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# Value Chain Analysis of the Philippine Native Chicken Industry in Western Visayas Region, Philippines

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## ABSTRACT

The Philippine native chicken industry contributes significantly to the country's food security and economic growth, with Western Visayas as the country's top-producing region. The pandemic in 2020 paralyzed the transportation system, thus affecting the distribution of food and agricultural products. This descriptive study characterizes the native chicken value chain in Western Visayas. In particular, it aims to provide an overview of the current state of the native chicken value chain using the backward tracing approach -- tracing backward all the key players from consumers to the input suppliers. This study maps out the supply or value chain, showing the a) activities and processes involved; b) key players and their roles; c) key customers and their product requirements; d) flow of product, payment, and information; and e) vertical and horizontal linkages. Results showed that in Western Visayas, native chickens are usually raised in the backyards of rural households, generating an estimated monthly income of PHP 2,122.82 per household. Consolidators bring together native chickens from far-flung areas-- to come up with the desired quantities needed by their eventual end-markets. Native chickens are sold live or dressed with cash as the most common form of payment. There is a ready market for native chicken in the region; however, the industry remains fragmented. There are no standards for weight, size, age, and quality of meat. Marketing and pricing remain arbitrary in the absence of product standards. It is challenged by increasing input costs due to the pandemic.

## KEYWORDS

native chicken, poultry, value chain analysis, Western Visayas, Philippines

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## INTRODUCTION

Chicken is one of the most domesticated fowl in the world raised for its meat and eggs. In the Philippines, chicken is a vital source of food and livelihood for Filipinos. There are three types of chicken raised in the country, which are classified according to breed and purpose of production. *Broilers* are raised for meat, *layers* are raised mainly for egg production, and t*raditional* or *native chickens* are raised for meat or eggs because of their distinctive taste. The unique taste of Philippine native chicken is due to its high free amino acid content (Cocjin, 2011).

Native chickens are commonly raised in rural Filipino households, serving as the family's source of protein (Nakkazi, et al., 2014; Bwalya & Kalinda, 2014) and of additional income (Dusaran & Pabulayan, 2009). Moreover, native chickens are used as gifts, as tender in debt payments, and as object in the barter with other goods or services (Bwalya & Kalinda, 2014). Native chicken of a particular color can also be used in folk rituals. In Concepcion, Iloilo, pure black or white native chickens are used in *padugo*. *Padugo* is a ceremony where fresh native chicken blood is used to stain newly built houses or buildings to protect and prevent elementals from residing.

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Raising native chickens does not have a production standard, though they require minimal production inputs while producing high-value output in the form of eggs and meat (Dusaran & Pabulayan, 2009; Bwalya and Kalinda, 2014). They can thrive with local resources (Cabarles, 2018) like rice, corn, kitchen leftovers, and other by-products of vegetable farming. This encourages waste recycling in rural households and farms. Native chicken meat is popular among health-conscious individuals (Bwalya & Kalinda, 2014) because of its health benefits. They are often raised free range and in cruelty-free set up with little or no synthetic chemicals. Antibiotics and vaccines are seldom used on native chicken. Native chickens also have higher protein and calcium content in raw and cooked forms when compared to broilers (Banos, 2007).

The Western Visayas Region remains the top-producing region for native chicken in the country. It produced a record of 13,056,400 birds in 2021 (Philippine Statistics Authority, 2022). The region is composed of the provinces of Aklan, Antique, Capiz, Iloilo, Guimaras and Negros Occidental. Native chicken production is widespread all over the region (Dusaran & Pabulayan, 2009), with Iloilo being the top-producing province.

There is a great diversity among native chickens in the Philippines. In Western Visayas, they vary in morphology due to the hybridization of parental lineages and genetic mutation (Cabarles et al. 2012). The region has at least three popular breeds: *Darag*, *Bisaya*, and *Jolo.* Smaller body sizes characterize the *Darag*, whereas the *Bisaya* chicken breeds are more flighty. They are also known for their ability to lay more eggs (Cabarles 2018). The *Darag* breed has an orange-brown plumage and is characterized by its tender meat and distinctive taste. The *Jolo* or *Joloanon* has a blocky body formation, snake-head shape, long neck, and long shank (Cabarles 2018). The *Jolo* chicken is known to have good stamina; thus, they are often used in cockfighting. This breed is believed to have originated from Jolo, Sulu, but reached Western Visayas through Muslim merchants who traded across the country (Cabarles et al. 2012). As observed by key informants, the Jolo rooster tends to be cruel to other chickens, especially the younger ones. Crossbreeding it with *Bisaya* hen tends to minimize the cruel trait. Crossbreeding native chickens with other breeds is a common practice to improve production quality. For example, the Kabir and native chicken crossbred have improved egg production and quality (Bejar et al. 2017).

