harun, 2023), the application of animal-welfare and sanitation principles (Jati, Hidayat, & Habiyah, 2023; Susanti & Lestari, 2025), slaughter-waste management (Widayati et al., 2021), post-slaughter meat handling and packaging (Purnawati et al., 2026), and more targeted distribution to beneficiaries (Abubakar, Fitri, & Hidayati, 2026). Distribution that is not yet fully data-driven may also create limitations in beneficiary verification, distribution documentation, and program accountability. These issues indicate that qurban management requires an approach that extends beyond the slaughtering process and encompasses the entire management chain.

Accordingly, this program developed a downstreaming approach to qurban management, in which qurban activities were managed in an integrated manner from donor registration, animal procurement and health inspection, pre-slaughter care, slaughtering in accordance with Islamic principles and animal-welfare standards, post-slaughter handling, packaging, to data-based distribution (Hayati et al., 2024; Widayati et al., 2021). In this program, downstreaming was not understood merely as a process of creating commercial products, but rather as an effort to enhance the value and benefits of qurban meat through management that is more hygienic, standardized, environmentally responsible, measurable, and appropriately targeted (Hayati et al., 2024). The application of packaging techniques, cold-chain management, waste handling, and information-system support formed part of the efforts to maintain product quality while improving the efficiency and accountability of distribution.

Universitas Nusa Cendana has considerable potential to implement this approach because it is supported by multidisciplinary human resources, student organizations, professional personnel, and partner networks. Collaboration among the Islamic Student Spiritual Activity Unit, lecturers, staff members, animal-health personnel, volunteers, donors, and participants from

diverse groups enables qurban activities to function not only as an annual religious practice, but also as a model of social governance that integrates Islamic principles, environmental considerations, food safety, inclusivity, and information technology. In this program, the concept of "impact-oriented qurban" was adopted in line with the spirit of UNDANA Berdampak (UNDANA for Impact), which emphasizes community service activities that go beyond event implementation and are directed toward generating tangible benefits through more professional, environmentally responsible, inclusive, and data-driven management, while expanding vulnerable groups' access to animal-source protein.

Based on these issues, this community service program aimed to develop and implement an integrated upstream-to-downstream qurban management model at Universitas Nusa Cendana through strengthening donor management and animal procurement; applying Islamic principles, animal-welfare standards, sanitation, and waste-management practices; improving hygienic meat handling, packaging, and storage; and developing data-based distribution for vulnerable groups within the university community. Through this approach, the program was expected to improve the accuracy and accountability of qurban management, expand vulnerable groups' access to animal-source protein, and establish a foundation for a qurban.

METHODS

The Community Service Program was implemented as part of the Eid al-Adha 1447 H activities at Universitas Nusa Cendana (UNDANA), Kupang, East Nusa Tenggara. The primary partner was the UNDANA Islamic Student Spiritual Activity Unit, supported by a community of Muslim lecturers and staff, as well as by the involvement of multidisciplinary experts from within the university. Their involvement was adjusted to the competencies required at each stage of the program, including animal health, animal husbandry, environmental management, food technology, public health, social sciences, and information systems. The target beneficiaries were members of the university community who were categorized as economically vulnerable, including students, educational support staff, security personnel, cleaning service workers, and drivers. The program adopted a participatory and collaborative approach through an integrated upstream-to-downstream qurban management system. Partners were not merely positioned as program recipients but were actively involved in coordination, implementation, data collection, animal management, slaughtering, packaging, and distribution. This approach was developed based on six main principles: compliance with Islamic principles, animal welfare, environmental responsibility, professionalism, inclusivity, and the use of information systems to support transparency and accurate distribution.

Stages of Program Implementation

The program was implemented through six interrelated stages, namely coordination and management of shohibul qurban, animal procurement and health inspection, pre-slaughter animal care, slaughtering in accordance with Islamic principles and environmental management practices, post-slaughter processing and packaging, and data-based distribution. A summary of the stages, main activities, approaches, and expected outputs is presented in Table 1.

