

**KINGDOM OF CAMBODIA**

**SMALLHOLDER LIVESTOCK PRODUCTION PROGRAMME**

**GCP/CMB/028/EC**

**Value Chain for Pig Meat Marketing  
in Cambodia**

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## **Abbreviations**

<b>AMO</b>	Agricultural Marketing Office
<b>CC</b>	Commune Council
<b>CFDS</b>	Center for Development Service
<b>DAHP</b>	Department of Animal Health and Production
<b>EU</b>	European Union
<b>FAO</b>	Food and Agriculture Organization
<b>HH</b>	Household
<b>KSP</b>	Kampong Speu
<b>LWT</b>	Live Weight
<b>MFI</b>	Micro-Finance Institution
<b>PNH</b>	Phnom Penh
<b>SLPP</b>	Small Livestock Production Programme
<b>TK</b>	Takeo
<b>VAHW</b>	Village Animal Health Worker

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## EXECUTIVE SUMMARY

This analysis of the pig subsector in Takeo, Kampong Speu provinces and Phnom Penh, Cambodia was undertaken by Center for Development Service (CFDS). The field work for the study was carried out by involving different participants along the value chain, totally 340 participants including 313 pig producers, 5 vet medicines and animal feed shop dealers, 5 butchers, 15 pig meat retailers, and 1 sow raiser and 1 transporter. To ensure maximum cooperation within the sector, CFDS contacted the provincial project coordinators and district vets in the both study provinces of Takeo and Kampong Speu in order them to assist in the study, as well as the Monitoring and Certifying Officer from Small Livestock Production Programme (SLPP) of European Union (EU) in Cambodia and Project Coordinator from Food and Agriculture Organization (FAO) to assist in conducting a market analysis.

The field work was carried out between August and September 2007. At commencing with the field study of pig meat value chain, the team visited the three communes where accommodated with pig small-scale producers in each study province, three abattoirs (one in Takeo and two in Phnom Penh), three district markets and four markets in Phnom Penh, and held meetings with different stakeholders in along the chain, including:

- pig producers in communal areas;
- representatives of Beong Krapeur and Kilometer No. 7 Abattoirs;
- Wholesalers in Takeo and Kampong Speu provinces and Phnom Penh;
- Retailers in Takeo and Kampong Speu province and Phnom Penh;
- Transporter/Trader in Phnom Penh; and
- the staff from the Provincial Office of Animal Health and Production (POAHP) in Takeo and Kampong Speu to discuss the pig market study programme.

The study team interviewed numerous participants in the chain that these interviews and meetings provided a more focused perspective on top of the framework to help complete the analysis.

Given that there has been a lot of research carried out on the industry; this report will provide an analysis of the industry in Takeo and Kampong Speu. It will pick out the important issues and will focus on the key issues for different participants in the chain. This document is to discuss the constraints/opportunities and possible intervention to improve the value chain of pig meat, which includes:

- mortality rates of piglets are high due to poor quality breeds and or unavailable good quality breed and lack of trust in medicines and vaccines;
- inputs supplies are expensive and pig producers lacked knowledge of producing pig feed by using local, available resources;
- high production costs and farmers have no appropriate system of production records;
- low quality of pig meat and the pig producers are hard to access to good price;
- no quality pig meat standards;
- inequity price of live pig given by traders in the village due to lack of market information for pig producers;
- low access to vet service by pig producers in some villages;
- lack of finance for short term working capitals to invest in pig production;

- lack of pig raising skills and knowledge about animal health monitoring;
- low knowledge of handling pig meat with sanitation both at market and slaughterhouse;
- lack of live pig supply;
- difficulty in paying tax by the traders;

This report will be made available to project developers and used as a basis for developing strategies and intervention to support the needs of respondents who are or wish to add value to their production, especially the pig smallholders.

# INTRODUCTION

The main economy of Cambodia is strongly anchored to Agriculture. Eighty percent of the population (13.4 million) depends on Agriculture for their livelihood. Rice is the stable crop, and livestock is reared as the second source of family income, such as pig, cattle and poultry.

