

Value Chain Analysis Framework for the Free Range Chicken

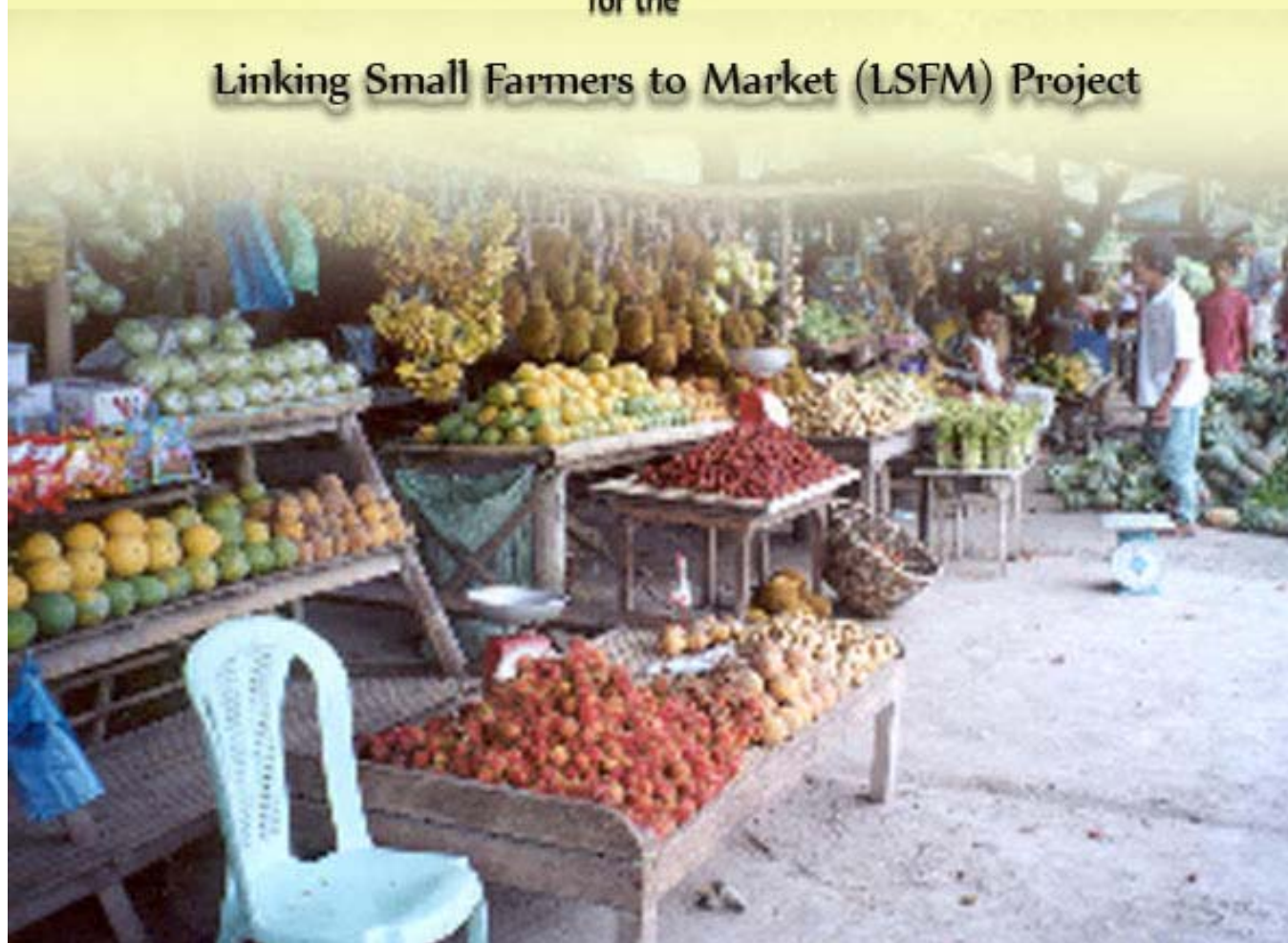
A Report Submitted by the
Center for Study for the Development of Agriculture in Cambodia (CEDAC)

to

ASIADHRRA

for the

Linking Small Farmers to Market (LSFM) Project



Value Chain Analysis Framework for the Free Range Chicken of the LSFM Project

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INTRODUCTION

Project Background

This report is prepared as start-off point in the conduct of Value Chain Analysis (VCA) in the free range chicken clusters in selected areas in the Kampong Cham, Kampong Chhnang and Prey Veng provinces. As a component of the LSFM Project, this study aims to contribute to the process of linking rural industries and enterprises into the mainstream market to harness and maximize the benefits from the value chain. In addition, the study aims to aid the CEDAC Agri-based Enterprise Support Program (AESP) in developing strategic linkages with its target chicken producers, market players and consumers. In this regards, the development of VCA report is providing CEDAC with important information to select an effective marketing intermediation for the chicken product.

Objectives of the Project

The Terms of Reference (TOR) requires the Consultant Team to:

1. Conduct a thorough value chain analysis of the free range chicken in the priority producer clusters under the project "Linking Small Farmers to Market". This analysis should come up with hard figures on the incremental values at each level of the chain;
2. Enhance the appreciation of the industry cluster participants, particularly the farmer leaders, cooperative leaders, NGO staff and technical support staff of the impact of this values in their own operation of the impact of these values in their own operation;
3. To raise the level of awareness and appreciation of stakeholders on the value and importance of dealing with market including financial institutions or level of credit providers.

