Supply Chain Management of Native Chicken in Davao Oriental

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DOI: https://dx.doi.org/10.47772/IJRISS.2025.9020177

Received: 06 February 2025; Accepted: 10 February 2025; Published: 10 March 2025

ABSTRACT

The supply chain management of native chicken in Davao Oriental is a critical component of the province's poultry sector, directly affecting food security, rural incomes, and market efficiency. This study examines the various elements of supply chain management, including product flow, information exchange, and financial transactions among key stakeholders such as raisers, traders, institutional buyers, and consumers. Data were gathered from 60 native chicken raisers, 12 buyers, and four traders across Banay-banay, Lupon, San Isidro, and the City of Mati using surveys and interviews. The results indicate that native chicken production remains largely backyard-based, characterized by informal trading systems, fragmented market access, and inefficient logistics. The study identified product flow as highly variable, with some native chicken raisers selling directly to consumers while others rely on traders to reach institutional buyers. Payment systems are largely cash-based, with occasional cash advances provided by traders. Information flow within the supply chain is unstructured, primarily relying on personal experience, mobile communication, and informal agreements. Transportation challenges, pricing instability, and the absence of standard grading systems further hinder market efficiency. Despite these issues, demand for native chicken remains high, particularly from institutional buyers such as restaurants and market vendors. This study recommends strengthening cooperative systems, improving logistics and infrastructure, integrating digital market solutions, and implementing quality and pricing standards to enhance supply chain efficiency and sustainability.

Keywords: Native Chicken, Supply Chain, Logistics, Davao Oriental, Management

INTRODUCTION

The poultry industry in the Philippines plays a vital role in providing food security and generating income for rural communities. While commercial poultry production is highly structured, native chicken farming remains largely backyard-based, with small-scale farmers supplying local markets through informal trading systems (Shilpa, 2008). Native chicken is widely preferred due to its organic nature, distinct flavor, and adaptability to harsh conditions (Lizada et al., 2012). Despite its advantages, the native chicken industry in Davao Oriental faces several supply chain management challenges that hinder its full potential.

A well-functioning supply chain is characterized by efficient product flow, structured information exchange, and reliable payment systems (Chopra & Meindl, 2001). However, in Davao Oriental, native chicken raisers often struggle with inconsistent market access, weak financial linkages, and logistical inefficiencies. Many small-scale farmers rely on traders to distribute their chickens to institutional buyers, often leading to lower profit margins due to price dependency on middlemen.

The product flow in native chicken trading varies based on demand, location, and intermediary involvement. In some cases, native chicken is sold directly from farmers to end consumers, while in other cases, traders act as intermediaries, consolidating and reselling chickens at higher prices. Institutional buyers, such as restaurants and public market vendors, often set purchase requirements, including volume, weight, and quality specifications, which influence pricing and trading decisions.

Information flow within the supply chain is mostly informal, relying on mobile communication, word-of-mouth, and personal networks. The absence of standardized pricing mechanisms makes it difficult for farmers to negotiate fair prices. Payment transactions are typically conducted in cash, with some traders providing cash advances to trusted farmers, particularly during peak demand seasons (Shilpa, 2008).

Logistical challenges further compound supply chain inefficiencies. Most farmers transport live native chickens using motorcycles, which can result in product loss due to mortality and stress during transit. Additionally, the lack of proper market infrastructure and dedicated trading areas increases operational costs for farmers and traders. The absence of established processing facilities also limits opportunities for value-added products such as dressed and packaged native chicken.

Given these challenges, this study aims to analyze the supply chain management of native chicken in Davao Oriental, identifying areas for improvement and proposing recommendations to enhance efficiency, profitability, and sustainability. By addressing supply chain bottlenecks, this study seeks to provide valuable insights for policymakers, industry stakeholders, and native chicken farmers.

METHODOLOGY

Locale of the Study

The research study was conducted in the Province of Davao Oriental, specifically in the Municipalities of District II. Site identification was done based on the evident presence of native chicken business, accessibility and convenience of the researcher. Notably, the locale has native chicken production in different municipalities. The province is located in the Island of Southern Philippines. The location of the study comprised municipalities in the second district of Davao Oriental namely; Banay-banay, Lupon, San Isidro, and City of Mati.

Davao Oriental is primarily a livestock and poultry production area. Land areas and the climatic conditions are very ideal for livestock and poultry production. Major commodities include goats, cattle, swine, sheep and poultry (layer and native). Estimated economic value of major livestock and poultry commodity in the Province reached 1.8 billion pesos in 2007 inventory of Bureau of Agricultural Statistics. More than 90% of the industries are from backyard sector, commercial farms constitute only a portion of the overall population.

During the survey, communication letters were sent address to the Municipal/City Mayors of the respective municipalities to ask permission on the conduct of the study. No secondary data on the volume of production of native chicken were available per study site, but through the tracer methodology and snowball sampling the researcher found out that native chicken production is sourced out from the backyard farm raising of native chicken raisers along this area.

Banaybanay is a 2nd class municipality in the province of Davao Oriental, Philippines. According to the 2010 census, it has a population of 39,121 people in 8,508 households. Banaybanay is politically subdivided into 14 barangays namely; Cabangcalan, Caganganan, Calubihan, Causwagan, Puntalinao, Mahayag, Maputi, Mogbongcogon, Panikian, Pintatagan, Piso, Poblacion, San Vicente, and Rang-ay.

Lupon is a 1st class municipality in the province of Davao Oriental, Philippines. According to the 2000 census, it has a population of 57,092 people in 10,812 households. Upon is politically subdivided into 21 barangays.

San Isidro is a 3rd class municipality in the province of Davao Oriental, Philippines. It has a land area of 220 km². According to the 2010 census, it has a population of 32,424 people in 7,187 households. San Isidro is politically subdivided into 16 barangays. Seven barangays are along the coastlines while the other nine are in the upland areas.

Mati is the only city in, and the capital city of, the Province of Davao Oriental, Philippines. According to the 2010 census, it has a population of 126,143 people. Residents of Mati are called Matinians. Mati is politically subdivided into 26 barangays.

Respondents of the Study

Tracer methodology and snowball sampling were used to determine the respondents of the study. Snowball sampling used a small pool of initial informants to nominate other participants that could potentially serve as the respondents of the study. Then the respondents were traced from the information given by the initial informants. From the raisers, traders, institutional buyers and household or walk-in consumers were identified and interviewed. This methodology was done since no official list of native chicken raisers available during the conduct of the study.

The respondents of this study were those in the native chicken industry; raisers and buyers. The key respondents of the survey were native chicken raisers and buyers in the province of Davao oriental, who were:

- involved in native chicken production
- engaged in this activity for at least one year
- men or women aged 18 to 85 years old
- involved in the buying and selling of native chicken for commercial used like, native chicken barbeque business

The study also employed quota sampling in computing for the number of respondents interviewed. Quota sampling with 60 native chicken raisers and twelve buyers interviewed from the three municipalities and one city. Meanwhile, complete enumerations of traders available in the areas are interviewed with a total of four.

The survey questionnaire was administered to sixty (60) raisers who raise and supply native chicken to identified traders. Another set of survey questionnaire was directed to four (4) traders who buy and sell native chicken. And the third set of survey questionnaire was given to twelve (12) buyers, including the institutional buyers and walk-in consumers.

Table 1. Distribution of Respondents per Study Site

Municipality/City	**Raisers**		**Traders**		**Buyers**	
	Number	Percentage	Number	Percentage	Number	Percentage
City of Mati	15	25%	1	25%	3	25%
San Isidro	15	25%	1	25%	3	25%
Lupon	15	25%	1	25%	3	25%
Banaybanay	15	25%	1	25%	3	25%
Total	60	100%	4	100%	12	100%

Data Collection and Sampling Procedures

The researcher used both primary and secondary data. The primary data were taken from the actual interview of the respondents and from the result of the research instrument that were adapted, validated and utilized during the survey. Key players involved in the native chicken supply chain and these include the native chicken raisers, traders and customers or consumers. In addition, the number of native chicken raisers, and buyers interviewed was also determined based on quota sampling and complete enumeration for traders.