Livestock are being kept for the production of meat and draught power. Livestock markets in Cambodia are relatively disorganized with small producers not being part of an organized marketing chain and having little or no access to market information related to product, prices and quality. To effectively compete in by selling the required quantity and quality of pigs to selected market places, producers need: 1) stronger links to private sector stakeholders higher in the market chain (such as butchers, provincial level traders, or retailers); 2) price and market information, particularly those related to quality premium; 3) an institutional structure on a commune/local level which facilitates marketing of animals and information flows, both into and out of the commune; 4) links to private sector providers to obtain high quality inputs to ensure timely and adequate supplies of high quality animals. To insure enhanced market access, increased returns and sustainable growth of both local and selected regional export markets, it is critical that marketing interventions be supported by non-subsidized production enhancing technologies and ready and sustainable access to private sector input suppliers.

This study, under the co-funding from and supervision of FAO and EU, has been conceived and developed for understanding the present status of meat production, increasing the meat production and improving the markets and marketing potential for meat and meat products in Cambodia.

## 1.1 Objective of the Work

This project addresses two outputs in:

1. Summarizing the market analysis, the process, and recommendations for proposed interventions based on discussions and analysis; and
2. Recommendations on required market information with suggestions on what types of prices are needed and how to best deliver them.

It also wants, not only a documented analysis of the market, but as a training tool designed to allow all project stakeholders along the chain to understand how the chain works, what quality is desired by end-users, what information is missing by the various market participants, and how links can be forged between market participants to increase returns to members of the chain.

Then, the objective of this project activity is to identify ways of improving smallholder access to markets and identify interventions need to improve the chain (and returns therein).

## 1.2 Description of Activities

This project was undertaken to focus on searching for market opportunities and identifying key constraints related to pig production process at the household levels, who are mainly involved in pig production, other players along the chain. The study was conducted with the



different players along the chain such as pig producers, veterinary services providers, feed suppliers, pig breeders, and output services such as abattoirs, wholesalers, and retailers.

The study was conducted in the provinces of Takeo and Kampong Speu, and Phnom Penh, Cambodia. In Takeo, the study was implemented in two districts with three communes and in Kampong Speu also in two districts with three communes. Phnom Penh is known as important location where a value chain analysis needed to be undertaken.

This work provided a description of the following activities:

- Undertake a primary chain analysis which reviews all the questions in the attached chain analysis, maps product flows into selected provincial markets (one in Takeo and one in Kampong Speu) and Phnom Penh, analyses seasonality of animal movement, role and responsibilities of stakeholders along the chain, etc. Using existing project information, validate some of the costs of moving animals from farm to folk.
- Analyze all the relevant price information from the Agricultural Marketing Office as to usefulness for stakeholders along the chain; purpose additional information which would be needed/appreciated by market participants (particularly those related to quality). Review preferred delivery options.
- Use the primary market chain analysis information for pig meat to organize meetings with various stakeholders.
- Organize a follow up group meeting of various participants in Takeo/Kampong Speu provinces which links into community based marketing development activities.
- Document the chain analysis, issuing findings and recommendations.

The field work was carried out between August and September 2007 in the provinces of Takeo and Kampong Speu, and Phnom Penh municipality, Cambodia. Before commencing with the field study, the team held meetings with stakeholders in the target areas, including:

- Provincial Project Coordinators, District Vets and Commune Councilors from both provinces for orientation on the purpose and process of the study;
- Pig producer groups in communal areas; representatives from selected communes for gathering information related to the study;
- Other actors for tracking with the chain such as animal feed and medicines suppliers, piglet producers/suppliers, transporter, abattoirs/wholesalers, and retailers; and
- Vets from the District Veterinary Association.

In addition the team participated in several meetings with FAO project coordinator and Monitoring and Controlling Officer of Small-holder Livestock Project for consultation and comments.

These interviews and meetings provided a more focused perspective on top of the study framework to help complete the focus of the field surveys.

### **1.3 Methodology**

The study was done based on a combination of tools to collect data, including structured interview, focus-group discussions, and interview with key informants.

- Individual interviews with the piglet producers and suppliers, animal feed and medicine suppliers, local/district traders, butchers/wholesalers, retailers and key informants.

- Focus group discussions with pig producers, which include commune authorities who also produce pigs.
- Sharing the findings with representatives of producers and relevant people such as input retailers/wholesalers, local/district traders, wholesalers, and local authorities.

The collected data was cross-checked with different sources for accuracy and validity. These include the use of the following secondary data sources and different actors along the chain to track the whole value chain of the pig subsector.