In 2019, a novel disease known as coronavirus or COVID-19 emerged and has caused a global pandemic. Flu-like symptoms characterize this disease and can be transmitted directly by infected individuals. Despite being a health concern, the pandemic paralyzed transportation systems, affecting the distribution of food and agricultural products, native chicken chickens included (Food and Agriculture Organization, 2021). Knowledge of how the COVID-19 pandemic has affected the Philippine native chicken supply chain in the region is vital to reconfiguring the industry to maximize its production potential. Thus, there is a need to revisit the Western Visayas native chicken industry and redefine industry updates and opportunities.

This study mapped and assessed the value chain of native chicken in Western Visayas. Specifically, it has provided an overview of the current state of the native chicken value chain in Western Visayas during the COVID-19 pandemic. The study mapped out the supply or value chain, showing the a) activities and processes involved; b) key players and their roles; c) key customers and their product requirements; d) flow of product, payment, and information; and e) vertical and horizontal linkages.

Relationships among actors from different levels or nodes are referred to as vertical linkages. Since most industry actors are backyard farmers, the relationship among actors is generally fragmented. Relationships are informal and primarily based on trust. The *"suki*" or the buddy system is a prevalent marketing relation in the region among actors and most types of markets in the Philippines. This personal relationship yields mutual benefits for both the buyer and the seller. These benefits are competitive prices, good quality products, loyalty, exclusivity, and long-term friendships that may exist outside the business boundaries.

Horizontal linkages refer to relationships among key players with the same role in the value chain. Relationships are often informal. Generally, the backyard native chicken industry is fragmented because industry players have no connection.

The study is vital for policymakers, potential and existing industry participants, and regulatory agencies.

## MATERIALS AND METHODS

The study focused on the Philippines' Western Visayas Region (Region VI), shown in Figure 1 below. Both primary and secondary data gathered from April 2021 to June 2022 were used in the study.

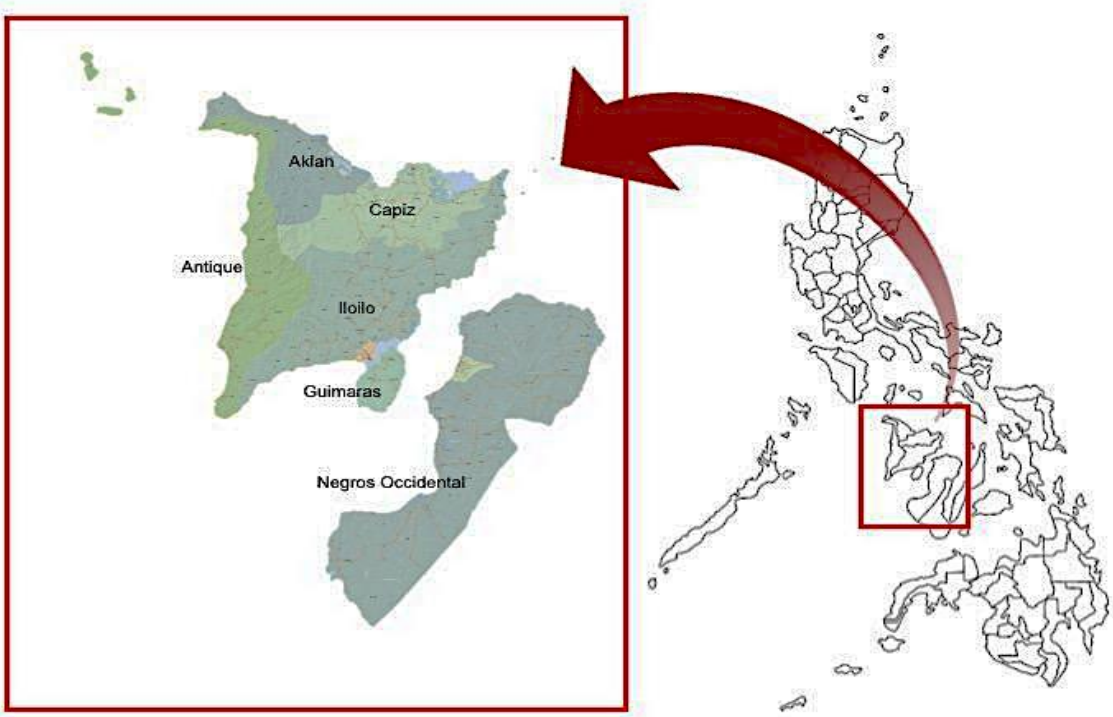


**Figure 1.** Location map of the research area

Data from the 36 survey participants were gathered by remote and face-to-face interviews using a semi-structured survey instrument. Representation across the native chicken value delivery network was ensured. Survey participants include input suppliers, integrators, processors, retailers, and restaurant owners. Informed consent was signed before the face-to-face interview of respondents from February to March 2022.