Table 1. *Stages, approaches, and outputs of the program*

Stage	Main Activities	Standards/Approaches	Outputs
Donor Management	Registration of *shohibul qurban*, fund management, and digital certificates	Validity of intention and group contributions; financial transparency	Donor database; financial report
Animal Procurement	Selection and health inspection of animals (*ante-mortem*)	Islamic criteria (age and absence of disqualifying defects); ASUH (Aman, Sehat, Utuh, dan Halal; Safe, Healthy, Wholesome, and Halal) principles;	Eligible animals; SKKH documents

Stage	Main Activities	Standards/Approaches	Outputs
		Animal Health Certificate (SKKH)	
Animal Care	Temporary housing, provision of feed and water, and humane handling	Animal welfare principles (*ihsan*)	Healthy animals with reduced stress; manure compost
Slaughtering	Sharia-compliant slaughtering, sanitation, and waste management	MUI Fatwa No. 12/2009; SNI 99003:2018; Minister of Agriculture Regulation No. 114/2014	ASUH-compliant meat; properly managed waste
Processing	Hygienic cutting, eco-friendly packaging, and preservation	Cold-chain management; reduced-plastic packaging	Standardized meat packages with improved storage stability
Distribution	Beneficiary verification, scheduling, tracking, and proof of receipt	Information system; inclusivity; targeted distribution	Beneficiaries served; database and dashboard

The first stage involved the coordination and management of shohibul qurban. At this stage, activities included outreach, registration of prospective shohibul qurban, recording of donor identities and qurban intentions, management of group contribution arrangements, and systematic financial recording. The collected data served as the administrative basis for the program and supported transparency in qurban management. Proof of participation or qurban certificates were also prepared in digital form as part of the documentation provided to the shohibul qurban (Andika & Haryono, 2022; Ruhyana et al., 2025).

The second stage involved the procurement and health inspection of qurban animals (Handoko, Sasongko, Taufiq, & Febriyani, 2024). Animals were selected based on Islamic requirements, particularly about species, age, physical condition, and the absence of defects that could affect their eligibility for qurban. Health inspections were conducted ante-mortem by competent personnel to ensure the animals were in appropriate health prior to slaughter (Tangkonda, Amtiran, Sidabutar, & Firmanto, 2023). Animal procurement was also directed toward traceable sources and, where possible, local livestock farmers. Animal health documentation formed part of the quality-control process at this stage.

The third stage involved pre-slaughter animal care (Tsalitsah, 2022). The animals were housed in holding areas with adequate air circulation, protection from excessive heat exposure, and sufficient access to feed and drinking water. Handling practices were designed to minimize actions that could cause stress or suffering to the animals. Manure generated during the holding period was collected and directed for further use as organic material, thereby addressing animal-welfare considerations while also reducing the direct disposal of waste into the environment.

The fourth stage involved slaughtering in accordance with Islamic principles, hygiene requirements, and environmental management practices (Suryanto, 2025). Slaughtering was carried out by competent slaughter personnel using appropriate and sharp equipment and in accordance with halal slaughtering requirements. The slaughtering area was arranged by separating clean and unclean zones to reduce the risk of contamination. Clean water, personal protective equipment, and sanitation facilities were provided throughout the process. Slaughter waste, including blood, rumen contents, and other organic residues, was handled separately to prevent direct contamination of soil and water sources, while materials that could still be utilized were directed toward further use in accordance with applicable provisions.

The fifth stage involved post-slaughter processing and packaging (Abubakar et al., 2026). The slaughtered meat was handled in a clean area, cut, weighed, and prepared into more standardized packages. Handling procedures emphasized hygiene and temperature control to help maintain meat quality. Some of the meat was vacuum-packed and refrigerated to support storage stability and distribution. Packaging materials suitable for food use were prioritized,

while the use of single-use plastics was minimized as far as practicable. Basic information, such as package weight and packing time, was included to support product traceability.

The sixth stage involved data-based distribution (Ruhyana et al., 2025). Beneficiary data were recorded using an information-system instrument containing beneficiary identity, category of need, distribution schedule, and proof of receipt. The data was used to support verification and reduce the possibility of duplicate beneficiaries. Distribution was prioritized for economically vulnerable groups within the university community and was implemented inclusively without restricting beneficiaries based on their backgrounds. Digital proof of receipt was used as part of the documentation and accountability mechanisms for program implementation.