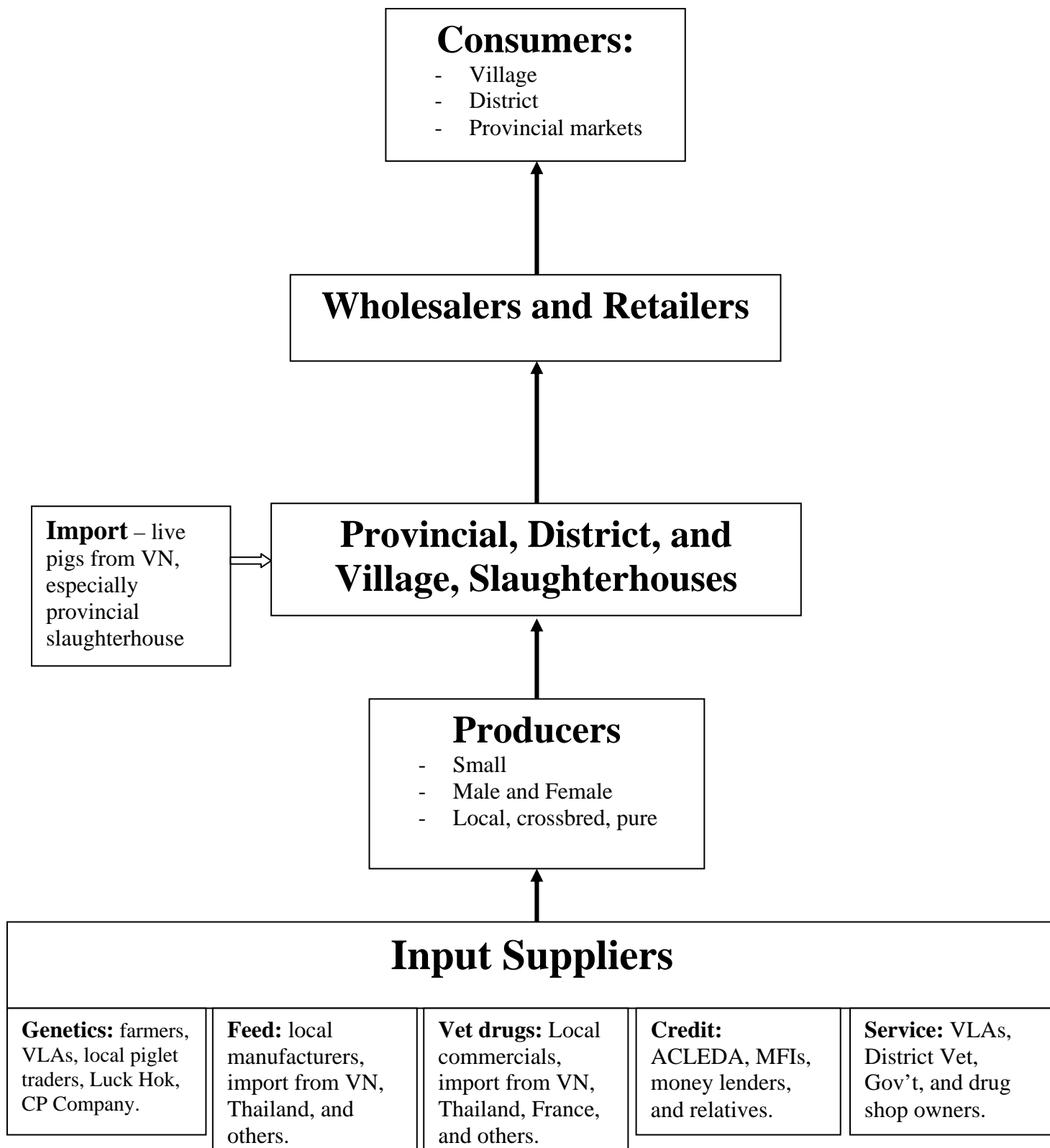
#### **1.4 Team Description**

The study was conducted by a team consisted of 2 members from Center for Development Service (CFDS). Mr. Sak Choeun, the director of CFDS and agriculture value chain specialist, who directly involved with the data collection, analysis and writing a report, while Mr. Thong Sros, an admin officer assisted in logistics and administration work.