Objectives of the Report

The report aims to present a model for analyzing the value chains of the free range chicken under the Linking Small Farmers to Market Project. Description and mechanism of the model shall be presented to a Technical Working Group for selecting an appropriate marketing intermediation to benefit small farmers and all concerned market players. By using the VCA model, it is also expected that relevant industry policy development themes and specific action agenda will be conceptualized.

THE VCA MODEL

Definition of the value chain

The essence of value chain analysis (VCA) is to improve strategic learning in enterprise development. Specifically, it treats the enterprise not as a singular (autonomous) entity, but as part of an integrated chain of economic functions and linkages across geographic boundaries. It emphasizes on the diverse interrelationships among market opportunities, constraints, and directives at various levels of the supply chain and at different levels of influence, from which specific value-addition takes place. This feature of the VCA lends to its completeness, as a strategic tool in exploring different alternative strategies for poverty reduction.

Description of VCA model components

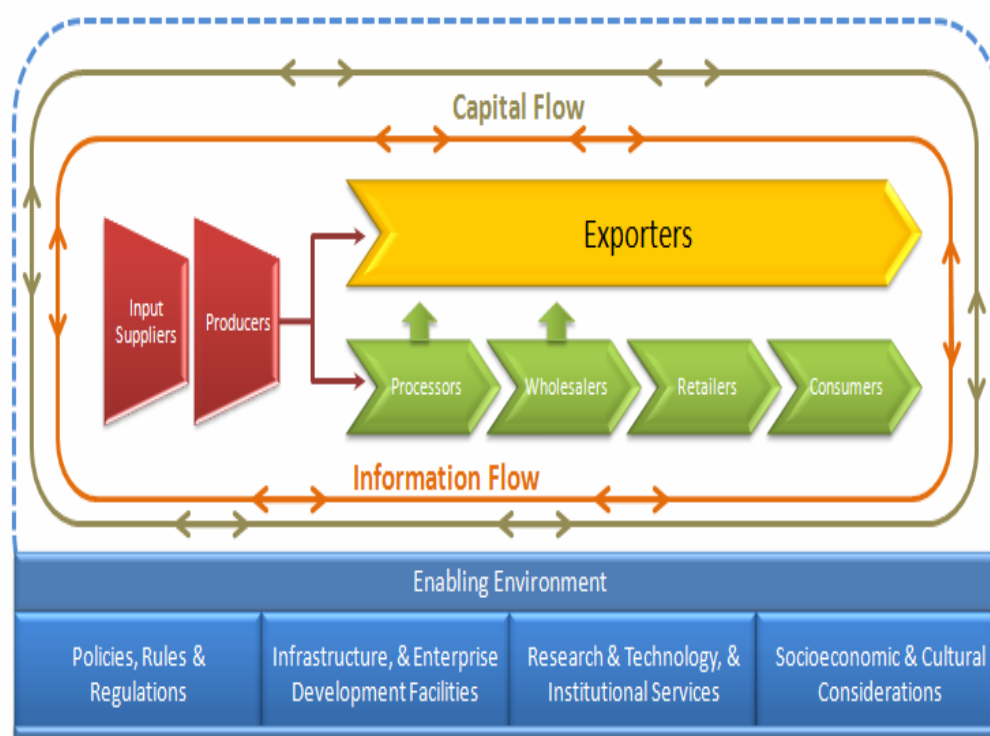
The purpose of analyzing the value chains of the free range chicken in selected areas is to identify key points of intervention along the chain and to recommend specific policy directions to

enhance the competitiveness of the CEDAC Agri base Enterprise Support Program under the Linking Small Farmers to Market Project. The major analytical premise in analyzing the chicken is that the different agents across each of the commodity's supply chain behave based on key market signals and on moderating variables provided by the enabling policy, economic, and technical environment. The factor market, producers, traders, and consumers interact based on specific capital requirements and information they obtain from various market sources. Furthermore, the market interaction dynamics is balanced by the conditions set forth by different market policies, technological advancements, and socioeconomic, cultural, and environmental concerns. The VCA model is shown in Figure 1. Thus VCA model thus integrates analysis of the commodity supply chain and that of the associated enabling environment. Hence, the model comprises of the following analytical entry points: (a) Product and Process flow, (b) Information and money flow, and (c) the Enabling environment. Furthermore, these entry points can be classified in two: (1) Primary Activities and (2) Support Activities.

Primary Activities.

Primary activities are those functions which are directly involved in the production, processing, and distribution of the product. These activities may fall among the following: Inbound Logistics, Production and Processing, and Outbound Logistics. Inbound logistics refer to management of production and processing inputs; whereas, outbound logistics pertain to product distribution from point of production to final consumption. The production and processing component is involved in the actual manufacture of products ready for sale.

Finally, market information and finance play a pivotal role in the movement of chicken products as these factors send signals of when, where, how, and how much to produce. The seamless flow of market information and efficient financial delivery are very important elements in further enhancing the efficiency of supply chain activities and in potentially controlling demand for major marketing services such as transportation and storage. Furthermore these build into the system responsiveness and flexibility to address the dynamic end-user preferences.



The Value Chain Analysis Model Support Activities.

While support activities are not directly involved in the manufacture and movement of the product, these activities have critical impact on the efficiency of production and distribution. Support activities serve as the value chain's enabling environment. These support activities include: (1) Policies, Rules, and Regulations, (2) Infrastructure and Enterprise Development Facilities, (3) Research and Technology, and (4) Socioeconomic and Cultural Considerations.

Policies, Rules, and Regulations

Laws and regulations govern standardization of their supply chain services. The commitment of government to supply chain development of the agriculture sector, in general, can be seen from policy directions as contained in its medium term development program as well as in the number and quality of laws and regulations that tend to create a business environment conducive for growth in the value chains of the chicken and food processing industries. Type and capacity of transport, schedule of deliveries, and responsiveness to customers' requirements (particularly health needs) and preferences (e.g. environment-friendly and organic lifestyle), maintenance and operations costs, and technology and capacity investments are influenced by national and local laws.