The baseline from existing literature was validated using two (2) online focus group discussions (FGDs) conducted in February 2022. Informants include representatives from government agencies, native chicken farmers, native chicken researchers, restaurant owners, and other stakeholders. The applicability of the existing native chicken value chain before the pandemic was reviewed. However, due to mobility and other restrictions, the participation of some industry players was constrained. The reasons cited include the lack of working knowledge of online video-conferencing platforms, work-from-home arrangements, and poor signal.

Published and unpublished materials such as government documents, websites, reports, conference proceedings, and journals were also reviewed. Descriptive analysis was used to characterize the value chain of native chicken in Western Visayas.

Ethical research practices were followed during the study. Participation was on a voluntary basis—their right to access the information and the right to withdraw at any time was made clear. Self-identifying terms and information were avoided. All information gathered was kept in a password-protected computer, and the survey instruments were appropriately discarded after the end of the study.

## RESULTS AND DISCUSSION

*Value Chain Map of Native Chicken in Western Visayas*

The native chicken industry value chain in Western Visayas is simple and straightforward. This can be divided into six (6) major processes: 1) input provision, 2) production, 3) consolidation, 4) processing, 5) distribution, and 6) consumption. This chain of activities and processes is summarized in Figure 2, while the key players per activity are summarized in Figure 3.

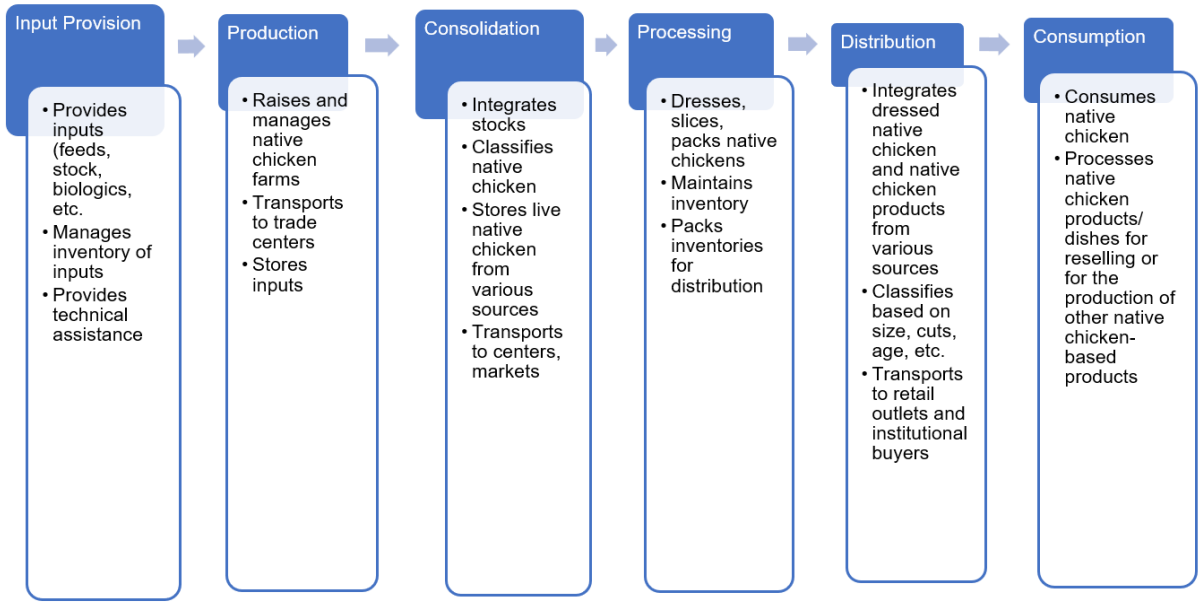


Figure 1. Key activities and processes of the Western Visayas Native Chicken Industry Value Chain