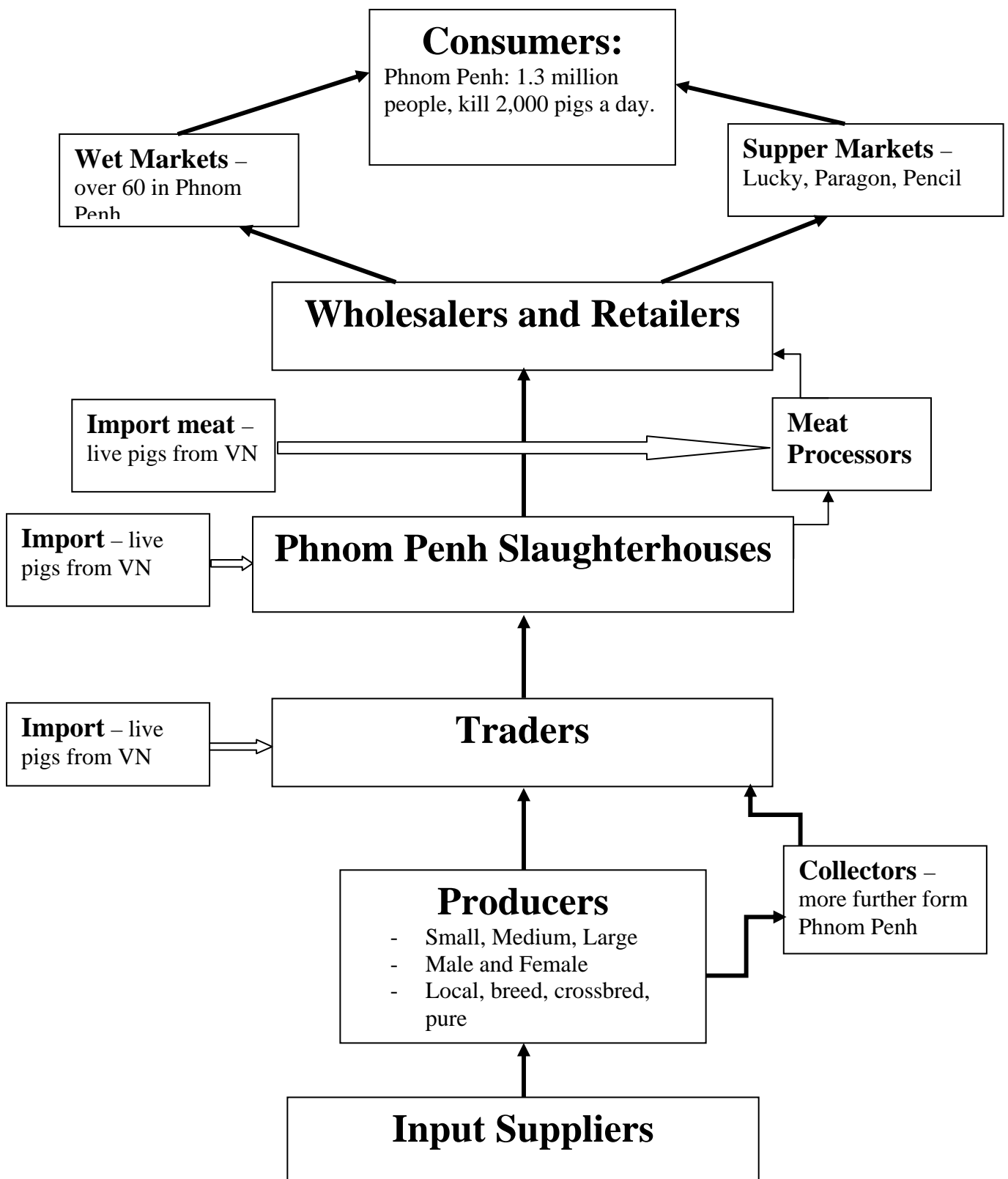
# 1. Swine Value Chain Analysis

## 1.1 Product Flows

### 1.1.1 Maps of product flows into provincial markets



1.1.2 Maps of product flows into Phnom Penh market<sup>1</sup>



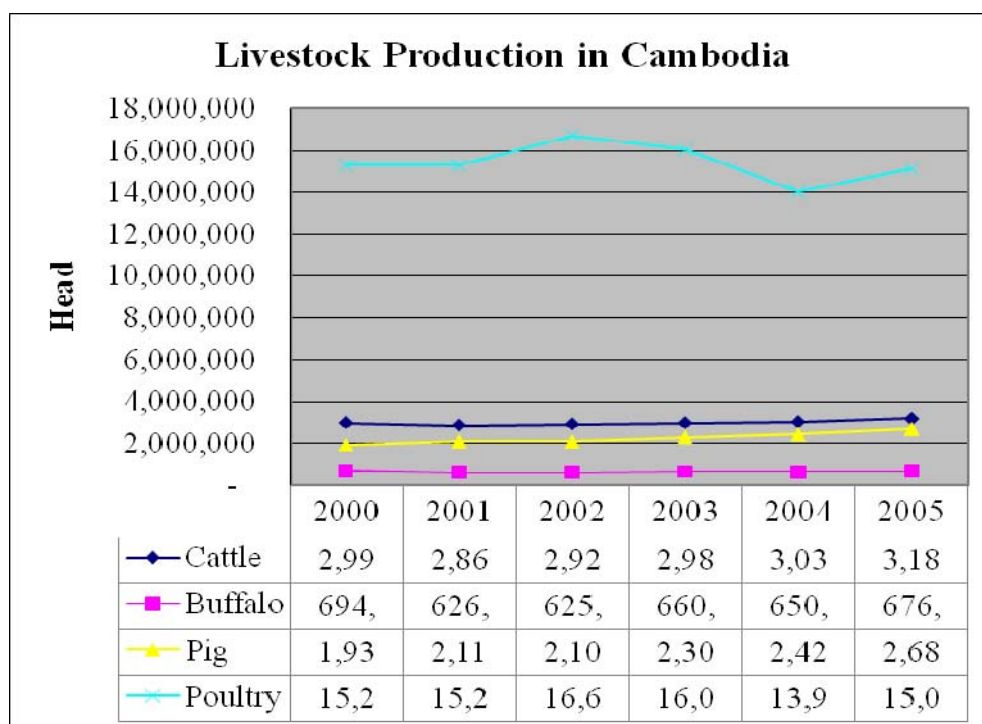
<sup>1</sup> Source: Developing the swine value chain in Cambodia June 2007 (MSME project)

## 1.2 Analysis of Product Flows

### 1.2.1 Production

- Pig production seems to increasingly grow up year by year, except from September 2006 to February 2007 when a huge volume of Vietnam pigs were imported with cheap prices that led to negative impact on smallholder pig producers in production, as well as the vet medicines and animal feed retailers in declining their sales volume, especially in the two studied provinces of Takeo and Kampong Speu. This includes some pig producers destroyed pig pens, some have reduced their production this year and some gave up production.
