SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY, STATEWIDE

EXECUTIVE SUMMARY MASTER PLAN AND FEASIBILITY ANALYSIS

DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

IN COOPERATION WITH
HAWAIʻI CATTLEMEN'S COUNCIL, INC.

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The Hawaii Cattlemen's Council, Inc. (HCC) is the Statewide umbrella organization comprised of the four county level Cattlemen's Associations. Our 150+ member ranchers represent over 60,000 head of beef cows; more than 75% of all the beef cows in the State. Ranchers are the stewards of over 750 thousand acres of land in Hawaii, or 20% of the State's total land mass. HCC is also unified with the National Cattlemen's Beef Association (NCBA).

HCC's goal is to provide every cattle producer in the state the best opportunity to be both sustainable and profitable. We also believe in grass-roots leadership where every producer's voice is important in establishing policies and direction for our industry both locally and nationally.

While we have always respected and valued the individuality and independence of our fellow producers, we also understand the added effectiveness and strength that comes from working together, sharing information and technology, speaking with one voice in public forums, and ever more so to move and market our product cooperatively with our fellow ranchers.

Hawaii Cattlemen's Council, Inc.

HCC, HDOA-ARM and L. Wood, DVM
Thank you for the opportunity, patience, and guidance.

EXECUTIVE SUMMARY
MASTER PLAN AND FEASIBILITY ANALYSIS

In 2019, Hawai‘i Department of Agriculture and Hawai‘i Cattlemen’s Council, Inc. embarked on a feasibility study and master plan project for the establishment of livestock harvesting facility(ies) in the state of Hawai‘i. The project included the design of a scalable plant that a third party could adapt to a parcel and build a future processing facility. The feasibility study, master plan and design may be used as a marketing tool to attract investors and future construction of a livestock harvesting facility in Hawai‘i.

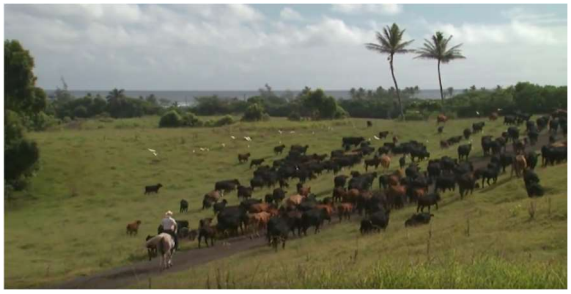
The timing of the study coincided with the coronavirus pandemic, which created production and supply chain delays and shortages. The pandemic highlighted our dependency on imports, as statistics indicate that over 90% (ninety percent) of our commodities and food are imported. The development of a Hawai‘i-grown and -harvested livestock system would increase Hawai‘i’s food security. Therefore, the project has the following goals:

- Create a facility model that enables the sustainability of Hawai‘i’s beef industry, as well as addresses the economic, social and environmental impacts for the potential livestock harvesting facility.

- Create a marketing tool to attract investors for future construction of a livestock harvesting facility in Hawai‘i.

DATA COLLECTION AND ANALYSIS

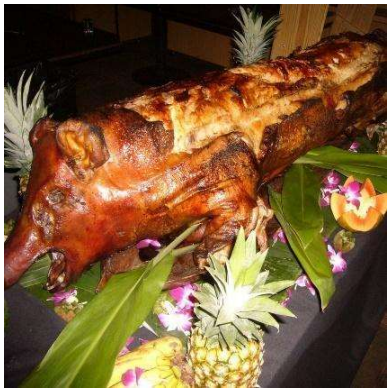
The findings were based on information gathered about the livestock industry and consumer preferences in Hawai‘i. The data was obtained through interviews of ranchers, harvesting facility operators, food wholesalers and consumers (residents, Mainland residents and tourists) about the livestock industry in Hawai‘i.



In addition, research was conducted on consumer meat preferences, demand and opinions on grass-fed beef. University of Hawai‘i research and previous investigations indicate that market penetration for Hawai‘i-raised beef will increase if the issue of meat tenderness is addressed. The project’s data collection also revealed that one of the main limitations in Hawai‘i’s harvesting industry is a lack of refrigerated storage space. One other issue highlighted by smaller ranches was limited access to harvesting resources for their livestock.

Based on the analysis, Hawai‘i’s livestock harvesting industry is dominated by the harvesting of cattle for beef products, with swine harvesting for dressed carcasses, a far second. There are smaller harvesting quantities of sheep, goats and axis deer dependent in specific areas of the

state. Hawai‘i grass-fed beef has a seven to 7%-9% (seven to nine percent) market infiltration rate in the statewide commercial beef market. The Hawai‘i raised and commercially harvested pork (swine) market infiltration was estimated to be less than one percent (<1%). However, it should be noted that grey market-harvested pork (consumer purchase harvested swine directly from the rancher) has a significantly higher market penetration of approximately 5% (five percent). If grey market harvesting is shifted to commercial harvesting, the quantity of livestock commercially harvested would significantly increase.



CONCEPT DEVELOPMENT

The information and analysis provided a range of harvesting capacities to meet existing and forecasted livestock harvest demand in the state and by county. To achieve the scalability goal, design concepts placed an emphasis on maintaining a similar livestock processing scheme throughout the facility, independent of size. The common scheme provides common elements in the design and provides for a layout that allows for expansion to meet the design harvest capacity.