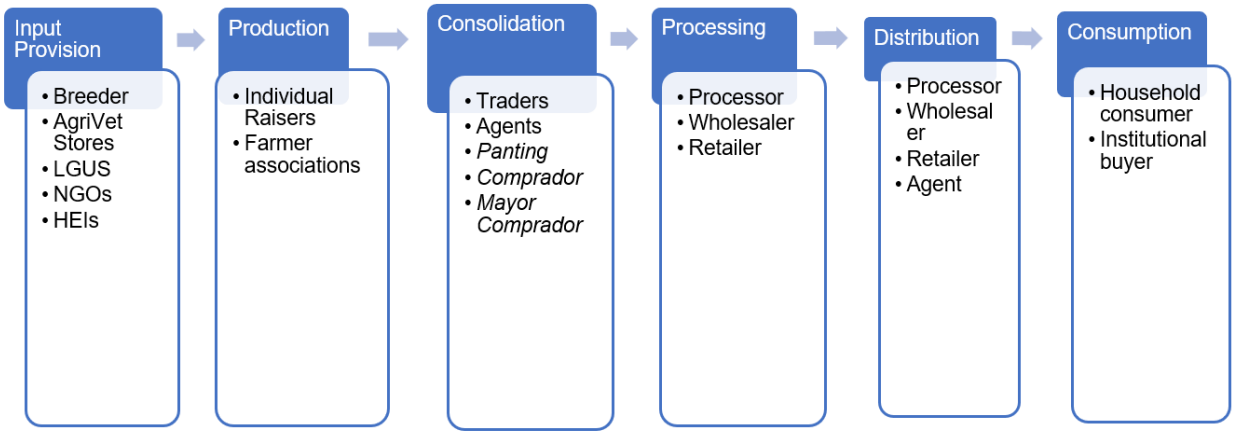


Figure 2. Key activities and players of the Western Visayas Native Chicken Value Chain

**Input provision** involves the supply of necessary materials to produce native chickens. Inputs include breeders, feeds, biologics, housing, and other veterinary supplies. Among the activities in input provision include product distribution, financing, risk-taking, customer support, and capacity-building for farmers.

Inputs in the production of native chickens are sometimes sold by credit to some farmers. However, credit extension exposes input suppliers to risks when production fails. Occurrences of pests, diseases, and natural disasters are just some instances where production may fail.

Key players in the production of inputs are local merchants in native chicken-producing municipalities such as agriculture-veterinary (agrivet) supply store owners and native chicken breeders/raisers. Local government units (LGUs) also provide native chicken breeders to farmers, often as part of their chicken dispersal projects, livelihood grants, or poverty alleviation programs, especially in poor, rural communities. Non-government organizations (NGOs) such as Conservation International

Philippines and World Renew have provided native chicken livelihood projects for their post-Super Typhoon Yolanda (ST Haiyan) disaster rehabilitation. Higher Education Institutes (HEI) such as West Visayas State University (WVSU), Central Philippine University (CPU), and Capiz State University (CAPSU) have embarked on research projects on native chickens and have provided inputs to several native chicken farmers. During the pandemic, input providers faced a significant issue with the increased cost of feed ingredients. Key informants estimated that costs increased by up to 25% due to mobility restrictions hampering the transportation of farm workers and inputs.

**Production** involves all activities required to transform inputs into a finished product. The industry produces four outputs: fresh eggs, chicks, breeders, and meat. According to the survey, a native chicken hen lays an average of 76 eggs annually. Quality eggs are ovoid, off-white to light brown, with an average weight of 45 grams.

Chicks are classified as either day-old chicks or hardened chicks. Day-old chicks are newly hatched eggs. Good quality chicks are active, alert, have bright eyes, are uniform in size with the clutch, and have no extra appendages. In the region, hardened chicks, locally called *kinuom*, are 30 to 45 days old. Farmers prefer *kinuom* because they are ready to set loose in the range.

Breeders are used as stock sources in the farms. They are assessed based on age, breed, weight, and physical appearance. Good breeder hens are 18 to 20 weeks old with bright eyes, shiny feathers, reddish combs, and an average weight of 1.5 kilograms. Those from a chicken line with good egg-laying ability are usually preferred as breeder hens. On the other hand, good breeder roosters are 20 to 24 weeks old, active, aggressive, with bright eyes, reddish combs, and shiny feathers.

There is no quality standard for native chicken meat. Restaurants prefer native chickens weighing 700 to 850 grams as the main ingredient in whole roasted chicken (*lechon manok*) because of their young, juicy, and tender meat. On the other hand, native chickens weighing more than a kilo are preferred when cooking chicken porridge or *arroz caldo*.

Based on the scale of operation, raising native chickens in Western Visayas can be categorized as backyard or commercial. Backyard farming involves less than 100 heads, with an average of 5 to 10 hens and 1 to 2 roosters per household. Households engage in backyard native chicken production for food security and as a source of additional income. As the region's dominant production scale, backyard native production uses low input and low-cost production practices. This practice is spread all over the region. On the other hand, commercial farms are often large-scale business undertakings with an integrated production system with more than 100 heads. The commercial farmers in the region either adopt exclusive pure-bred *Darag* or improved chicken breeds (e.g., Rhode Island Red, cross-bred).

These two production systems can also be classified as semi-intensive or intensive based on the technology being adopted or management practices being observed. Breeding in backyard production is left by chance, while commercial farms use high-quality breeders with a rooster-to-hen ratio of 1:7. A good rooster-to-hen ratio ensures the quality of eggs and chicks. The stock of backyard farms is often raised free range or made to roam around the backyards, while commercial farm-raised chickens are semi-confined depending on the chicken’s life stage. Commercial native chicken farmers in the region have adopted technologies based on the innate characteristics of the chicken breed they raise.