- Pig Production in Cambodia is shown and the salient features for 2005 below<sup>2</sup>.
  - Est. National Slaughtering : 1,487,840 heads
  - Cambodian production : 70,046 T (Est. Value \$114 million)
  - Industrial pork production : 711 T (Value \$1.6 million)
  - Per capita consumption (National) : 2.8 Kg per head
  - Recorded Slaughter Phnom Penh : 450,684 head ( 30% of national kill )
  - Per Capita Consumption Phnom Penh: 16.1 Kg per head
  - Recorded National Slaughtering : 709,637 head plus
  - Home consumption : 118,299 Home consumption
  - Indicative Unrecorded Slaughtering : 650,801 heads
  - Increase in Production required by 2020: 12,118 T (population increase only).

Chart 1: Livestock Production in Cambodia<sup>3</sup>



<sup>2</sup> Source: Pig Marketing in Cambodia, SLPP, April 2007

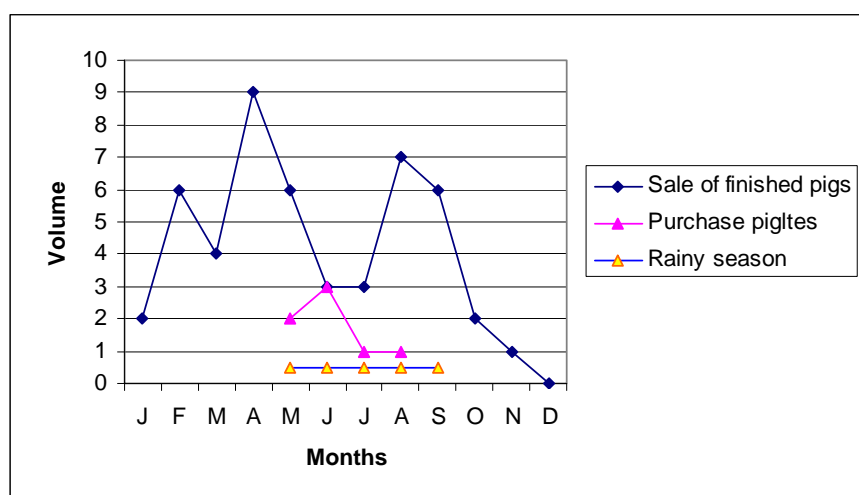
<sup>3</sup> Source: National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants, MOE, July 2006