Standards and Implementation Guidelines

The program was implemented in accordance with relevant provisions concerning halal compliance, animal welfare, and food safety. The slaughtering process referred to the Indonesian Ulema Council (MUI) Fatwa No. 12 of 2009 on Halal Slaughter Certification Standards (Majelis Ulama Indonesia, 2009), SNI 99003:2018 on Halal Slaughtering of Ruminant Animals (Badan Standardisasi Nasional, 2018), and the Minister of Agriculture Regulation No. 114 of 2014 on the Slaughtering of Qurban Animals (Kementerian Pertanian, 2014). Meat handling also followed the principles of ASUH (Aman, Sehat, Utuh, dan Halal; Safe, Healthy, Wholesome, and Halal) (Utami, Suryadi, Prasetyo, Dewi, & Pantaya, 2024). The application of these standards was intended to ensure that qurban activities not only fulfilled religious requirements but also addressed animal welfare, sanitation, food safety, and environmental protection (Sazili, Kumar, & Hayat, 2023).

Data Collection and Program Evaluation Instruments

An information-system instrument was used to support the management of shohibul qurban and beneficiary data, the verification process, distribution scheduling, delivery tracking (Md Salleh et al., 2023), and documentation of proof of receipt. Program data were obtained from shohibul qurban administrative records, animal health inspection documents, implementation documentation, packaging records, the beneficiary database, and distribution records (Ruhyana et al., 2025). Program evaluation was conducted descriptively based on process and output indicators at each stage. The observed indicators included the systematic recording of shohibul qurban data, animal eligibility and health status, implementation of slaughtering procedures, waste management, the quality of meat handling and packaging, the number of packages produced, accuracy of beneficiary targeting, completeness of beneficiary documentation, and feedback from partners, shohibul qurban, and beneficiaries. The evaluation results were used to identify program achievements, implementation limitations, and aspects requiring improvement in future qurban activities.

RESULTS AND DISCUSSION

Donor Management (Shohibul Qurban)

The initial stage resulted in the registration of 28 shohibul qurban who collectively contributed four cattle under a group contribution arrangement of seven participants per cow. An additional three cattle were donated by institutional donors, namely Kaya Tene Group, Rumah Zakat NTT, and Sahabat Yatim, while one cow contributed by the Rector of UNDANA, bringing the total to eight cattle. Donor information, including identity, qurban intention, animal type, and group contribution arrangement, was documented through offline and online registration mechanisms. Financial records covering incoming contributions, procurement allocations, and operational expenses were maintained, while digital proof of contribution or qurban certificates was provided to donors. These administrative records established an initial basis for integrating donor information with subsequent beneficiary distribution data. This finding is consistent with Viandari and Aini (2021), who emphasized the importance of integrating donor transactions and distribution reporting within qurban management information systems. Furthermore, Mahat et al. (2023) highlighted the role of structured documentation and internal control mechanisms in

strengthening accountability in qurban management, suggesting that the administrative practices adopted in this program could support greater transparency and traceability of donor contributions.

Animal Procurement and Health Inspection

Animal procurement prioritized compliance with Islamic requirements, including appropriate species and age, as well as the absence of physical defects that could invalidate the qurban. All eight cattle underwent ante-mortem health examinations conducted by personnel from the Veterinary Medicine Study Program at UNDANA and were accompanied by Animal Health Certificates (SKKH). These procedures provided documented evidence of animal health screening before slaughter and supported the implementation of the ASUH (safe, healthy, wholesome, and halal) principles. Procurement also prioritized local livestock suppliers as a potential means of supporting community participation in the qurban supply chain. Previous research has demonstrated that integrated qurban supply chain management can provide economic opportunities and improve income among participating smallholder farmers (Abidin, Adawiyah, Shaferi, & Sodiq, 2024). However, Piliyanti and Karnawijaya (2026) found no statistically significant overall welfare effect of qurban activities on smallholder farmers, highlighting the importance of inclusive procurement arrangements in determining economic benefits. Although local sourcing was prioritized in this program, the absence of detailed supplier and transportation records prevented quantitative assessment of its economic contribution and transport-related environmental impacts.