On feeding, backyard-produced chickens are left to scavenge and are often supplemented with kitchen leftovers. Feedstuff is the same for the whole flock despite the age group, and it varies depending on the availability and sufficiency of ingredients. On the other hand, commercial farms use a combination of commercially available inputs and natural feeds depending on the life cycle stage. The dominant practice in the region is to use commercial feeds until chicks are about two months old, after which they are allowed to graze freely on naturally occurring feedstuffs.

Backyard farms have a high mortality rate because they seldom use drugs to address pests and diseases. For commercial farmers, vaccination is often practiced, while organic native chicken farmers in the region use different natural concoctions as alternatives for vitamins and antibiotics.

Backyard farmers sell their produce when in dire need of money, when pests occur, and when chicken prices are high. On the other hand, commercial farms sell their produce based on market specifications, mainly to institutional buyers. Commercial farms follow a simple recording system, especially for sales, while there is none among backyard farms.

An estimated average income of PHP 2,122.82 per household was reported as additional income of backyard native chicken farmers. Meanwhile, commercial native chicken raisers, with an average of 102

heads, reported an additional estimated income of PHP 7,082.26. Table 1 presents the comparative income and expenses for backyard and commercial farms.

Table 1. Comparative income and expenses for backyard vs. commercial native chicken farms, Western Visayas, 2022.

| Particulars (in months) | Backyard NC Farm | Commercial NC Farm |
|---|---|---|
| **Estimated Monthly Sales** | **PHP 3,555.43** | **PHP 13,657.79** |
| Income from culled breeders | 3,438.04 | 10,014.29 |
| Income from eggs | 900.00 | 1,800.00 |
| Income from hardened chicks | | 1,843.50 |
| **Estimated Monthly Production Costs** | **PHP 1,157.39** | **PHP 5,304.10** |
| Feeds | 860.67 | 3,928.57 |
| Biologics | 127.65 | 324.86 |
| Sundries | 150.00 | 193.33 |
| Direct Labor | 200.00 | 356.00 |
| Electricity | 219.44 | 483.33 |
| **Estimated Overhead Expenses** | **PHP 275.22** | **PHP 1,271.43** |
| Repair and Maintenance | 151.67 | 333.33 |
| Transportation Expenses | 156.52 | 938.10 |
| **Net Profit** | **PHP 2,122.82** | **PHP 7.082.26** |

**Consolidation** brings together native chickens from different farmers to reach the market's desired volume, specification, and demand timing. Consolidators or traders play a critical role in the region, considering that most of the native chicken supply is sourced from small backyard farmers from far-flung areas.

Consolidators have three levels. *Pantings* are the first-level consolidator sourcing native chickens from households or backyard farms. *Compradors* are second-level-consolidators sourcing native chickens directly from farmers or *pantings*. The quantity of native chicken purchased is based on the market's available volume. *Mayor compradors* or *por mayors* are third-level consolidators. They can source their native chickens directly from farmers, *pantings,* and *compradors. Mayor compradors* can extend capital or advance cash to *compradors* or *pantings* where they buy. This ensures a steady supply of native chicken to their end markets. *Mayor compradors* serve as the link to institutional buyers, and they often control the price of native chicken in the market due to the volume they sell.

Consolidators were most challenged during the pandemic. Among the issues they raised were 1) lack of native chicken supply in the market, 2) reduction of deliveries to end users, and 3) high prices of native chicken. The lack of native chicken supply in the market is due to mobility restrictions of farmers to go to municipal centers, and consolidators cannot directly source native chicken from farmers. The reduction of deliveries to end markets is attributed to the closure of food business establishments. However, this paved the way for the online food delivery system (OFDS) trading of native chicken meat and native chicken-based products. Prices of native chicken increased in most cases because costs are passed on to end users.

**Processing** involves transforming native chickens into other product forms. Minimal processing is done for native chickens, often sold live in municipal markets. The most common processed forms in the market are (1) fresh, warm carcass, and (2) fresh, chilled carcass. Household buyers prefer fresh, warm carcass – chickens are sold live and slaughtered *in situ.*

On the other hand, fresh, chilled carcass refers to dressed native chicken commonly sold in major grocery stores in the city centers and kept frozen until purchased by consumers. They are usually slaughtered on the day of delivery to major grocery stores or institutional buyers. Processing also involves cutting, sorting, and packaging, and this is limited to sellers in municipal markets. No other value-added native chicken products are commercially sold in the region.