This study employed a mixed-method approach, integrating qualitative and quantitative research methods to analyze the supply chain of native chicken in Davao Oriental. The research covered four municipalities: Banay-banay, Lupon, San Isidro, and the City of Mati, where native chicken farming is prevalent. Data were collected from 60 native chicken raisers, 12 buyers, and four traders using structured surveys, in-depth interviews, and field observations.

A snowball sampling technique was used to identify respondents, ensuring representation from various levels of

the supply chain. The study examined key aspects of supply chain management, including product flow, information exchange, pricing mechanisms, logistics, and payment systems. Supply chain mapping was conducted to visualize the movement of native chicken from raisers to consumers, identifying inefficiencies and areas for improvement.

Descriptive statistical analysis was employed to interpret quantitative data, while thematic analysis was used for qualitative responses. The study also incorporated comparative analysis to evaluate differences in pricing structures, logistical constraints, and transaction methods across different supply chain actors.

Supply Chain Analysis

Supply Chain Mapping. *A* combination of relevant studies, review on the concepts of supply chain was done first to create an overall scenario in the study sites. A tracer methodology was carried out to completely document all information along the chain (from upstream to downstream key players). Relevant information gathered was as follows;

Key customers and Product Requirements. For each supply chain, key customers and product requirements was identified. Product requirements were tracked down in terms of quality and volume requirements, preferred schedule and delivery mode, among others.

Product, Information and Payment Flow. This unit included the chronological flow of the product and payment as well as the mode of information flow along the chain.

Activities and Services along the Chain. The activities and services carried out along the chain were detailed. Cost efficiency of the supply chain was derived from the discussions on cost incurred in every activities and services in the chain.

Key Players and their Roles. The key players and their corresponding role in the native chicken supply chain were also identified. This validated the importance of each player in the chain. Moreover, the relationship between and among supply chain players in the context of network analysis was also the focus of the study. These relationships may include the feelings the players have for each other, exchange of information and more tangible exchanges such as goods and money. Tracing these relationship helps unveil and explain several emergent phenomena among the chain.

Critical Logistics Issues and Concerns. Logistics is the management of flow of goods and information from the point of production to the point of consumption by which the consumers are supplied with the desired product. Logistics entails the integration of information, transportation, inventory, storage, among others. It is one crucial aspect of the supply chain that attaches value of time and place utility. Several principles in logistics served as guide for analytical assessment of the logistics involved in particular supply chain; (1) simplicity, (2) responsiveness, (3) flexibility, (4) economic, and (5) sustainability. Logistics arrangements in a supply chain should prevent complexity and encourage efficiency in all activities such as raw materials sourcing or product distribution. Responsiveness in delivering the right inputs of production in the right place and at the right time. This is the underpinning of the logistics in supply chain for failing to put in place necessary logistics at the time needed means high production cost and low returns. In the outbound side, it is the ability to deliver the product to the high customer at the desired time and place.

External Influences. Every supply chain operates within a given environment. External Environment factors influence to a considerable extent the performance of a supply chain. Such factors may be technical, economic, cultural, and even political in nature. These factors must be fully understood so that the supply chain analysis and the corresponding measure for the improvement can be placed in proper context.

Ethical Considerations

This study adhered to the highest ethical standards in conducting research. Informed consent was obtained from all participants before their involvement in the study, ensuring they were fully aware of the purpose, procedures,

and potential risks. Participants were assured of their anonymity and confidentiality, with all data securely stored and used solely for research purposes. No participant was subjected to harm, and they were free to withdraw from the study at any time without penalty.

RESULTS AND DISCUSSION

Product, Information and Payment Flow

Supply chain management involved many factors. The flow is the foremost element, the foundation for all aspects of this process. There are three main types of flow, such as the product flow, the information flow, the finances flow.

The movement of goods from a supplier to a customer, as well as any customer returns or service needs is part of the product flow. The information flow involves transmitting orders and updating the status of delivery. The financial flow consists of payment schedules, credit terms, etc., to ensure prompt, efficient and accurate monetary transactions. The challenge in Supply chain management is to maintain all three flows and all three unique in an efficient manner, resulting in optimal results for the company.

This portion describes and analyzes the following; (a) Temporal flow of product which means the duration it takes for a product to move from the producer to end user or key customers, (b) Spatial flow of product which means the destination of product with respect to the key customer, (c) Payment flow which means the pricing and payment-related aspects of the product, and (e) Information flow which include, among others, the kind of information, source of information, mode of communication, method of delivery, method of discovery, method of validation and other information.

Product Flow

Some of the raisers do not sell their native chicken to the final customers but rather pass through intermediaries, each one performing a variety of value-adding activities. These channels are sets of interdependent entities involved in the process of making products available for consumption. It also capture the pathways a product follows after production, culminating in the purchase and use by the final customers (Lizada, J., et.al. 2012).

The number of intermediary levels was used to capture the length of the channel of the supply chain. The length of the channel for native chicken ranges from zero to one level. A zero-level channel of native chicken raisers selling directly to final consumers. While, a one-level channel contains one middleman in between the raisers and the consumers.

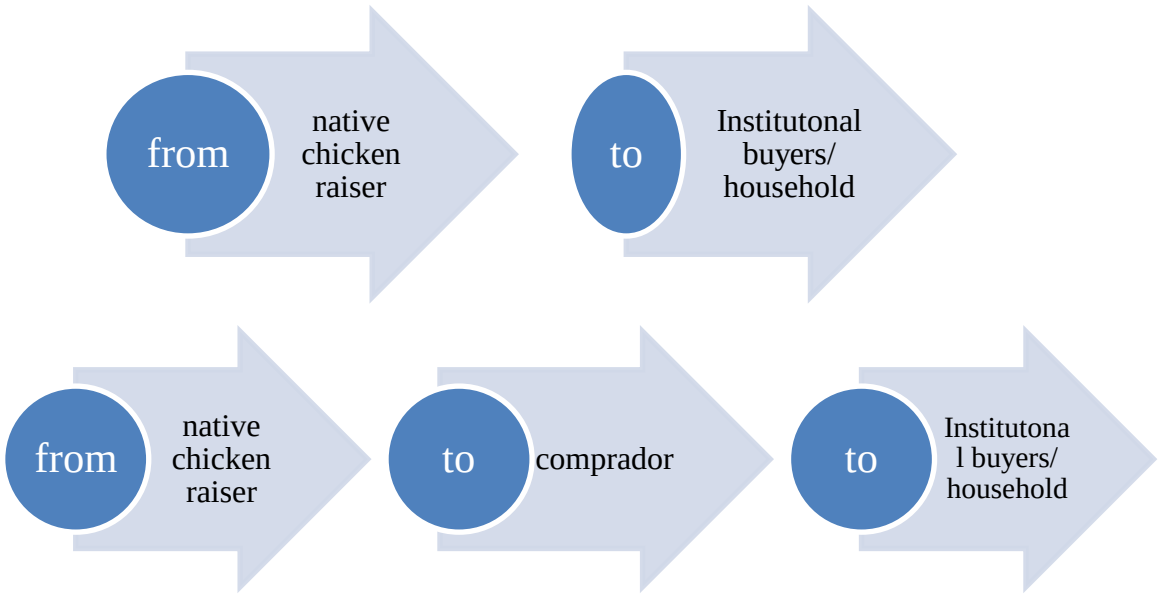

Figure 1. One-level Channel of Native Chicken Supply Chain

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue II February 2025

Native chicken raisers lack financial resources to carry out the marketing function thus, they considered increasing financial exposure to production aspect rather than in marketing to earn more return for their investment. Particularly, raisers delegate control of how and to whom native chicken are to be sold because direct marketing may not be financially viable for them.