Pre-Slaughter Animal Care

The eight cattle were housed in shaded, well-ventilated open pens with clean flooring and adequate access to feed and drinking water. Animal welfare-related practices were reflected in observable management indicators, including shelter conditions, pen cleanliness, feed and water availability, and non-violent handling procedures. These practices are consistent with the animal welfare recommendations of the World Organisation for Animal Health (World Organisation for Animal Health, 2024), which emphasize appropriate housing conditions, access to essential resources, and humane handling during the pre-slaughter period. Previous studies have also highlighted the importance of minimizing unnecessary pain and distress in halal slaughter practices, consistent with the Islamic ethical principle of ihsan (Farouk, Pufpaff, & Amir, 2016; Sazili et al., 2023). Furthermore, Davis et al. (2022) identified animal condition upon arrival, handling practices, and lairage duration as important factors in evaluating pre-slaughter cattle welfare. However, the management practices reported in this program primarily represent welfare-supporting measures rather than quantitative evidence of reduced animal stress. Manure generated during the holding period was collected for composting, incorporating waste management considerations into the pre-slaughter stage.

Sharia-Compliant and Eco-Friendly Slaughtering Process

Slaughtering was carried out by competent slaughter personnel in accordance with Islamic procedures, including orienting the animal toward the qibla, reciting the tasmiyah, using a specially prepared and sharp knife, and severing the required passages in accordance with halal slaughter standards (Badan Standardisasi Nasional, 2018; Majelis Ulama Indonesia, 2009). Knives were not sharpened in front of the animals, and animals were not slaughtered in the presence of other animals, reflecting the Islamic principle of ihsan. The slaughtering area was organized into clean and unclean zones, with adequate water supply and personal protective equipment for personnel. Environmental considerations were incorporated through the collection and segregation of slaughter waste. Blood was collected to minimize the risk of direct contamination of soil and water, while rumen contents and other organic residues were directed toward potential composting and further utilization. These practices are consistent with Basyir (2024), who emphasized the integration of environmental sustainability into qurban activities through responsible waste management and resource utilization. Furthermore, Ratnawati et al. (2016) demonstrated the technical feasibility of converting rumen content waste into compost,

highlighting the potential value of organic residues generated during slaughter. Although waste quantities and compost production were not quantified in this program, the implemented waste segregation practices provided an initial basis for integrating environmental considerations into qurban management. Hides and offal were managed in accordance with Islamic jurisprudential provisions and were not sold as compensation for committee members. The sequence of activities is presented in the following diagram, illustrating the involvement of relevant actors at each stage of the program (Figure 1).