**Distribution** involves buying native chickens, either wholesale or retail, and matching the existing inventory vis-à-vis the volume and quality specifications of the downstream market. In addition to consolidators, farmers, wholesalers, and retailers are also involved in product distribution. Native chicken farmers usually sell 1-4 heads in the municipal market. Income from the sale is used to buy household needs. Retailers buy live from *compradors* and sell dressed native chicken in the municipal markets. These are purchased by household consumers or restaurant owners. Wholesalers also source their live native chickens from commercial farms and *compradors,* but unlike retailers, their target markets are restaurant operators, major grocery stores, and *lechoneros*. The distribution also involves integrating, classifying, and transporting goods. *Integration* is done to meet the quantity requirement of a target market.

On the other hand, the *classification* of native chicken is a value-adding activity designed to meet the target market's quality requirements. Finally, *transportation* is an activity to deliver goods from native chicken farmers in far-flung barangays to municipal centers. Demand for native chickens is in the municipal and urban centers.

**Consumption** involves buying native chicken goods for household use or producing other native chicken-based products. The native chicken industry caters to a diversified market because of its many product forms. Hence, product requirements and specifications differ based on the specific needs of the distinct market.

Native chicken meat has two well-defined markets: household consumers and institutional buyers. Both markets have distinct requirements for native chicken meat. Household consumers buy native chickens for consumption and prefer fresh, warm carcasses slaughtered *in situ*. The household budget determines the size and weight requirements. For institutional buyers like hotels, restaurants, resorts, and other food establishments, product specifications differ depending on the final product they intend to prepare. Among popular native dishes having native chickens as their main ingredient are *lechon manok* (whole roasted chicken), *tinuom* (native chicken soup wrapped in banana leaf), *arroz caldo* (rice porridge), and *inasal* (char-grilled chicken). Native chickens weighing less than a kilo are usually used for *lechon manok* because of their tender meat. Those weighing more than a kilo have tougher meat but are ideal for *arroz caldo.* The latter requires prolonged boiling to extract the flavor; thus, an older, tougher chicken is preferred.

During the pandemic, the government also became an institutional buyer when they purchased large volumes of native chicken meat for relief distribution in quarantine facilities and COVID response centers. Regardless of the target market, preference for native chicken is attributed to its distinct taste, texture, leanness, and pigmentation.

### Geographic flow

The geographical flow presents the movement of the commodity across a spatial dimension. Native chicken production is prevalent across the region, and there is higher demand in the municipal and urban centers where products are consolidated. Unsold native chickens in municipal centers are often brought to provincial or urban centers where the demand is higher. These major provincial or urban trading centers are in Kalibo in Aklan, San Jose in Antique, Roxas City in Capiz, Jordan in Guimaras, Iloilo City in Iloilo, and Bacolod City in Negros Occidental. Trade among these provinces also happens where Iloilo City, Bacolod City, and Boracay Island are key commodity destination centers.

### Product flow

Eggs produced by input suppliers are either used for hatching or consumption. They can be naturally incubated by the mother hen or artificially incubated through an incubator. Hatched eggs are sold to farmers as day-old chicks (days after hatching) or hardened chicks after two to three months. Farmers prefer the latter because they are more resilient during transfers and do not require further brooding. Unfertilized eggs are sold as *balut*, a local Philippine delicacy. Eggs sold for household consumption fetch higher prices as they are marketed as organic and are preferred by the health-conscious.

To backyard farmers or producers, native chickens are raised primarily for eggs and consumed as meat. They are also used as gifts, for barter in exchange for service, or sold to direct consumers. Commercial farmers mainly produce live native chicken sold in higher numbers through formal marketing channels. Live chicken of various specifications is the main product produced by the farmer producers. Live native chicken is preferred for consolidation and distribution. Minimal processing is done as fresh, warm carcasses are mostly preferred by consumers. Among household consumers, product transformation

occurs when the live native chicken is slaughtered, packed, and sold. Likewise, the final transformation occurs for institutional buyers in preparing various native chicken-based food items.

**Payment Flow**

Payment flow for the native chicken is simple and often on a cash basis. Consignments can occur between *compradors* and institutional buyers. Cash payment, however, is made two to three days after delivery. During the pandemic, the adoption of non-cash payment is prevalent but only through the OFDS when ordering native chicken meat from online sellers or native chicken dishes from institutional buyers. However, this mode of payment is dominant but not limited to major urban centers like Iloilo City, Bacolod City, Roxas City, and Boracay.

During peak season, institutional buyers can extend cash advances to the *mayor compradors,* extending to the *pantings* and *compradors* where they source the native chicken inventory. However, this form of payment does not have a formal agreement and is solely based on trust. This has sometimes resulted in piling debts when they fail to deliver the pre-paid demand volume.

**Information Flow**

Information shared among different value chain actors is vital to streamline the desired market value and achieve cost-efficient and profitable business ventures. Critical information includes native chicken breed, production capacity, volume, timing of demand, farm location, accessibility, and price. Consolidators or traders are crucial in passing this information among the different actors as they often serve as a linkage between the input providers, producers, and consumers.