There key considerations in the length of the channels were dependent on the desired level of output by the target customers, some of these were the following; a) the volume demanded per transaction. The higher the volume demanded, the longer the channel; b) Timing of delivery. The shorter the time from the time of order, the shorter is the channel. Key customers requiring immediate delivery of native chickens would go directly to the raisers; c) the venue where the chickens are to be delivered as specified by the market. The shorter the delivery place from the raiser's area, the shorter is the channel; d) Service back-up took into consideration the level of service demanded by the customers. Service back-ups include delivery on consignment basis and on-site deliveries, thus, the higher the level of service required, the shorter will be the most suitable channel for distribution.

The native chicken will be delivered anytime of the day to the trader or comprador at an average selling price of Php 150.00 per kilogram. But those raisers from the Municipality of Lupon and Banay-banay will wait for the trader to pick-up personally the native chickens at an average pick-up selling price of Php 130.00 per kilogram. A Php 20.00 difference in selling price was observed in this transaction, this is to compensate expenses of transportation. Then, the trader will deliver the native chicken to institutional buyer located at City of Mati. The delivery was on daily basis or 5 times a week, starting 9'oclock in the morning. The institutional buyer will demand for at least 30 kilos minimum orders per delivery at an average buying price of Php 180.00 per kilo. On the same date of delivery, if there are native chickens of patani breed, public market will be next stop of the trader. But this scenario seldom happens. The trader will receive orders from the institutional buyers through phone calls and text messaging. Delivery of native chicken was through the use of motorcycles with wooden sticks, letting the live native chicken hanged down.

The supply chain 1 followed a product flow from the native chicken raisers to the traders up to the institutional buyers including the restaurant and public market and eventually to household or walk-in buyers.

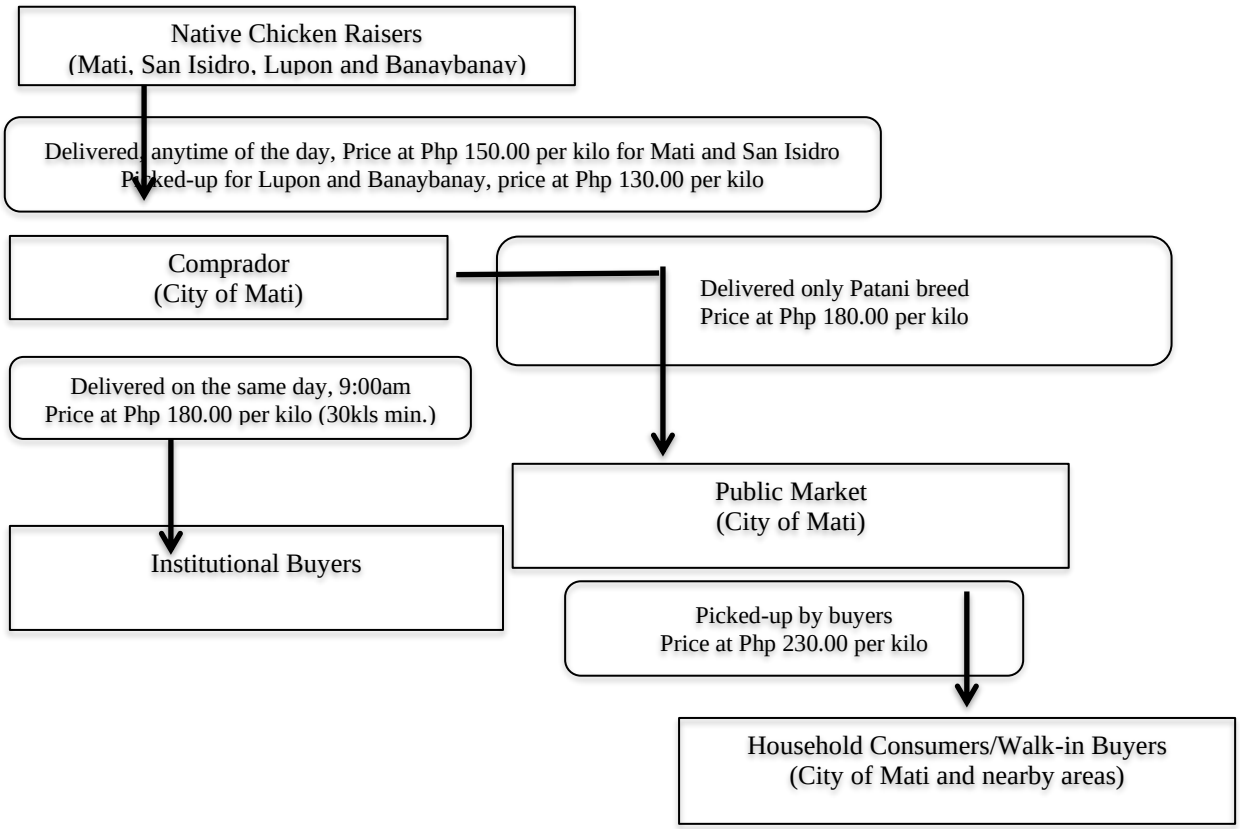

Figure 2. Product Flow of Native Chicken, Supply Chain 1

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue II February 2025

Product flow of native chicken supply chain 2 started similarly with supply chain 1. The product flow started from the native chicken raisers to the trader up to the institutional buyer. Native chicken bought from raisers at selling price of Php 150.00 will be delivered to institutional buyers and be sold at trader's selling price of Php 180.00. The institutional buyer for this chain requires a minimum of 50 kilos per delivery of native chicken, this order is higher than the other buyers because Bador Barbeque restaurant's demand for native chicken is definitely bigger because they offer their clients with native chicken grilled products only. Mode of communication from traders to institutional buyers was through mobile phone (calls and text messaging). Mode of transportation for every delivery was through motorcycles. No specific time of the day for the delivery of native chicken for this chain.