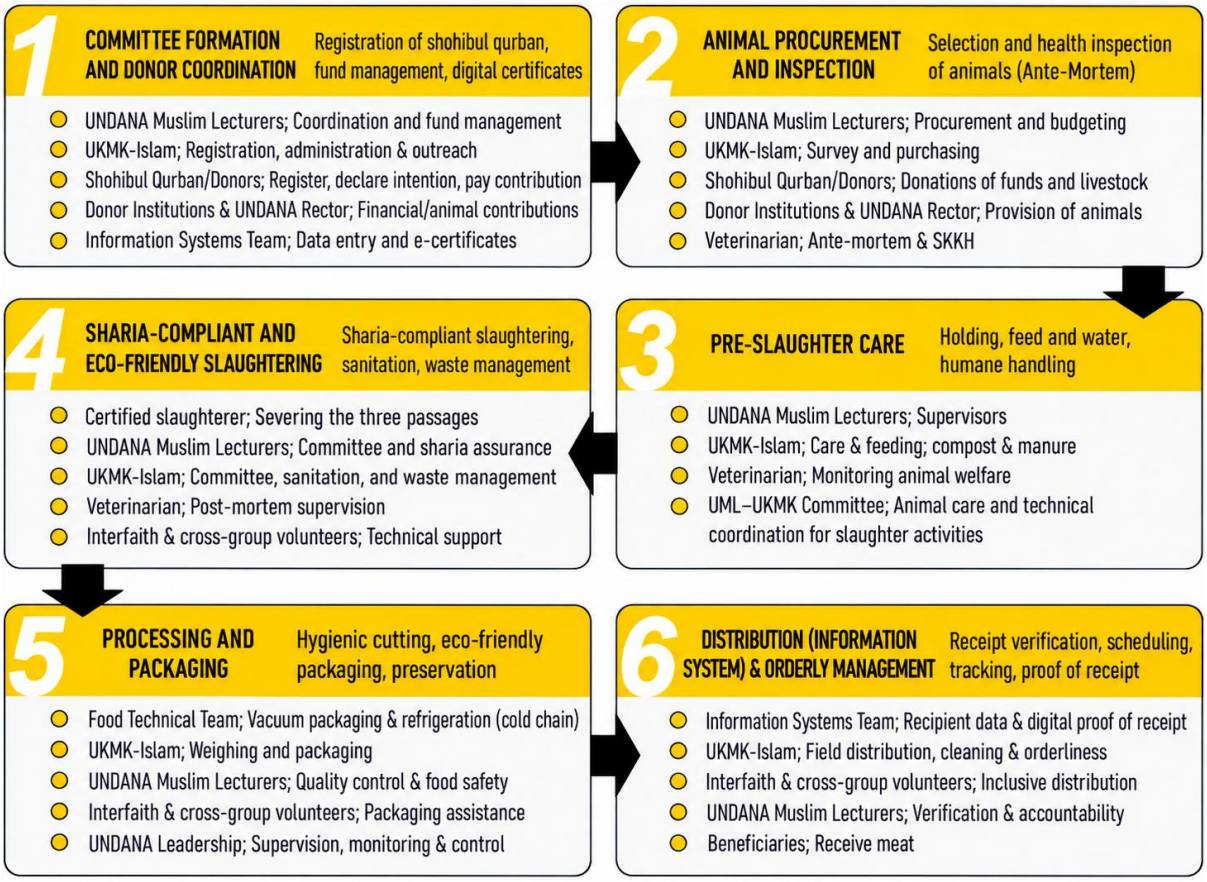


Figure 1. *Qurban animal management process flowchart*

Post-Slaughter Processing and Packaging: The Core of Downstreaming

The post-slaughter processing and packaging stage represented the core component of the downstreaming approach. Meat cutting was conducted in a designated clean processing area, followed by weighing, portion standardization, vacuum packaging using food-grade materials, and refrigerated storage. Approximately 600 vacuum-sealed packages were produced from the eight cattle, with a target portion weight of approximately 1 kg per package. Each package was labeled with the packing date and weight to facilitate product identification, handling, and distribution to beneficiary households. These procedures transformed the qurban meat into standardized and labeled portions, providing a more organized approach to post-slaughter handling and distribution. Previous research has demonstrated that vacuum packaging can help preserve fresh beef quality by limiting oxygen exposure and delaying the growth of aerobic spoilage microorganisms, particularly under appropriate refrigeration conditions (Hernández-Macedo, Barancelli, & Contreras-Castillo, 2011). Similarly, Rovira et al. (2023) demonstrated that the microbiological characteristics of vacuum-packaged beef are influenced by storage temperature and packaging properties, emphasizing the importance of temperature control in maintaining product quality. In the context of qurban distribution, Wahab et al. (2025) identified limited cold-storage capacity, inconsistent packaging procedures, and hygiene management

challenges as important operational constraints. The integration of portion standardization, vacuum packaging, refrigeration, and labeling in this program therefore provided a practical framework for more systematic qurban meat handling and distribution. Nevertheless, microbiological quality and self-life improvements were not directly evaluated in this program.

Information System-Based and Inclusive Distribution

The distribution process was organized using an information system containing a database of registered beneficiaries, including their names, addresses, and identified needs, supported by distribution schedules, tracking records, and digital proof of receipt. Priority was given to economically disadvantaged members of the university community, including students, educational support staff, security personnel, cleaning service workers, and drivers. During the program, approximately 600 meat packages were distributed, reaching 570 registered recipients. The number of packages and recipients represented different distribution units, as the allocation arrangement also accommodated the entitlements of participating shohibul qurban rather than strictly applying a one-package-person system. The distribution process also promoted social inclusion through the involvement of volunteers from diverse religious and social backgrounds and the provision of assistance to eligible vulnerable beneficiaries.