Infrastructure and Enterprise Development Facilities

Transportation infrastructure is an important key to the fast and on time delivery of goods which is vital in preserving product quality and value. For multimodal delivery systems such as that of the free range chicken, not only adequacy of transportation mode is important but also the coordination of these transports systems. An efficient transport system can translate to savings in delivery cost, inventory, quality deterioration and wastage.

The fast and reliable movement of products is a function of transport infrastructure. However, processing infrastructures such as slaughterhouse, storage, and packaging facilities are equally important in achieving transportation efficiency and preserving the potential quality of the products.

Information and Communications Technology (ICT) is important in attaining cost efficiency, responsiveness to consumer's requirements and reliability in delivering the right kind of product and volume of product required by the market. ICT application to the chicken and food industries can bring the following benefits to the value chains:

- a. Cost savings and price reductions from lower transaction costs
- b. Cost savings from reducing non-value activities thus eliminating excess intermediaries.
- c. Cost savings and better responsiveness from shortening supply chain/logistics chain transaction times for ordering and delivery
- d. Better and wider choice and more information for customers that could foster higher competition among producers.
- e. Collection and analysis of large volume of industry data
- f. Gaining access to both domestic and global markets, supplies and distribution channels

Research and Technology, and other Institutional Services

Research and Development institutions, financial institutions, and industry associations play an indirect role in how the supply chain performs. R&D institutions are important in coming up with innovations in product development, packaging and other processes that will allow better handling, storage and transport. Financial institutions are conduits for capital investments for transportation and processing infrastructure. With access to finance, the Agri based Enterprise Support Program (AESP), community slaughterhouses, and other players in the supply chain can adequately enhance infrastructure requirements and establish communication systems. Industry

associations on the other hand provides the means of integrating industry goals not merely on policy advocacy but in furthering technology transfer and adoption, collective strategy in enhancing existing markets, developing and entering new markets frontiers.

Socio-economic and Cultural Considerations

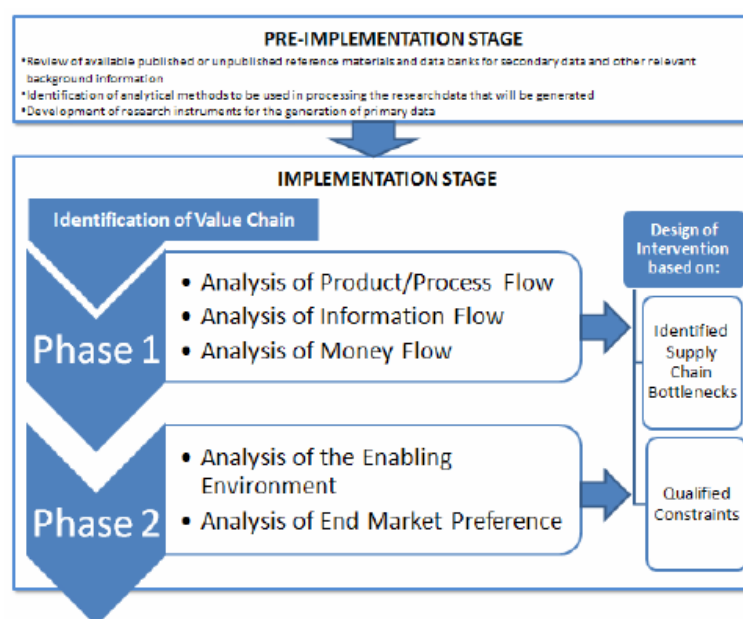
Aside from market signals and financial flows, different agents in the supply chain also interact based on social, economic, and cultural nuances. These factors affect the level of participation of supply chain agents. Social and economic concerns and cultural antecedents drive these participants to engage in contracts with market agents. Contrariwise, these factors may hinder effective communication and efficient bargaining among the agents. The cultural nuance may particularly be evident in the LSFM areas.

RESEARCH METHODOLOGY

The VCA Research Process was designed to serve as a guide in the generation and analysis of data for the project. The research process was divided into two main components, namely, the Desk Information Review and Primary Data Collection. Several sub-components and activities were identified under each stage (Figure 2) guided by the TOR. These are summarized as follows:

Desk Information Review

- a. We extracted information from previous research results, especially 2007 Chicken survey conducted by 13th Young Graduate and under guidance of Dr. Yang Sain Koma . The secondary data were used for the report. Several CEDAC published action research documents are the main reference materials and data banks for secondary data and other relevant background information
- b. After looking at the points of analysis in the TOR, we screened the existing data which are not necessarily collected by surveys or Focus Group Discussions with producers.
- c. The research tools were produced based on its necessity.



Primary Data Collection

- a. Focus Group Discussions with selected chicken producer groups in Kampong Cham, Prey Veng and Takeo provinces.
- b. Our researchers collected data related to costs and prices of each supply chain from middlemen, whole sellers, food processors, retailers and consumers.

RESEARCH FINDINGS AND ANALYSIS

1- Product Flow

According to previous studies as shown on the figure 3, free range chickens raised by farmers are mostly by local middlemen at village or district levels. The middlemen buy and transport them to the whole sellers who have been widely marketing the product in the provincial town or city areas. The transportation means are motorbike, minibus, and pick up truck. The logistic arrangement is unethical or unprofessional since they do not use cage or separate place for the transported live chicken. The chicken therefore becomes stress and affects its quality. To gain weight, middlemen usually provide brutally a big amount of food to the stressed chicken. In another way to gain weight, they inject some water into chicken meat. The whole sellers have their distribution channels including retailers at city market, wedding and party meal organizers, local restaurants, food stalls at market, and street grilled and roasted chicken sellers. For the retailers at market, they only sell the dressed chicken and chicken products to their customers for household consumption.