Information flow in the Western Visayas native chicken value chain is bi-directional. Information is shared usually by “word of mouth” among key players based on the information received. The once-a-week market day in the municipal centers, often called “*Huwebesan,”* is a viable venue for sharing vital information and for traders to transact. *Pantings* also visit far-flung barangays to scout for native chicken farmers.

Information is not shared across key players but between adjoining channels alone. For example, farmers and traders have a communication line, but it is non-existent among farmers and institutional buyers. This creates an information asymmetry and possible monopoly by traders.

**Analysis of the environment**

A 2019 NEDA Region VI (Western Visayas) Project- Western Visayas Commodity Roadmap for Native Chicken documented the native chicken supply chain in the region. This paper updates the report capturing the recent developments in the native chicken value chain, especially during the COVID-19 pandemic. In addition, industry stakeholders were made to validate the reported strengths, weaknesses, opportunities, and threats at each node of the value chain. The NEDA Project (2019) noted the industry's highly dynamic nature, and the pandemic's effect on the value chain is documented in particular in this study.

**Input Supply.** The native chickens' adaptability to different dietary formulas and the availability of feeds like farm by-products are their most valuable strengths. Government support (e.g., dispersal program, good vaccination administration) from Provincial and Municipal LGUs is also strong. However, there is a limited supply of feed ingredients (high cost of inputs), and shared service facilities, like community-based feed mills and brooding facilities, are wanting. Accredited and certified breeder farms are insufficient in number, and no proper training on breed-appropriate feed formulation can be accessed.

On LGU support, inputs, i.e., dispersal stocks, are sufficient, but there is a lack of follow-through and support for sustainability. The increasing demand for feeds serves as an opportunity for input suppliers. There is also the development and availability of technologies and ingredients for feed formulation, organic farming, and other alternative feed ingredients. A potential increase in input supply costs brought about by higher imposed taxes is a threat.

**Production.** On production, strength is seen in human resources, where young, organized farmers/breeders are gaining interest in native chicken production. Training on native chicken production is also available as part of poverty alleviation projects.

The use of fast-growing cross-bred is also gaining popularity among farmers. Among production weaknesses is the lack of policies or regulations on native chicken production and environmental and product safety. There are also limited technical and management skills, i.e., the absence of Good

Agriculture Practices (GAP) among farmers. Input costs and risks associated with hatching and raising chicks- such as electricity and housing facilities- are high. Due to farmers' limited access to credit, transportation facilities, and operational capitalization are also wanting. As an industry opportunity, further development of cross-breeding practices can decrease costs while maintaining the native chicken's quality and flavor. Continued research and development can also improve production practices by integrating proven technologies and best cultural practices. However, native chickens' slow growth rate and susceptibility to pests and diseases (e.g., Newcastle disease, infectious coryza), drastic weather and climate changes, theft, and predators continue to threaten production.

**Processing.** The simple processing procedure of dressing native chicken remains its strength. Weaknesses in processing include the lack of cold storage facilities and institutional slaughtering facilities compliant with Hazard Analysis Critical Control Point (HACCP) and National Meat Inspection Service (NMIS) standards. Using advanced technologies in native chicken slaughter and dressing provides opportunities for diversified product forms. Exposure of native chicken to diseases during the slaughter and dressing process remains a threat.

**Consolidation.** The trade relationship between *compradors* and farmers, or breeders and the end market, already exists. *Bagsakan* or consolidation areas are also identified. However, market linkages remain problematic as traders are not organized, there is no accreditation system, and consolidation depends on intermediaries. The middlemen set low buying prices at source because, more often, the farmers do not have an entrepreneurial mindset. Standards are also arbitrary for weight, size, age, and meat quality in marketing native chicken. A few players control market information.

Regarding opportunities for consolidation, there is an increasing number of institutional buyers and consumers as native chicken meat is gaining popularity. This can further lead to the developing of a more efficient and equitable trading system. Infrastructure support also increases as the government rehabilitates and builds more farm-to-market roads. However, competition among traders and increased transportation costs are considered threats.

**Distribution.** There is a ready market for native chicken. Pandemic quarantine regulations are also made clear during the pandemic. However, there is unregulated competition among distributors because no government agency focuses on market linkage. A one-stop shop for licensing or shipping documents and product standards, is wanting. In addition, marketing practices, such as labeling and branding, are seldom practiced. In far-flung areas, limited transportation options lead to poor handling and may expose transported native chicken to disease or cause untimely death.

Numerous opportunities were noted with native chicken distribution. There is an increasing demand requirement from institutional buyers since consumer preference is shifting to native chicken meat. In addition, there is an opportunity to develop safer and more sophisticated storage and handling facilities, where information system technology might be helpful. However, the lack of standards on live native chicken and NMIS regulation to transport dressed native chicken remains a threat.