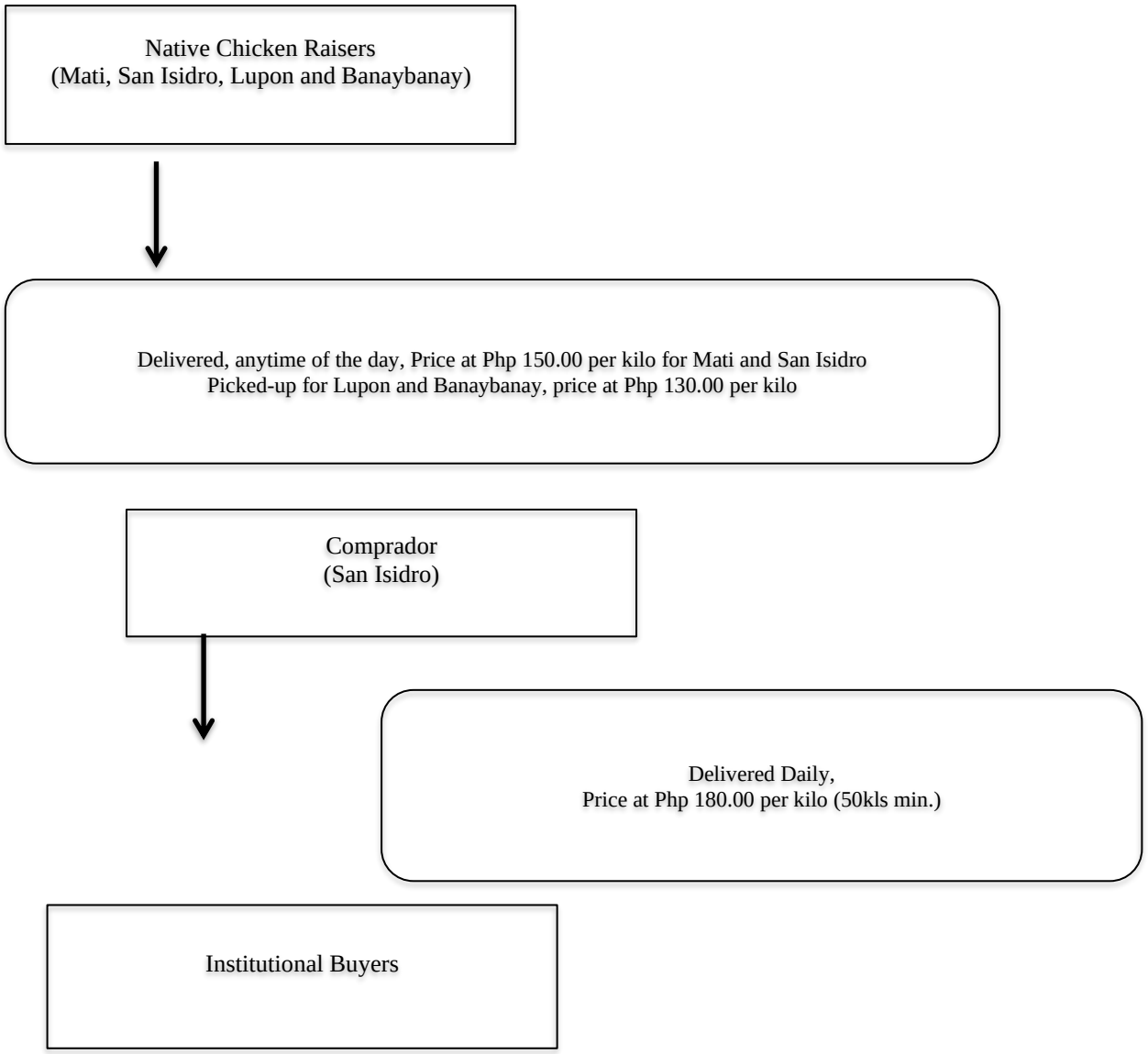

Figure 3. Product Flow of Native Chicken, Supply Chain 2

In the case of native chicken supply chain 3, the raisers directly sell native chicken to different institutional buyers located near their area. This is applicable for those individual raisers who have enough number of native chickens to be delivered to specific buyers. The chain follows no intermediaries in between the raiser and the buyer. This is an example of the zero level channel of supply chain. Buying price starts at Php 170.00 per kilogram of native chicken. Individual raisers follow this kind of transaction occasionally if the supply is already enough to meet the demand of the buyer. No significant difference between the buying prices of native chicken for this chain compared to other chain presented. If raisers will deliver directly to public market, the same buying price will be offered, starting from Php 170.00 to Php 180.00. Public markets then sell live native chickens to household or walk-in buyers at an average selling price of Php 230.00.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue II February 2025

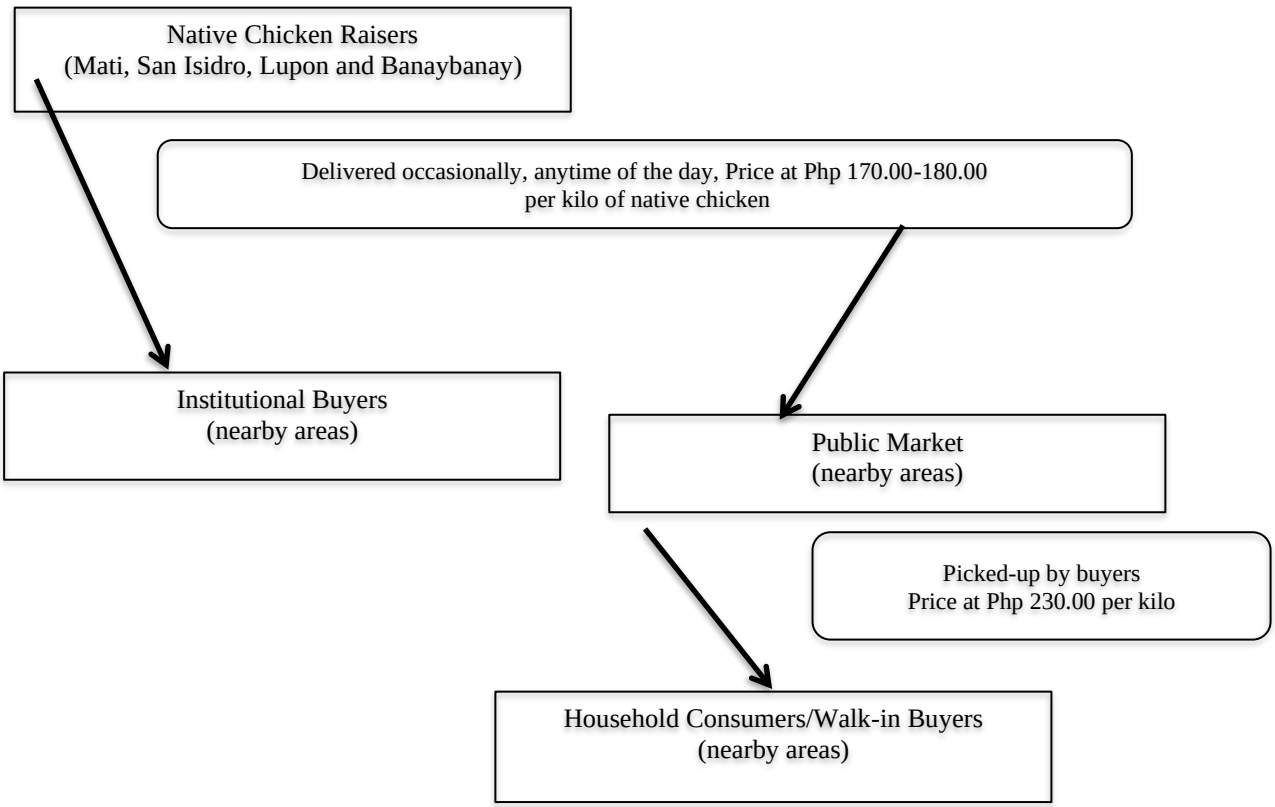

Figure 4. Product Flow of Native Chicken, Supply Chain 3

The product flow of native chicken supply chain 4 started from the native chicken raisers who sell directly native chickens to household or walk-in buyers near their area. No agreement has been established with this chain because anytime if supply is available, buyers can immediately ask for native chicken from the raisers at an average selling price of Php 150.00 kilogram. Individual raisers entertained this kind of transaction occasionally especially in the case of their neighbor's demands.