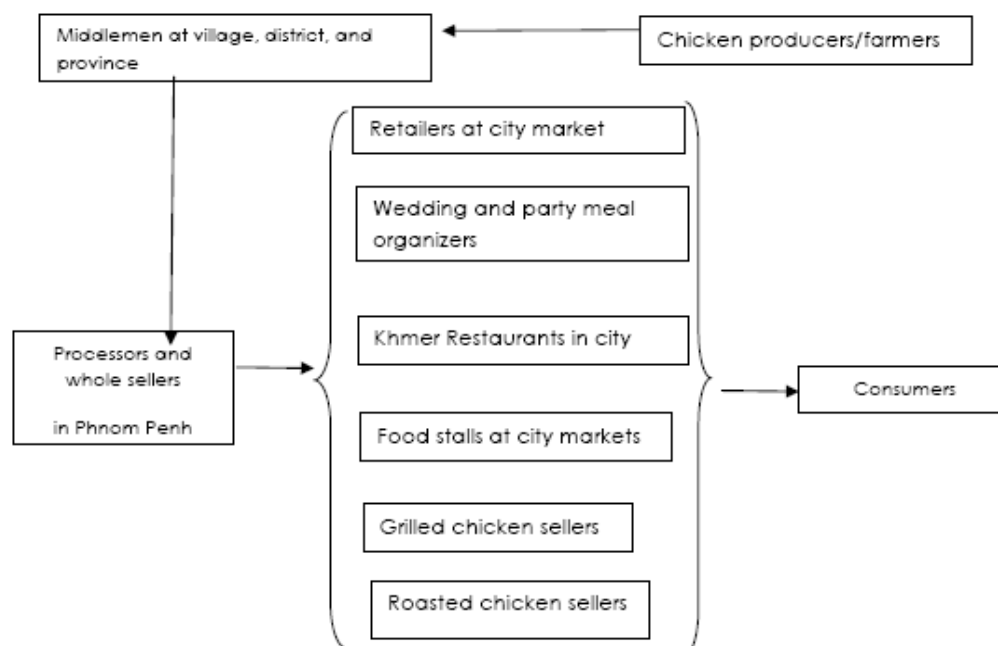


Figure3. Chicken supply chain

Sources of Supply:

The previous study on chicken focuses nine main areas: Prey Veng, Svay Rieng, Kandal, , Takeo, Kampong Cham, Kampong Thom, Kampong Chhnang and Kampon Speu provinces where the main chicken supply sources for Phnom Penh market. The result of a recent study shows that about 11 tons of chicken meat per day are supplied and consumed in the Phnom Penh areas. About 80% are the free range chicken raised by small farmers and 20% from farming entrepreneurs who use the technology or animal concentration feed. In provincial towns, the average consumption is about.....tons of chicken meat per day. The demand of chicken in provincial town market varies depend on the size and economic potentiality of the town. For example, Kampong Cham town needs about 650kgs a day; Kampong Thom town needs about 230kg a day; Takeo town needs about 280kgs a day; Kampong Chhnang town needs about 550kgs a day; and Prey Veng town needs about 300kgs a day. The average demand of chicken per district town is from 200kgs to 500 kgs per day which is comparable to the provincial town.

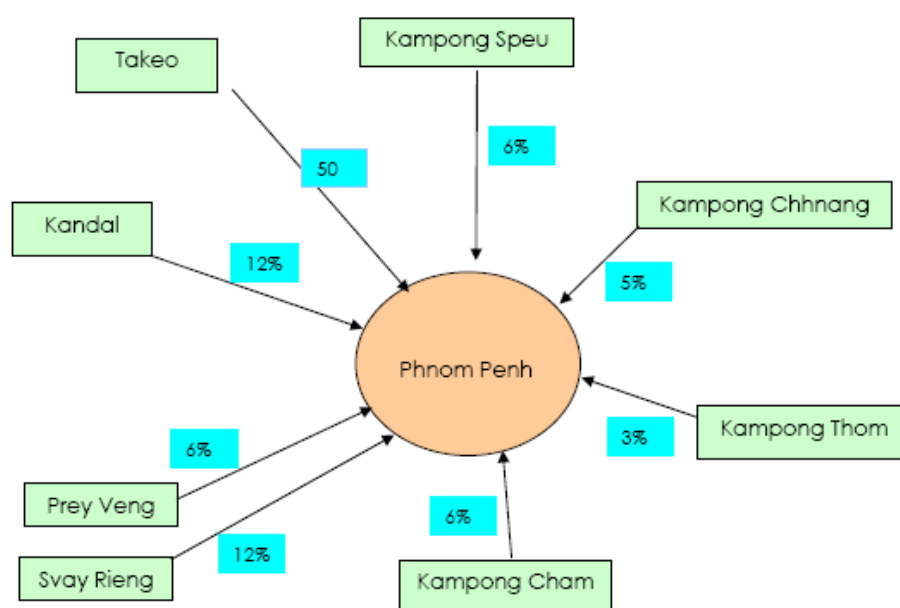


Figure 4

According to CEDAC' chicken market study at the end of 2007, the total estimated demand of chicken in Phnom Penh was 11tons a day. Shown in the figure4, the supply sources are from different provinces around Phnom Penh: 50% from Takeo, 12% from Kandal, 12% from Svay Rieng, 6% from Prey Veng, 6% from Kampong Cham, 6% from Kampong Speu, 5% from Kampong Chhnang, and 3% from Kampong Thom.