**End Market.** There is a steady demand for native chickens, and end consumers are willing to pay a premium. However, there is seasonality of supply and limited access to the institutional market. There are no industry product standards, and quality control is absent. In terms of opportunities, end consumers can pay, and there is potential to develop diverse product forms or value-added products. The unstable price and supply of native chickens are seen as threats. Prices are market-dictated, leaving meager profits for farmers. On the other hand, an inconsistent low supply of native chicken in the market can lead to higher prices.

### Horizontal Linkages

Farmer associations are often targeted as recipients of livelihood programs, but usually, they do not pursue the enterprise after the program ends. Among the notable native chicken producers' association is the Panay Darag Breeders Association or PADABA in Iloilo. It is an association of semi-commercial farmers devoted to raising the *Darag* native chicken breed. The association was organized through WVSU training to develop best practices in producing *Darag* native chicken. PADABA also organizes trainings and seminars on adoption technologies. On March 10, 2022, they launched a physical store in Iloilo City. Named Abing's Darag Chicken Trading, the facility will serve as the association's marketing hub. PADABA is also recognized by the Department of Agriculture Regional Field Office VI (DA-RFO VI) as their principal partner and source of breeders for its disaster response native chicken dispersal project.

There are attempts to strengthen the relationship among native chicken farmers in the region, but they remain fragmented and weak as a sector. Limited information about the relationship between traders

is available, or this can be non-existent. Though, among traders, there is an unwritten gentlemen's agreement.

### Vertical Linkages

Input suppliers and producers may form a sound relationship since input suppliers often provide livelihood projects. For agrivet stores, walk-in transactions often prevail; thus, no relationship between producers and owners exists. Relationships with producers and processors are informal and minimal since slaughtering is the only major process for native chickens. Sometimes, the producer also functions as the processor when marketing the native chicken they produce. A spot market relationship exists between producers and consolidators when the commodity is traded.

The only formal relationship that may exist is between consolidators and institutional buyers like grocery stores. Written contracts usually serve as binding agreements, but due to fluctuating market availability, there are no strict requirements for volume. Contracts also include payment terms. Relationships between consolidators and other institutional buyers like wet markets, restaurants, and hotels are still informal and only on a cash-based payment.

Organizations among producers may promote participation in the value chain, but these were mostly failed attempts and were not sustained. In the case of PADABA, members have corresponding roles in the chain; some serve as producers, incubators, and breeders, and some focus on trading. Though roles differ, members prioritize developing an effective and productive local value chain for *Darag* native chicken breeds in Western Visayas.

## CONCLUSIONS AND RECOMMENDATIONS

In Western Visayas, native chicken production is a common livelihood in the rural areas. The industry has a strong potential to become a significant regional growth and development driver. However, the industry remains fragmented due to arbitrary standards. At present, it is challenged by increased input costs due to the pandemic.

Critical issues raised during the pandemic include the lack of native chickens to buy in the market, the absence of big-volume suppliers, the reduction or lack of deliveries to end-users, and the high price of native chickens sold in the market. Knowledge of the existing food value chain in the context of the pandemic is essential in ensuring food sufficiency.

Information on supply, prices, and demand is not shared among key actors but among adjoining channels alone. A communication line exists between farmers and traders but not among farmers and institutional buyers. As a result, there is an asymmetry of information. There have been attempts to strengthen the horizontal linkages in forming cooperatives or associations, but these initiatives were unsuccessful. Generally, native chicken farmers in Western Visayas remain weak as a sector. Strengthening the sector will delegate control on how and to whom native chickens will be sold since farmers often lack the financial resources to do the marketing function. Farmers may earn a relatively higher return on investment through cooperatives and associations through financial exposure to production rather than marketing.

Furthermore, market orientation is essential since native chicken products are not standardized. Introducing new product forms can also revolutionize native chicken distribution and retail while contributing to food security. Therefore, strategically identifying consumers' needs is vital in designing product forms.

The study was conducted at the time of the pandemic, hence restricting the ability to achieve a more thorough random sampling of the research participants. Connectivity restrictions may also have imposed a bias favoring those with stable internet connections. Finally, some respondents may not have participated in the data gathering with mobility restrictions still in place. It is therefore recommended that prudence in reading the result must be practiced. As such, generalizations can only be made based on the characteristics of the samples who participated and not on the entire industry in Western Visayas.

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**ETHICAL CONSIDERATION**

This research was conducted in compliance with ethical guidelines and standards.

**CONFLICT OF INTEREST**

The authors declare no conflict of interest regarding the publication of this manuscript. The Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) funded the study and had no role in the study's design, data collection, analysis, or interpretation.

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