The integration of beneficiary registration, distribution tracking, and digital receipt documentation provided an administrative framework for verifying recipient information and tracing meat distribution. This approach is consistent with the Qurban Distribution System (QurDiS) proposed by Md Salleh et al. (2023), which emphasizes structured beneficiary records, distribution documentation, and internal control mechanisms to support fair and accountable qurban distribution. Similarly, Mahat et al. (2023) highlighted the importance of systematic documentation and internal controls in strengthening governance and accountability in qurban management. Ruhyana et al. (2025) further demonstrated the application of web-based information systems for managing beneficiary data and qurban meat distribution records. These findings suggest that integrating digital registration and distribution documentation, as implemented in this program, can provide a practical foundation for improving administrative traceability, supporting transparent distribution management, and facilitating future program replication. Nevertheless, the effectiveness of the system in preventing duplicate allocations and improving targeting accuracy was not quantitatively evaluated, indicating the need for more systematic performance assessment in subsequent implementations.

Nutritional Impact, Inclusivity, and Sustainability

The findings demonstrate the potential of structured qurban management to expand access to animal-source foods among economically disadvantaged members of the university community. Through standardized processing, vacuum packaging, and organized distribution, the program provided approximately 600 meat packages to 570 registered recipients, primarily consisting of students and university support personnel. As a source of high-quality protein and essential micronutrients, beef can contribute to dietary diversity and nutritional adequacy. Previous studies have highlighted the importance of animal-source foods in supporting nutritional quality and child growth. Cahyani et al. (2026) reported an association between higher protein intake and lower odds of stunting among children aged 6–23 months, while Kania et al. (2026) emphasized the role of animal-source proteins in supporting optimal growth during early childhood. However, these findings concern child nutrition and cannot be directly interpreted as evidence of nutritional improvement among the predominantly adult beneficiaries of the present program.

The relevance of improved access to nutritious foods is particularly important in East Nusa Tenggara, where the 2024 Indonesian Nutritional Status Survey reported a stunting prevalence of 37.0%, the highest among Indonesian provinces (Ministry of Health of the Republic of Indonesia, 2025). Nevertheless, stunting is a multifactorial condition influenced by nutritional intake, infectious diseases, maternal and child health, sanitation, and socioeconomic circumstances, as demonstrated by Wulandary and Sudiarti (2024). Therefore, the present program should be understood as a community-based initiative facilitating short-term access to

animal-source foods rather than a direct stunting-reduction intervention, as children under five were not specifically targeted and neither dietary intake nor nutritional status was assessed. Future program development could explore collaboration with Posyandu and Puskesmas to identify nutritionally vulnerable households and integrate food distribution with existing community nutrition programs.

Beyond food access, the program demonstrated an inclusive approach through the participation of volunteers from different religious and social backgrounds and the distribution of assistance to eligible beneficiaries regardless of their backgrounds. This participation reflected the broader social function of qurban as a form of community solidarity and cooperation. From an institutional perspective, the integration of standardized procedures, competent personnel, and a structured beneficiary database established an operational foundation for program continuity and replication. Further development could involve strengthening institutional partnerships, establishing systematic monitoring of beneficiary needs, and evaluating household-level food access and nutritional outcomes. Although the long-term effects on food security, nutritional status, and social cohesion were not measured, the program provides an initial model for integrating religious charity, inclusive community engagement, and organized food distribution. The observed outputs, initial outcomes, and potential longer-term contributions of the program are summarized in the following Table 2.