Logistic arrangements:

The middlemen or traders always use motorbike or pick up truck to transport live chickens to cities and towns for slaughtering or processing. The chickens are tied together and traveled several hours to slaughterhouses. Between 1,000 and 2,000 heads are transported by pick up and between 100 and 200 heads are transported by motorbike. Some traders have own small slaughterhouse in their home and close to their market. More than often, chicken are stressed and hunger so that they eat much food. Gain weigh by this way, traders can compete easily the chicken price with others in the market since they only sell the whole and uncompleted dressed

chicken. Different parts of chicken are also sold at different prices. The slaughtered chicken or whole chicken body is always tied and transported by motorbike to their customers such as restaurants, food stalls and street gilled chicken stores. The transportation time of chicken suppliers varies depends on order of food processors or retailer service hours. However, the delivered meat must be fresh. It means that the transportation period is less than two hours after they were slaughtered.

2- Analysis of process flow

The slaughtering process and weighting To find the percentage part of products and losses, we did experimentation of the slaughtering 6 chickens. The results are shown in the below table:

No.	Weight of live chicken	Weight of dressed chicken	Dressed chicken excluding crop and inside organ	Chicken inside organ
1.	1.20	1.10	0.95	0.10
2.	1.80	1.70	1.50	0.15
3.	2.00	1.85	1.65	0.20
4.	1.50	1.40	1.20	0.15
5.	1.00	0.90	0.70	0.10
6.	1.30	1.20	1.00	0.10

We generalize that the weight of slaughtered chicken meat is equal to 68.40% of the weight of live chicken. Other parts of chicken can be sold at a very cheap price. We calculated the below costs and prices based on this result.

The technology of slaughtering chicken:

At the moment, all slaughterhouses use traditional way to kill or process chicken. They do not have invested technology to slaughter chicken. Recently, a semi-automatic machine have been used to only clear the chicken feather and hairy. This machine can help to speed the slaughtering process. It can complete from 2,000 to 3,000 chickens a day. It is not a modern technology but only a local business initiative or creation.

Cost and price involved:

To find out the production cost or farm gate cost, our researchers worked closely with CEDAC field staff who is involved in chicken raising in the target areas. The cost of production of a chicken weighted 1kg is approximately 7,730R (US\$1.93). The farmers sell at a farm gate price of about 13,000R per kilogram of live chicken to the middlemen. In turn, the middlemen sell at about 14,000R a kilo to its whole sellers in main cities and towns. They get a net margin from 500R to 1,000R per kilo. To be able to sell chicken meat and products, whole sellers spent a greater amount for processing and coordination and transportation. They actually set selling prices to its distribution channels in order to maintain their customers. To retailers, they sell at about 19,500R; to wedding party organizers, they sell between 19, 000R to 20,000R based on the customer loyalty and quantity order. The similar approach of pricing is applied for other distribution channels. Final consumers are getting higher and higher price, especially the chicken processed products such as deep fried, grilled and roasted chickens. For instance, one kilogram of deep fried chicken can be sold between 24,000R to 30,000R per kilo. The below chart is presented the mentioned costs and prices of a kilogram of live chicken from farm gate to consumer levels.

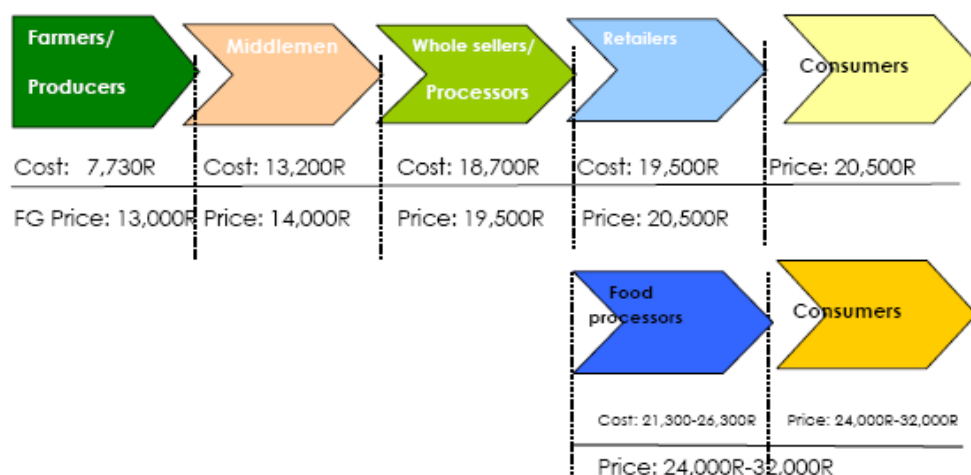


Figure 5: Value Chain Analysis

Cost analysis at the farm gate/production level: After calculating the estimated cost for raising 110 chickens during 3 month period, we have the following results:

- Cost of feeding food: 6,560R (small farmers always overlook costs of natural food from their farm, especially rice products and vegetables)
- Cost of labor: 990R
- Cost of cage preparation: 180R

Total cost per 1 kilogram of live chicken: 7,730R

Selling price= 13,000R, Margin=5,270R (40.53%)

The more number of chickens are raised, the less production cost will be for small farmers. The above estimated cost is based on 110 chickens produced during three month. If they could not sell them within 3 month period, small farmers get higher cost. Though the sale margin is considerable, small farmers do not earn much from the current market. They usually sell not more than 20 kgs of chicken per time. Moreover, they are often cheated the weight by their middlemen.