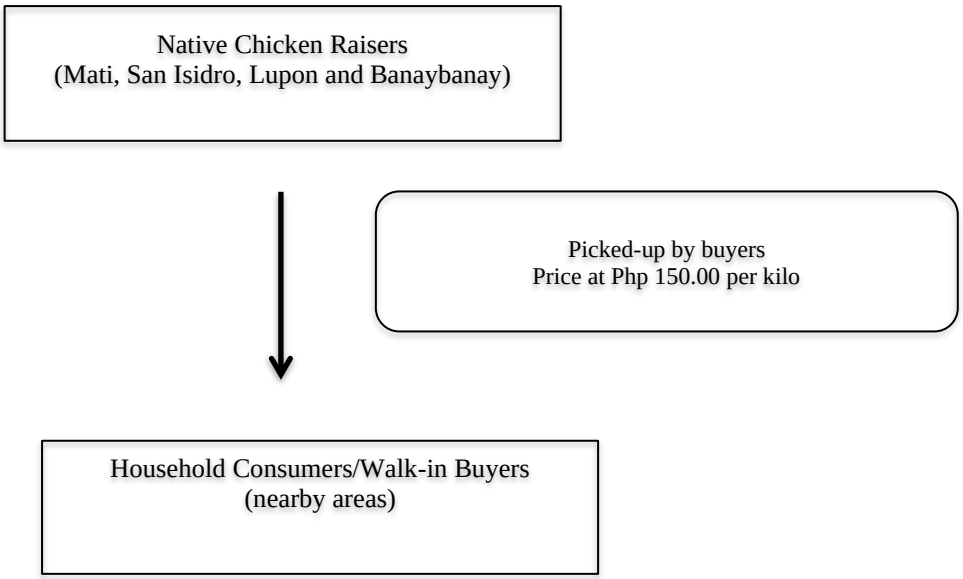

Figure 5. Product Flow of Native Chicken, Supply Chain 4

The product flow of native chicken of supply chain 5. As shown, it started similarly with supply chain 2. The product flow started from the native chicken raisers to the trader up to the institutional buyer. institutional buyer for this chain requires a minimum of 50 kilos per delivery of native chicken, this order is higher than the other buyers because Bador Barbeque restaurant's demand for native chicken is definitely bigger because they offer their clients with native chicken grilled products only.

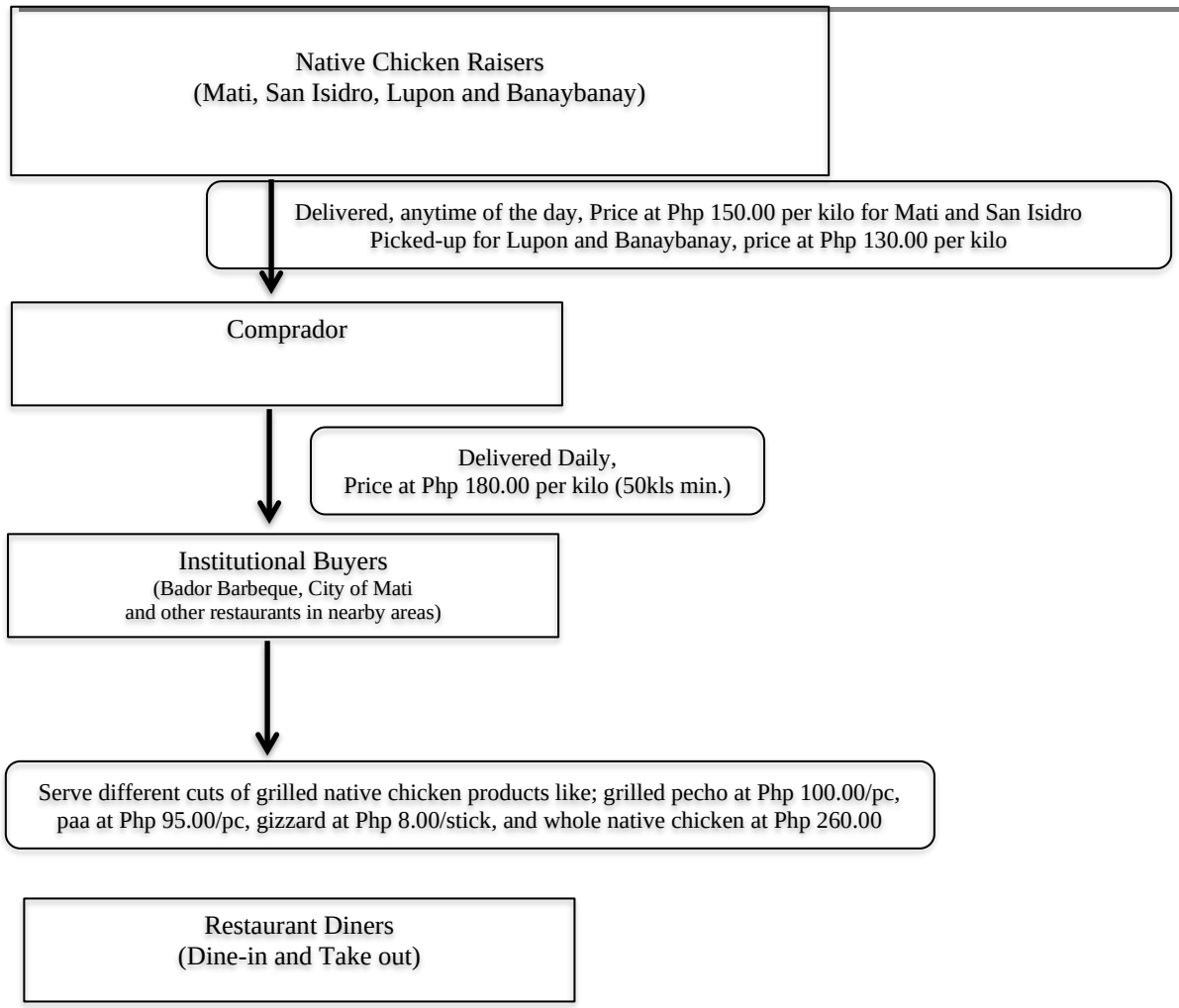

Figure 6. Product Flow of Native Chicken, Supply Chain 5

Information Flow

It is very essential to have information sharing among the key players of the chain in achieving full integration eventually leading to increased level of competitiveness. There are many literatures highlighting the role of information flow as the foundation for integration among the key players.

Chopra and Meindl (2001) stressed that information "serves as the connection between the supply chain's various stages, allowing them to coordinate their actions and bring about many of the benefits of maximizing total supply chain profitability."

Lizada, J.C., et.al. (2012) described information flow by three characteristics, and these are as follows: 1) level of information sharing; 2) information quality; and 3) IT supply chain applications. Information sharing is the sharing of knowledge among partners to serve downstream partners effectively. Knowledge will include, but will be not limited to, production status, planning process, business environment, and the goals of each player. Information quality is the indicator of quality and usefulness of information measured by the degree to which the information shared between supply chain partners meets the needs of the different partners.

Lizada, J.C. et.al. (2012) described high quality information as being accurate, frequently exchanged, recent, and containing the appropriate content. Several dimensions of information quality as accurate, timely, precise, reliable, current, and complete were also described. IT supplies chain applications are concerned with the role of information technology in permitting the large amount of information between industry participants.

The information flow was basically shared by three key participants who were the raisers, the traders *(comprador),* and the buyers. Numerous sources of market information gathered by the raisers were perceived. Information was through personal past experiences of the respondents.

The information flow of the supply chain of native chicken was fragmented in nature. There was no total industry representation that existed because it was observed that there was no full disclosure of information among the key player in the chain.

Volume and timing of production and location of the farm sites were the information coming from the upper level of the chain. While in the lower level of the chain includes classification of native chicken, volume and timing of demand, pricing and other product specifications. Key players react accordingly on the basis of the information being received; thus the information flow was bidirectional.