Table 2. *Program Outputs, Outcomes, and Potential Impacts*

Stage & Process	Output (Documented)	Immediate Outcome (Operational)	Potential Long-Term Impact (Not Measured)
T1 — Donor Coordination Registration of *shohibul qurban*, financial administration, and digital certificates	Database of 28 *shohibul qurban*; financial transaction records; digital certificates; four cattle contributed by registered participants and four additional donated cattle	Establishment of organized donor registration and documented contribution management	Potential strengthening of donor accountability, transparency, and institutional trust in qurban management (Mahat et al., 2023)
T2 — Animal Procurement & Inspection Animal selection, procurement, and *ante-mortem* examination	Eight cattle subjected to veterinary health examination; Animal Health Certificates (SKKH); documented animal selection procedures	Implementation of animal health screening and Sharia-related selection requirements before slaughter	Potential strengthening of animal procurement standards and opportunities for local livestock supplier participation (Piliyanti & Karnawijaya, 2026)
T3 — Pre-Slaughter Care Animal housing, feed and water provision, and humane handling	Shaded and ventilated holding areas; access to feed and water; non-violent handling procedures; manure collected for composting	Application of management practices supporting animal welfare and organized manure handling	Potential development of animal-welfare-oriented and environmentally responsible qurban management practices (World Organisation for Animal Health, 2024)
T4 — Sharia-Compliant Slaughtering Halal slaughter procedures, sanitation, and organic waste management	Slaughtering conducted according to Islamic procedures; separation of clean and unclean zones; collection and segregation of blood and organic residues	Implementation of structured slaughter hygiene and waste-handling procedures	Potential development of replicable Sharia-compliant slaughtering practices and improved environmental management
T5 — Processing & Packaging Hygienic meat cutting, portion standardization, vacuum packaging, and refrigeration	Approximately 600 vacuum-sealed and labeled meat packages; designated clean processing area; refrigerated storage	Standardized packaging and labeling supporting more organized meat handling and distribution	Potential improvement in storage management and distribution logistics, subject to appropriate temperature control and food safety monitoring

Stage & Process	Output (Documented)	Immediate Outcome (Operational)	Potential Long-Term Impact (Not Measured)
			(Rovira et al., 2023; Wahab et al., 2025)
T6 — Information System-Based Distribution Beneficiary registration, distribution scheduling, tracking, and receipt documentation	Approximately 600 meat packages distributed to 570 registered recipients; beneficiary database; distribution records and digital proof of receipt	Documented distribution to eligible beneficiaries and establishment of an administrative mechanism for tracking allocations	Potential strengthening of distribution traceability, accountability, and repeated access to animal-source foods through future program implementation(Mahat et al., 2023; Md Salleh et al., 2023)
Cumulative (Program Level) Integration of upstream-to-downstream qurban management	Documented integrated management workflow covering donor coordination, animal procurement, slaughtering, packaging, and distribution; program documentation	Establishment of an operational model integrating Sharia-related procedures, administrative documentation, hygienic handling, and inclusive distribution	Potential replication of the management model across East Nusa Tenggara and contribution to community food-access initiatives, subject to further implementation and impact evaluation

Note: *Outputs represent activities or deliverables documented during program implementation. Immediate outcomes describe operational contributions associated with these outputs and should not be interpreted as experimentally demonstrated improvements. Potential long-term impacts are prospective benefits supported by relevant literature but were not measured in this program. No quantitative assessments of donor trust, farmer income, animal stress, waste reduction, microbiological safety, shelf life, household food security, or nutritional status were conducted. The approximately 600 packages and 570 registered recipients represent different counting units; individual package allocations were not quantified in the available summary.*

CONCLUSION

This community service program successfully developed and implemented an integrated upstream-to-downstream qurban management model at Universitas Nusa Cendana, incorporating Sharia compliance, animal welfare considerations, environmental responsibility, hygienic meat handling, social inclusivity, and information system-based distribution. Through six interconnected stages, the program involved 28 shohibul qurban, managed eight cattle, and produced approximately 600 meat packages distributed to 570 registered recipients, primarily economically disadvantaged members of the university community. The main contribution of the program lies in establishing an operational framework that integrates religious principles, standardized management procedures, post-slaughter processing and packaging, waste handling, and documented beneficiary distribution. This approach demonstrated the feasibility of transforming seasonal qurban activities into a more organized, inclusive, and data-supported initiative that facilitates access to animal-source foods. However, improvements in nutritional status, household food security, environmental performance, and distribution accuracy were not quantitatively evaluated. Future implementation should prioritize systematic monitoring, stronger cross-sector partnerships, and evaluation of food access and operational performance to support program sustainability and potential replication across East Nusa Tenggara.

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