Cost at middlemen level:

Analyzing the cost of trading 225 heads of chicken by middlemen, we found the following results:

- Cost of purchasing chicken at the farm gate price: 13,000R
- Cost of transportation (gasoline) and other road costs: 150R
- Cost of communication/coordination: 50R

Total cost per kilo of chicken: 13,200R

Selling price= between 14,000R and 15,000R, Margin= >800R (6.53%)

Though margin is less than small farmers', middlemen gain better from selling a huge number of chickens. Unethically many middlemen manipulate chicken weight by feeding them.

Whole sellers/processors:

The whole sellers are slaughtering chicken. The overhead or fixed costs are excluded from the below calculation. The selling cost of chicken's inside organs are considered equal to the fixed costs occurred by the whole sellers.

-Cost of purchase from middlemen: 14,000R

-Cost of processing labor: 500R

-Cost of weight loss after dressing/processing (25%): 3,500R

Total cost of chicken to be sold: 18,700R

Selling price= between 19,500R and 20,000R, Margin=>800R (5.70%)

Similar to middlemen, whole sellers gain much benefits from selling a huge amount of chicken products. Some whole sellers also manipulate the chicken weight by ejecting water into dressed chicken. This unethical thing is usually from the current strong market competition.

Cost at retailer level:

-Cost of purchase from whole sellers: 19,500R

Selling price= between 20,000R and 21,000R, Margin= >500R (2.56%)

Cost at food processors (restaurant):

Deep fried chicken and grilled chicken Retailers get better income from selling a huge quantity of dressed chicken though selling margin is less. In the strong competition, they sometimes do the same unethical thing to get better income. However, retailers are more flexible in conforming quality requirements since they are close to customers.

1- Grilled chicken

-Cost of purchase: 19,500R

-Ingredient cost: 650R

-Vegetable cost: 400R

-Energy cost: 500R

-Packaging cost: 250R

Total cost per 1 kg of deep fried chicken: 21,300R

Selling price= between 24,000R and 26,000R, Margin= >3,700R (17.37%)

2- Deep Fried chicken:

-Cost of purchase: 19,500R

-Cost of ingredients, vegetables, packaging and energy: 6,800R

Total cost of 1 kg deep fried chicken: 26,300R

Selling price= between 30,000R and 32,000R, Margin=>3,700R (14.07%)

Food processors usually get highest margin because of processing skills and food innovations. Value added does not only involve the food quality but also customer services.

In conclusion, small farmers still get less benefit than other market players due to many factors. The economy of scale, price bargaining power, and market access are of the main factors. If the smaller amount chicken they raised, the production cost is higher. It means that they get less benefit than middlemen and whole sellers who are trading a huge quantity of chicken everyday.

3- Analysis of information flow

Training on techniques of chicken raising: After good result of its action research on chicken raising technique, CEDAC cooperated with the Department of Animal Health and Production of the Ministry of Agriculture, Forestry and Fishery to organize several trainings on chicken raising. A group of 20 farmer participants were trained on the topic. CEDAC project staff usually follows up the outcomes of the training. All trained farmers have applied the knowledge and skills they have learned. Farmers who did well the job become farmer promoters. Several exposure visits were organized for trainees to the chicken producer groups. They can learn from each other by sharing knowledge and experience.

Pricing and market information:

Chicken pricing at farm gate level is usually set by producers/farmers who get information from mouth to mouth and more than often from middlemen. Most of producers do not access to market price. Only a few radio channels and newspapers have reported main commodities. The farmers who are currently not commercial farmers rarely pay attention to the market information.

The price is usually set by whole sellers who are interacting consumers and aware of market size. The demand and supply are influenced by the whole sellers. The middlemen are profitable from taking partnership with the whole sellers. They have more purchase bargaining power than producers.

Recently, CEDAC introduce the cooperative concept among to its target farmers. Many collective sales of agriculture commodities have been organized by several farmer/ producer groups. The approach has been working well and some farmer associations have gained the sale bargaining power.

In most cases, consumers have alternatives to buy products. However, they are not all aware of product quality and usually cheated by irresponsible traders in terms of price and quality. In meat or protein market, consumers can buy fresh water fish, sea fish, and animal meat other than chicken. The chicken product is not the cheapest one in the protein market.

Calculation of production cost:

Chicken producers have limited knowledge to calculate their production cost since they raised chicken at family level, not at business level. They over look the cost or ignore it since they feed their chicken by crops considered as residue. They are currently subsistent farmers, and not commercial farmers.

Problem encountered:

Small farmers do not have much price bargaining power. They also have limited knowledge of quality standard requirements and costing their products. The middlemen who take partnership with farmers and consumers are profitable from manipulate the purchasing and selling prices. Some unethical matters behind the chicken market such as weigh manipulation become strong barriers for new entrance of this market, especially the responsible traders who would like to promote fair trade and social responsiveness.

4- Analysis of money/capital flow

Raising chicken, most small farmers usually invest their own money because the amount of investment is affordable. To start this activity, they only have to buy chicks and materials for building cages. Some producers can increase number of chickens from generations to generations, and from seasons to seasons. To expand this business, some farmers get loan for their capital investment from saving group with rate of approximately 3% per month. Not many cases of loan for this kind of investment are found by the research. If it is the case, farmers can easily return the credit amount to their saving group within less than one year. In contrarily, we found that the cash flow from this activity is helpful for small farmers to settle loans they applied for other farming activities such as rice cultivation.