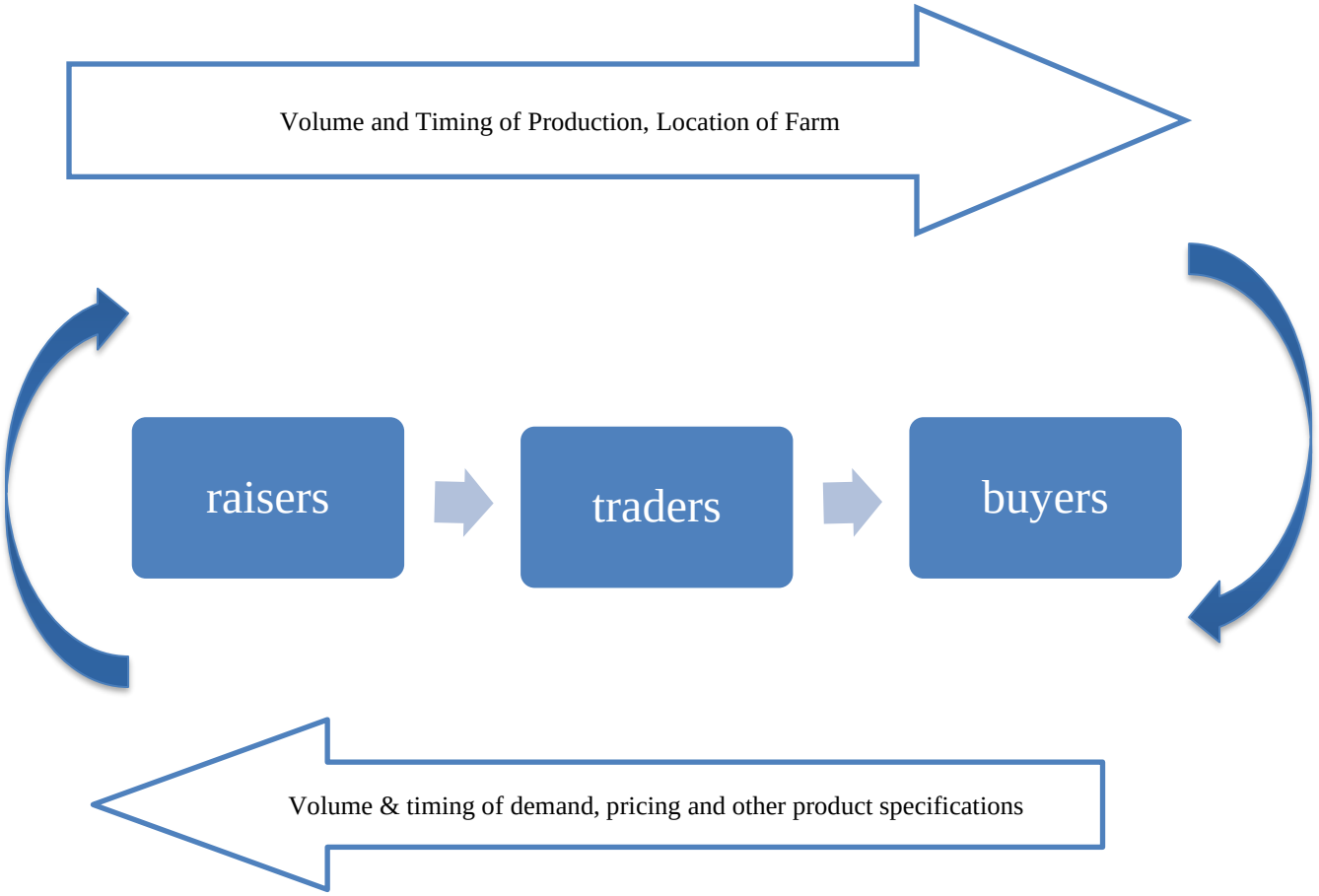

Figure 7.Information Flow in the Native Chicken Supply Chain

Key market information elements were critical in the analysis of information flow. These were production capacities/inventories, location of producers and the markets, volume and timing of demand, prices, and product quality specifications.

Information on the volume and timing of production originates from the raisers. This information then was passed through the lower level of the supply chain. The traders or compradors played a significant task of continuously looking for sources of native chicken and other information about native chicken production as a result of their agreement with the raisers. There was no information provider for the data requirements existed for the location of producers as well as the markets, thus information on this data was best supplied by the traders or compradors.

Concerning the volume and timing of demand, information emanates from the institutional buyers or the restaurants, barbecue stalls and public markets.

Native chicken raisers have limited information on end-consumer-level pricing. Information on prices was sourced out from informal sources passed through devices like cellular phones and personal talks. Pricing decision emanates from the lower level of the chain, specifically the institutional buyers where it was then passed on to traders or compradors. There existed fluctuating of prices across different value-adding activities in the

native chicken supply chain though prices at the consumer level were fairly stable all year round. It was apparent that key players of the chain have different levels of access to end-level prices of native chicken.

The final say regarding the product specifications was in the hands of the key customers. Different customers required different sets of product specifications. Refer to the discussions on the key customer and product requirements. The summary of information in the native chicken supply chain confirmed that mode of communication in the exchanges of different information among key players was through mobile phones (call

and text messaging), especially in taking orders and giving of feedbacks. A personal talk during delivery was also a method in the discovery of information. Pricing decision originates from the buyers, product quality specifications and also with the volume and timing of demand. While the volume and timing of production emanates from the native chicken raisers. The location of the producers as well as the market emanates from the trader. This information is being shared among the other key players of the chain.

Pricing decision originates downstream specifically from the institutional buyers where it is then passed on to compradors. Information on prices is sourced out from informal sources passed on through mechanisms like mobile phone and personal talks. Information concerning the volume and timing of demand emanates also from institutional buyers. While the volume and timing of production emanates from the raisers which are then passed through the downstream of the supply chain. The key customers have the final say regarding product quality specifications. The information on location of producers as well as the markets is best supplied by the trader. This is because no such information provider for the above data requirement exists.

Table 2. Summary of Information in the Native Chicken Supply Chain

Information in Native Chicken Supply Chain			
Information	Source of Information	Method of Discovery	Mode of Communication
Pricing Decisions	-originates downstream (Institutional Buyers)	Passed on to Traders Personal talks	Thru mobile
Volume and Timing of Demand	-emanates from Institutional buyers	Passed on to Traders Personal talks	Thru mobile or Personal talks
Volume and Timing of Production	-emanates from raisers	Passed on to Traders Personal talks	Thru mobile or Personal talks
Product Quality Specifications	-emanates from Institutional buyers	Passed on to Traders Personal talks	Thru mobile or Personal talks
Location of Producers as well as markets	-emanates from trader	Passed on to Buyers and raisers	Thru mobile or Personal talks

Payment Flow

Payment flow was basically simple in nature in the native chicken supply chain. All levels of the chain practiced

immediate cash payment. In some instance, during peak demand of the native chicken, the compradors advance cash payments to raisers. Raisers can avail of cash advance from the trader in cash payment for electricity bill and other emergency reasons. This cash advance was built upon the level of trust between players of the chain. The payment flow was applicable to all kinds of supply chain presented in this study. No other method of payment was observed, only cash basis and sometimes cash advances.