The scalability aspect is proven by using two cattle processing rates, which are indicative of the facility size range within the state. The two processing rates chosen were 20 animal units/day (AU/day) and 70 AU/day, representing a smaller and larger facility. At 20 AU/day, the facility processes 5,000 AU/year, while at 70 AU/day, the facility has the capacity to process 18,000 AU/year. However, due to the labor shortage for butchers and cutters the facility would initially process 10,000 AU/year using a limited work schedule.

DESIGN

The design parameters were based on the harvest size of the cattle and on market penetration into the Hawai‘i beef market. The average live weight of the cattle was 1,095 pounds. The study presents a preliminary design for a 70 AU/day facility, which includes on-site disposal subsystems for waste and wastewater. To provide flexibility in marketing and a consumer base, the facility was also designed to meet various standards such as USDA, British Retail Consortium (BRC), and Occupational Safety and Health Administration (OSHA) requirements.

The designed harvesting building has a footprint of 19,600 square feet, with a total site area of 25 acres. The design addresses the consumer’s beef tenderness issue by including a wet-aging refrigerated storage system. To increase refrigerated storage, additional refrigerated space and expansion capacity is included for dressed carcasses and finished products. The preliminary design is not site specific and the design drawings are presented in Volume II of the study. The construction cost for the facility is $51 million ($51,000,000), which is based on an unconstrained budget.

FINANCIAL FEASIBILITY

The feasibility study considers the sustainability of the livestock industry as a system and not standalone entities or parts. The system needs to consider the cost of maintaining pasture, fodder and feed, as well as providing a marketplace for the finished product at a reasonable price to consumers. The feasibility for the harvesting facility must provide a sustainable income to the rancher to maintain a consistent flow of quality livestock over the long term.

Currently, Hawai‘i’s beef industry ships the majority of calves to the Mainland to grow before they are harvested. The business model of the new harvesting facility must change the current calf-export model to a calf-to-harvest model. The change to a calf-to-harvest model will change pasture use, as the cattle will take 18 months or more to reach harvesting weight. Therefore, the longer pasture time changes the revenue stream for the ranchers and the carrying capacity of the pasture. Based on the pasture acreage available and type of pasture, it is estimated that current pasture lands can produce a low estimate of 33,188 cattle/year to a high estimate of 55,393 cattle/year. Given these estimates, the quantity of cattle to be processed at the proposed 70 AU/day rate is possible.

The new harvesting facility will need to compete with existing harvesting facilities to buy the cattle from ranchers and sell the finished product to wholesalers. These two variables, 1) cost of goods sold as stated above and 2) price to wholesalers, are significant factors attributing to the feasibility or profitability of the facility. In addition, the feasibility also considers the debt service and operating costs of the facility, which are less variable over time.

The difference between these two prices needs to provide the harvesting facility with adequate revenue to cover costs to construct the facility, lease or buy the land area required, reinvest into the facility, operate the facility and provide benefits to the investors. The financial feasibility conducted shows that 70 AU/day, with an annual processing capacity of 10,000 AU/year, may have a positive return on investment, using cost for goods sold and wholesale pricing based on the data collected. However, these two prices are dynamic and can be affected by environmental conditions, global pressures, local economics, consumer demand, etc.

The financial analysis showed that a 20 AU/day facility has a negative ROI, while a 70 AU/day facility operating at 40 AU/day capacity will have a marginally positive ROI. As production reaches a 70 AU/day capacity, the ROI increases to 15.25, with debt services. The ROI without debt services as production reaches 70 AU/day is 25.64, and the plant profitability is 29.57.

The study provides initial data collection for investors who will need to perform their due diligence for such a project. The investor will need to seek out a market before deciding on which island the facility will be constructed, selecting a site, and determining the economic viability on that island. The island ranching system will need to determine if the ranchers can supply the required AU at a consistent capacity and quality. The investor will also need to determine the harvesting capacity and species that will be harvested at the facility. In addition, the owner will need to contend with the issue of providing a harvesting time for smaller ranches, which may depend on issues such as the facility’s business model, type of cattle, beef quality, quantity, etc.

BRANDING AND MARKETING

The survey of consumers found that the reasons for selecting beef in the market differs when comparing Hawai‘i versus Mainland consumers. In Hawai‘i, the top reasons for selecting a specific brand or source of beef included, in this order: 1) grass-fed, 2) Hawai‘i (locally) grown, 3) good quality and 4) good growing environment, with good price, flavor and freshness rounding out the list. To maintain or increase market penetration, strong branding and marketing strategies must be incorporated into the livestock industry and for the harvesting facility.

The study proposes that Hawai‘i Cattlemen’s Council, Inc. or a similar livestock industry organization register **“**Hawai‘i Grass-fed Beef,**”** as well as the specific Seal of Assurance wording and trademark. For this trademark, the registering organization would need to identify the criteria for products that use the trademark. It is important to ensure that once the product is purchased, consumers will taste the quality and buy it again. Building awareness of what the brand and trademark conveys should also be managed by the registering organization.

FOOD SECURITY AND SUSTAINABILITY

The facility will provide for increased production of Hawai‘i-raised grass-fed beef to meet or exceed the existing market penetration and forecast growth. The development will provide long-term availability of fresh livestock finished products for the state. With global factors and climate change, the traditional sources of imported (into Hawai‘i) agricultural products will be impacted and the out-of-state suppliers may not be able to supply Hawai‘i with current products and/or with adequate quantities. The incorporation of wet-aging and increased refrigerated storage will provide a tender, quality product and allow for consistent supply of Hawai‘i-grown finished products to meet consumer demand. The increase in cost-effective Hawai‘i-grown and -finished agricultural products will increase Hawai‘i’s food security in the long-term.