5- Analysis of the Enabling Environment Rules, Regulations and Policies

In 2006, a government sub-degree on management of slaughterhouse was released by the Prime Minister. The purpose of this sub-degree is to improve the environment and sanitation, promote the food safety, and to control bird flu in the country. Up to now, no chicken slaughterhouse complied with the sub-degree. Small scale of chicken slaughterhouse is still operated in main towns and cities. The opened space transportation of chicken from village to towns and cities are still allowed. However, several bird flu prevention programs have been implemented throughout the country. The awareness of the prevention activities have been also raised among CEDAC's chicken groups. In response to food security, the government urges livestock raising activity which is a part of livelihood improvement for farmers. Many NGOs such as CEDAC have been helping farmers to boost this activity apart from promoting the System of Rice Intensification (SRI).

Technology

At the production level of small scale farming or family business, some farmers are still adapting their conventional way of raising chicken. But CEDAC's target farmers have been exposed to new method of raising chicken which was successfully experimented through action researches. The project staff trained the simple raising techniques such as spacing, feeding and disease prevention. The farmers have also been sharing their experiences of this activity through meeting and exposure visits.

At the production level of greater scale farming business, the technology has been applied by modern technology from neighboring countries. For example, production of chicken eggs, investors used modern equipment and technology imported from other countries. The modern technique of raising chicken is quite different from the one used by our small farmers. For instance, to prevent diseases and to get chicken fast growth, anti-biotic vaccination and concentration feeding were applied by farming business owners to save time and costs. The productivity of this farming business is much greater than the family business. For example, the chicken of 2kg weight can be raised for only 45 days while the ecological way needs 90 days to raise a chicken of 1.5kgs.

At the processing level of production, no chicken food processing manufacture exists in Cambodia. Only fresh chicken processed food such as grilled, fried or roasted chicken does exist in the main market outlets in cities and towns. No modern technology was used for this

processing. Processing equipment is designed by local innovations or benchmarked the ones from other countries.

The free range chicken meat is mostly preferred by local food processors such as local restaurants, and street grilled and roasted chicken while the ones from farming business go mainly to international fast food restaurants, food processors and supermarkets.

Socio economic characteristics: production and consumption patterns

Raising free range chicken considered as a part of small farmers' income generation because this activity does not require as much time and effort as to take care of other livestock raising such as pig and buffalo. Beside their own household consumption, a small farmer is able to supply chicken in average 4 times a year and 100 heads a year. However, rate of production varies among small farmers depend on their raising techniques. In several case studies, small farmers who did apply techniques introduced by CEDAC get higher rate of production. To get better yield, two main remarkable points are feeding, spacing/caging and regular monitoring/treatment of parasite.

The free range chicken is essential protein demands of all Cambodian classes. A small size household needs chicken meat from 0.30kg to 0.80kg per time while a medium size needs between 1 and 1.50kgs; and a large size needs between 1.70-3.00kgs. In average, a household demands 1 to 1.50kgs of chicken meat for their meal preparation. In average of consumption frequency, a city household consumes chicken twice a week.

In the trend of economic growth in Cambodia, many people are looking for better product quality. The better quality of chicken protein, especially the safer and better standard quality is able to find their consumers in main towns and cities.

6- Analysis of the End-Market Preferences

Table shows the price, availability, and supply of different protein sources.

No.	Protein name	Main source of supply	Availability	Average market price per kilo
1-	Free range chicken	Small farmers in 8 provinces	Year round	20,000R-21,000R
2-	Farming chicken	C.P company	Year round	15,000R-18,000R
3-	Fresh water fish (local standards)	Tonle Sap and Mekong	Picked season –Aug to Jan	13,000R-14,000R
4-	Sea food: shrimp (local standards)		Not year round	25,000R-30,000R
5-	Pork		Year round	17,000R-18,000R
6-	Beef		Year round	25,000R-28,000R

In the protein market, the free range chicken meat considers as the second highest price among other protein sources. However, the chicken meat from farming business is about 2,000R-3,000R cheaper. According to the evaluation of customers, the free range chicken meat is tastier than the farming business one. Fresh water fish is the most important protein source in Cambodia. Tonle Sap Lake and Mekong River provides the hugest amount of fish in the world. But fish has been exported to neighboring countries. Sea fish and other sea food products are also important source of protein for Cambodians and tourists. Many varieties of sea products are more expensive than chicken due to their availability. Cambodians also consume pork and beef meats. Its price is slightly cheaper than the free range chicken.

In conclusion, the free range chicken is one of important protein sources because of its comparable and affordable price, year round availability, regular supply, and taste. Particularly, domestic chicken raised by small farmers are preferable protein chosen by all classes of consumers. The free range chicken which is controlled quality and standardized by CEDAC program will be added value for food processors and customers. It is a matter of how to process chicken meat into various food products.

7. Analysis of Industry Coordination

Up to present, no coordination has been made between whole sellers/traders and small farmers. Only middlemen did interaction themselves with small farmers and traders or processors. Under CEDAC programs, the interaction between producers and consumers was occasionally organized through exposure visits of farmers to market and the consumers to farms.

CEDAC programs introduced the cooperative concept to its target farmers. The collective sales of chicken were sometimes facilitated by project staff. The small farmers just started learning about market- they have been exposed to the chicken quality requirements, prices and challenges.

CONCLUSION

Free range chicken is one of important agri-products involved by many small farmers in Cambodia. The chicken product, recognized by local people, becomes the main protein source and market. The current market players are not yet be able to create market intermediation to help those small farmers since the latter do not gain much benefit from the market supply chain. Moreover, the middlemen and whole sellers who influence the market price, supply and demand are committing many unethical things. The value of producers/small farmers are not promoted by the market payers to consumers. The current supply chain is not yet complied with the Government regulations and policies which are aim at promoting local products and food safety.