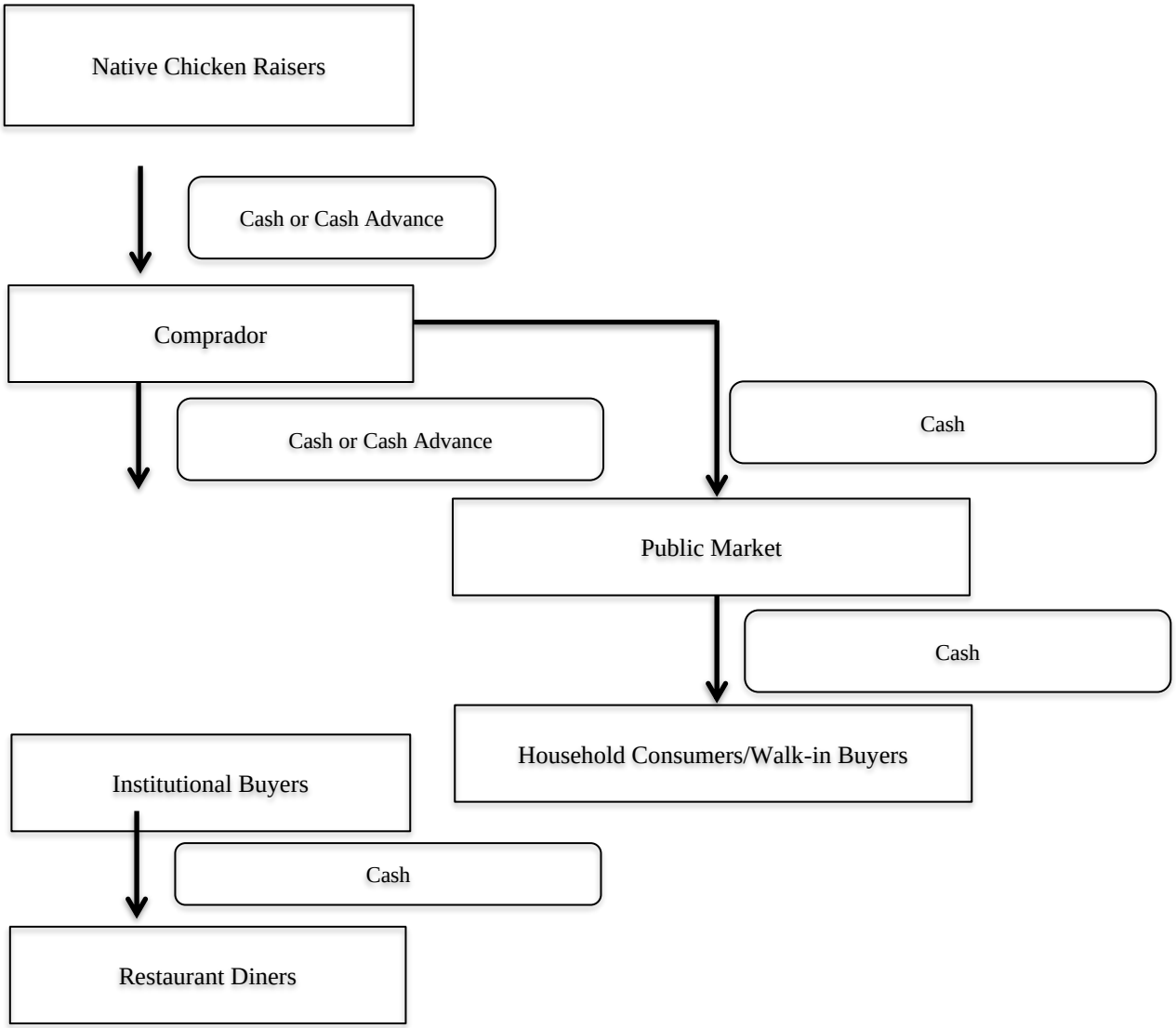

Figure 27. Payment Flow of Native Chicken Supply Chain

Activities and Processes along the Chain

Production

Backyard production was depicted as the production raising system of native chicken in the study area. Based on the result of the survey, the Province of Davao Oriental has no commercial raisers who have more than 200 heads of native chicken as reported. It was emphasized from the previous discussions that native chicken raisers were farming households who usually raised livestock and other poultry products as an inherent activity in their day to day living.

Raising of native chicken was based on their own experiences. Reproduction of these chickens was through the natural method. Raisers usually have five hens and one rooster which will eventually reproduce chicks for grow-out with no financial spending involved. It was found out that the native chicken raised were not pure-bred Darag, Joloanon/Basilan, parawakan or banaba but a mixed-bred or a combination of those breeds native in the Philippines. Traditional practices were employed in the production process even with the availability of technology packages for native chicken production. The raisers interviewed have insufficient knowledge of technologies to improve the efficiency of production of native chicken.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue II February 2025

The production was free-range to semi-free range. It is a system of low-input and low-maintenance. Native chicken provide for themselves through scavenging of food left-overs, farm by-products, earthworms, or anything edible for them. Most of the raiser-respondents provided housing, feeding and watering trays, and hatching trays for their flocks. But most of these facilities and materials were improvised and made from indigenous or recyclable material like the watering trays were made from old plastic containers or bamboo/coconut shells. Chicken cage were mostly made of bamboo and *nipa* for roofing.

It was confirmed during the survey that raiser-respondents do not control diseases of their flocks. No vaccination was given to the native chicken before and after disease infestation. Thus, raisers claimed that they experienced losses because of several causes, like diseases, theft and blamed on predators like snakes.

The computation for the cost of inputs was one of the constraints of this study because it was very difficult to estimate the value of the inputs since mostly were public good. It was specified that native chicken raisers in Davao Oriental were not entrepreneurs who religiously recording all the transactions of their native chicken production including the cost of production and income from sales. Also, raisers were not keen on maintaining financial records for any transaction made by them with the comprador or other buyer. As mentioned in the previous discussions, raisers engaged in rasing native chicken as a source of additional income, food for unexpected guest, source of cash for emergency cases, and will slaughter chicken if they have no other viand for a particular meal time.

Key Players and their Roles

Key players of the native chicken trading performed the same roles and responsibilities in the different study area. The key players in the native chicken industry are the raisers, trader who is categorized as comprador and buyers comprising of institutional buyers (comprised of restaurants, public market, barbeque stalls and the household or walk-in consumers). The native chicken industry is customary industry wherein relationships among key players are closely intertwined, particularly the traders and the institutional buyers. Informal arrangements and unwritten practices in trading and financing had been established through the years.

Table 3. Key Players of Native Chicken Supply Chain and their Roles

Key Player and their Roles	
Raiser	Refer to an individual who are producers of native chicken in Davao Oriental. Most of the native chickens they raised are mixtures of different strains, like *basilan* and *darag*. Generally, the native chicken raisers are under backyard or village production. Typical backyard poultry raising maintains an average of no less than 20 heads of native chicken. Some native chicken raisers deliver their produce to traders or directly to buyers.
Trader	Categorized as *comprador*. Refer to an individual who buy native chicken directly from raisers in the farm and subsequently sell these chickens to buyers. They are the primary source of information on the sources of live native chicken and location of raisers. They are also the bulk buyer of native chicken from different raisers. Traders observed an unwritten agreement in setting buying prices during transactions. They will deliver live native chicken to buyers thru motorcycles.
Institutional Buyers	The institutional buyers referred in this study are the restaurants, public market and barbeque stalls from which the supply chains were traced. Institutional buyers buy native chicken with an average weight of 700 grams. They determine the price by kilogram. They are not particular on the breed specification of the native chicken but instead on the regularity of the supply.
Household Consumer or Walk-in Buyers	The end consumer of the supply chain of native chicken who enjoys eating different menus of native chicken given its distinct flavor, taste and texture.

Identification of Sources and buyers of live native chicken

The sources of the live native chicken were found through "*word of mouth*". The marketing transaction started when comprador visit barangays to look for live native chicken for sale. In some cases, raisers transport their native chicken for sale to the public market during *tabo-tabo* or market day of every municipality. The *tabo-tabo* or market day provides a venue for the raisers and traders to have market connections.

Classification/Grading of Live Native Chicken

The usual practice of classifying native chicken was based on the subjective assessment agreed upon by the buyers and the traders in terms of age and weight of the native chicken. The trading of native chicken was per kilogram. The weight was determined through the use of weighing scale subsequently setting the price of the native chicken.

Pricing of Native Chicken

The prices of native chicken fluctuate accordingly by season. The Table 15 showed the prices of native chicken set by the key players with due consideration to the seasonality of the produce. The prices decreased by Php 20.00 to Php 30.00 per kilo during peak supply and low demand. The trader's buying price was between Php 20.00 to Php 30.00 per kilo lower than the price set by the institutional buyer. Notably, the price was based on the weight and age of the native chicken. Native chicken weighed less than 700 grams was cheaper than the native chicken which weighed more than 1 kilogram, has the highest price.

Table 4. Prices of Native Chicken per Kilo Set by Key Players According to Seasonality of Demand and Supply

Seasonality	Raiser (in Php)	Trader (in Php)	Buyer (in Php)
Lean Demand/Peak Supply	150.00	180.00	230.00
Peak Demand/Lean Supply	180.00	200.00	260.00

Manner of Payment

The method of payment was usually on cash to cash basis. In some cases, credit sale was also made through cash advances. This was done with arrangement between involved key players with trust and confidence as the measure.

Handling and Transporting

The handling of native chicken demands simple process from the raisers to the traders, then ending up with key customers. The handling incurs a very minimal cost. The live native chicken were simply tied on the legs so as to prevent them from flying or running then eventually bundled and put or hanged in the motorcycles as their means of transportation.

The live native chickens were transported from the farm to public market by the raisers using their motorcycles. The comprador used motorcycles with wooden sticks, letting the chicken hang down and sometimes with large baskets or *bukag* on the side in transporting the native chicken to the key customers in the Province. Compradors directly delivered the live native chicken to the institutional buyers on the agreed time of delivery set by the buyer.

Processing of Native Chicken

Native chickens were sold live from the raisers to compradors to institutional buyers (restaurant). According to the institutional buyers, native chicken bought will be slaughtered one to two days after delivery. In some cases, public market sell live native chicken may be dressed for additional service fee of Php 15.00 to Php 20.00 but

there were also retailers in the public market with free service fee in dressing the live chicken.

The processing of native chicken entailed simple slaughtering technique. The primary procedure involves manual slitting or cutting of the neck of the live native chicken using utility knife until the chicken dies. Then, it will be soaked in boiling water (not too hot because it will cook the chicken meat) to eventually remove the feathers. The chicken carcass will then be washed for final cleaning. The technique in slaughtering native chicken was learned through experience. Depending on the skills of the processor, slaughtering of native chicken takes 15-20 minutes.

Institutional buyers bought live native chicken. One of their kitchen crews will slaughter the native chicken and cook them into different menu such as lechon manok, chicken adobo, chicken tinola, grilled chicken among others and serve it in the restaurants.

Storage of Native Chicken

Maintaining a frozen dressed native chicken inventory was not common in the study area. Storing dressed native chicken in the freezer may alter the color and texture of the chicken carcass resulting to reduced consumer acceptability.

Only surplus live native chicken were kept in the chicken pen (makeshift chicken cages) by institutional buyers to lessen the impact of demand and supply uncertainty.

Critical Logistic Issues and Concerns in the Native Chicken Supply Chain

Production

High mortality and low productivity resulting in inadequate economic returns for the raisers were the key issues in native chicken production. Most of the raisers were still employing traditional free-range production practices.

Consistently, according to Lizada, J. et al. (2012), several literatures noted that advances in technology do not benefit backyard raisers due lack of access to important inputs such as high quality stock, credit, and extension services. She further noted that studies show that backyard raisers are not interested in extension services or new technology for there is little incentive because of little gain from a very small production base.

The irregular and extreme weather condition due to climate change plus the given inherent biological characteristics of native chicken affected its breeding productivity and intensified the prevalence of diseases, which resulted to decreasing production, if not totally wiping out all the stocks.

The issue on the high mortality rate and low productivity reflected to uncertainty and noticeable seasonality of supply leads to the disparity in the prices of native chicken at the disadvantage of raisers as they were considered as price takers.

Moreover, operational proficiency in production is wanting, considering that the entrepreneurial mindset was not entrenched among native chicken raisers. Native chicken raisers were not keen on recording cost of production, income from sales, and maintenance of financial records which served as bases in evaluating business performance and enhancing profitability given the limited resources.

Marketing and Logistics

The study revealed that market information was uneven with raisers as price takers. As discussed earlier, most of the raisers do not sell their native chickens to the final customers but rather pass through the comprador. The raisers have no control on how and to whom native chickens were to be sold.

The current attributes of selling native chicken by raisers, which involves individual transporting to the trading areas (during tabon-tabon or market day) and transaction with the compradors, does not maximize the benefits of economies of scale. There was no observed entity that consolidates or pools the produce before it is integrated

in the market. This can possibly reduce the transaction cost and increase the bargaining power of the raisers.

As mentioned earlier, the market was unconcerned of the strains as long as it can generate profits for the key players consisting of raisers, traders, and institutional buyers. Buyers were concerned on the regularity of delivery of the produce especially during season of peak demand. Thus, buyer's preferences were the cross-bred native chickens that are fast growing, not susceptible to diseases, and resistant to frequent changes of weather condition. The native chicken industry is so fragmented that shared perceptions on the key product attributes by the supply chain players is non-existent.

The problem in marketing was further aggravated by the absence of standards. Notably, subjective assessment which is acquired from the years of involvement and experiences in trading native chicken was the basis in the customary practice of classifying or grading the live native chicken.

There were incidents of chickens dying due to severe heat and overcrowding during transport. Product handling that will preserve product quality and one that may capitalize on economies of scale remain a challenge. Mortality rate during the travel time could account from 2 – 5% of the total number of flocks purchased.

There were no established slaughtering facilities exists to slaughter/process native chickens in the Province of Davao Oriental in contrast to hogs and other livestock. Slaughtering of live native chickens was manually done and usually at home before it is delivered for stall display. In the public market, retailers of live native chickens will slaughter the native chickens instantly at the request of their customers.

Inadequate technical know-how in the determination of health condition of the native chicken will compromise food safety and health of the consumers because there was no control measure for that could facilitate the identifications of disease-infected chickens.

One of the immediate concerns of the native chicken industry was the availability of trading areas. Although the local government collects fees, there was no definite area allocated for trading of live chicken except at the roadsides and other street corners. Poor market facilities were one of the complaints of the traders.

CONCLUSION

The study highlights several inefficiencies in the native chicken supply chain in Davao Oriental. Key issues include fragmented market access, inconsistent pricing mechanisms, logistical challenges, and weak financial linkages. Farmers primarily operate in an informal system, heavily relying on traders for market access, which often reduces their profit margins.

Product flow in the supply chain varies depending on market accessibility and buyer preferences. Farmers who sell directly to consumers achieve better pricing but face challenges in maintaining a steady customer base. Those who rely on traders experience lower profitability due to intermediary mark-ups. Institutional buyers, such as restaurants and market vendors, dictate quality and volume requirements, influencing price negotiations.

Information flow remains a critical weakness, with most transactions conducted through informal communication channels. The lack of access to real-time market data limits farmers' ability to make informed pricing and production decisions. Establishing a structured information-sharing system could significantly enhance supply chain transparency and efficiency.

Payment systems are predominantly cash-based, with occasional cash advances provided by traders. The absence of financial support mechanisms such as credit facilities and cooperative financing restricts farmers' capacity to expand production and invest in quality improvements.

Logistical inefficiencies further constrain supply chain performance. The primary mode of transportation, motorcycles, increases mortality rates during transit and affects product quality. Poor infrastructure and inadequate storage facilities contribute to post-harvest losses, reducing profitability.

Despite these challenges, demand for native chicken remains strong, presenting opportunities for supply chain

improvements. Addressing logistical bottlenecks, improving financial access, and enhancing farmer-trader relationships can lead to a more competitive and sustainable native chicken industry in Davao Oriental.

RECOMMENDATIONS

1. Establishing cooperatives among native chicken raisers can enhance their collective bargaining power, facilitate bulk sales, and improve price negotiations with institutional buyers.

2. Investing in dedicated trading areas, processing facilities, and cold storage systems can minimize losses and enhance product quality during transit.

3. Implementing a digital platform for real-time market data can improve price transparency, enabling farmers to make informed decisions regarding sales and production.

4. Introducing microfinance programs and credit facilities tailored to native chicken farmers can support production expansion and investments in farm improvements.

5. Establishing a centralized transportation network or cooperative-owned delivery systems can reduce mortality rates and ensure consistent supply chain efficiency.

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