RECOMMENDATIONS/ PLANS OF ACTION:

Understood well the supply chain of free range chicken and found the market potentiality, CEDAC initiated a chicken market intermediation mechanism which is hopefully to help its target small farmers. Under its Agri-based Enterprise Support Program, CEDAC is strengthening about 700 chicken producer groups through technical support, and cooperative policies. A part from this, several Farmers' Markets will be built to sell as many as possible agricultural products, especially natural agri- products. This initiative would be able to help small farmers in terms of market access, price bargaining power, and economy of scale. In addition, community chicken slaughter house, a part of the market intermediation, will help small farmers to expose another supply chain or new market and to understand the quality standard requirements. Less but not least, Natural Agri-Product shops and Country Bird Restaurants are playing frontier roles of its organic market.

Appendix1. List of Data Needs and analytical tools for Value-chain Analysis

Point of Analysis	Data Needs	Methods	
		Data Collection	Analysis
1. Identification of value chain	Selection Criteria: Restrictions	Secondary	
2. Analysis of Product/Process Flow	Product Source and Destination, Logistical Function (Cost/Function/unit), Spec. Processing Activities (Farm-level to Mkt Level or consumption level)	Secondary FGDs/KIIs	Supply Chain Analysis: Descriptive Analysis Cost/price involved Analysis of transportation and processing, Price Differentials, Description of Logistical Activities, Geographic Flow
3. Analysis of Information Flow	Pricing, Market Outlets, Input Sourcing, Technologies, Product Quality	Secondary FGDs/KIIs	Descriptive Analysis: Timeliness, Availability, Relevance of Information; Horizontal Linkaging
4. Analysis of Money Flow	Capital Requirements, Sources of Capital, Credit Needs, Sources of Credit, Capital Utilization	Secondary FGDs/KIIs	Financial and Cash Flow Analysis: Solvency and Liquidity; Timeliness, Availability of Credit
5. Analysis of the Enabling Environment	Inventory of Rules Reg. & Policies on chicken, Available Technology-Matching (Cost and Capacity), Ethical Issues, Socio-Economic Characteristics of VC Stakeholders	Secondary FGDs/KIIs	Descriptive Analysis: Policies Rules & Regulations, Technologies Available; VC Stakeholder Participation & Analysis
6. Analysis of the End-Market Preferences	Product Quality, Quantity, Price (Critical Success Factors) vs non-organic chicken	FGDs/KIIs	Competitiveness: Analysis of USP and CSF
7. Analysis of Industry Coordination	Mapping of industry stakeholders, decision-making processes and influences	Secondary FGD/KII	Stakeholders Analysis focusing on decision-making and coordination / who does the integration within the chain

Appendix 2. Focus Group Discussions Schedule

Day	Topic	Resource Persons	
Day 1: Using the Survey Instrument			
	Project Overview	Sim Kong	Keam Makrady
	Discussion on the Value Chain	Sim Kong	Lim Sokundarun
	Using the Survey Instrument	Chhay Song Leang	
	a. Parts of the Instrument		
	b. Data Inputs		
	Conducting the FGDs	Chhay Song Leang	Chheng Nakry/Ear Oiy
	a. Preparations	Chheng Nakry	Chhay Song Leang
	b. FGD proper (processing information during FGDs)	Lim Sokundarun	
Day 2: Data Processing			
	Components of the Data Processing Worksheet	Lim Sokundarun	Chhay Song Leang
	Data encoding	Lim Sokundarun	
	Data Tabulation	Lim Sokundarun	

Appendix3. Research tool for VCA

I- Basic information and product flow

- 1- Name of farmer/producer:.....
- 2- Address:.....
- 3- Producer cluster:.....
- 4- Family members:.....
- 5- Cultivation land:.....ha
- 6- Land access: ☐ Owned ☐ Tenant ☐ Leased ☐ Other, please specify.....

If leased, what is the price per year/season?

- 7- Land for chicken raising:.....S.q.m
- 8- Number of chicken raised per year:.....
- 9- Most frequent Market outlets:
☐ Sold to middlemen at the village ☐ Sold at the nearby market
☐ Sold to neighbors ☐ Sold to producer groups at farm gate (collective)
☐ Other

- 10- Farm Gate price per kilo:
- 11- Production cost:.....
- 12- How many chicken or kilo did a farmer sell per season/year?.....
- 13- How much for own consumption?.....

II- Information flow

- 14- Did the producers have been trained? ☐ Yes, ☐ No
If yes, who provide the training? ☐ NGOs ☐ Government Officers
☐ Other

- 15- Where is the main source of market and price information?
☐ Radio ☐ Producer group ☐ Newspapers ☐ Other

- 16- What are the problems with production, price, and market information?.....
.....
.....

III- Financing analysis

- 17- Amount of investment for chicken per season/per year:.....
- 18- Finance sources for the production: ☐ Saving group ☐ Own resources
☐ private loan ☐ Local micro-finance agency ☐ Other
- 19- If a loan, what is the interest rate?.....and What is the maximum amount of loan?.....
- 20- Amortized rate:
- 21- Loan documents:.....

23- Any problems related to the finance?

22. *For the following exercises, use the given information to find the missing side length or angle measure.*

24- Type/breed of chicken: ☐ hybrid ☐ domestic ☐ other

25- Production period:.....

26- Weight standard for marketing:.....

27- Means of transportation used by traders to the market:.....

28- Transportation period:.....

29- Cost of transportation per kg/chicken to the market.....Riels

30- Any problems related to the value factors/quality standard

4. CONCLUSIONS AND GENERAL REMARKS

31- How many persons in each household are involved in the production of the product?

32- Gender: men or women are mostly involved?.....

33- How much percentage of the ho

chicken?

34- What are consumers of chicken?

☐ high class ☐ All classes

35- How many percentage of Ca

meat?