- About 94% of Households (HH) in Samraong and Tramkak districts of Takeo province and 77% of HH in Basedh and Samraong Tong districts of Kampong Speu province practiced pig raising in 2006. But not the same as 2007 the number of pig raisers was found decreasing. This is due to the impact of imported pigs from Vietnam.
- About 85% of the pig smallholders produce local pigs, because they thought that their investment would be low and local pigs more resist to diseases and climate when rear as scavenging (free range) pigs. 15% of smallholder producers produce pigs from hybrid and they thought that they could get more expensive price and better growth.
- There are two types of pigs the people commonly raise: local breed (Chrok Kampot) and exotic breed (Chrok Koun Katt). The characteristics of both pigs are as follows:

<b>Hybrid</b>	<b>Local Breed</b>
• More lean meat	• Meat contains with fat
• Rind is thin	• Rind is thick
• Small bone – traders like	• Big bone – farmers like
• Not tolerate to some diseases (stress and pasteurellosis)	• Tolerate to stress and some disease
• Grow better with concentrated feed	• Adapt to situation – free range for foraging
• Better weigh gaining and more expensive	• Cheap sell to market
• Grow faster in good condition – concentrated feed	• Grow slow • Easy to grow

- The common practice in the two studied provinces is that 80% of small-scale pig producers use the traditional practice of self-selection of existing breeds from healthy and productive parents from either local species or hybrids for production and keep next gilt generation as sows for piglet production and expansion and or selling to other smallholder pig producers. Meanwhile, the neighboring farmers visit the pig farm, observe and identify the sow and piglets appearance, and then they buy some of piglets to rear as fattening pigs and sows. The farmers continue to do like this again and again until the breed becomes degraded. These breeds are available from other pig producers for minimal costs.
- Piglets are also supplied locally or from neighboring districts via passing traders who carry piglets on the back of their motorbikes. In some cases, pig raisers (in both study provinces) who are more confident in selecting piglets and know where to get better piglets travel to big pig farm to buy their own piglets. There are several large-scale suppliers for hybrid stocks, and the famous large-scale supplier in Kandal is Luck Hok Farm and CP Company in Kampong Speu, who are producing hybrid stocks for selling to other medium and large-scale pig producers. The prices of piglets vary in accordance to breed and weight.

Chart 2: Smallholder sale and purchase of pigs<sup>4</sup>



The graph indicates that the major stock sales before and after the wet season and the purchases of piglets during the wet season. The shortfall in slaughter pigs occurs over the period of October and April/May and triggers imports from Thailand and Vietnam.

- Piglets are usually about 6 – 7 kg for local breed and 10 – 12 kg for hybrid at purchase. 40% of pig smallholders purchase undersized piglets due to given limited financial resources. Many poor HHs suffer from a death rate of piglets: 60% of the piglets die after several weeks later at the weight of 15 – 20 kg per animal.

Table 1: Price of piglets as of August 2007<sup>5</sup>

Piglet's weight, kg	Local breed, \$	Hybrid, \$
6 – 7	12.5	35
10 – 12	22.5	45

- Piglet production is hard and costly to most people, since sows require a special living condition and sophisticated care during lactation, after giving birth and during weaning process, because it required producers have appropriate management and production systems, thus only experienced and knowledgeable people can do the business. At the moment, the main piglet providers are medium and large scale pig producers in the districts.
- The people in the study provinces claimed that the breed between exotic boar and their sow sometimes cannot be linked with the success of mating, and also there is some disease transmission from boar to sow and or piglets. The price of breeding varies from 10,000 Riels to 30,000 Riels in accordance to distance and boar species.

<sup>4</sup> Source: Pig Marketing in Cambodia, Smallholder livestock production program, KH/AIDOC/2003/5824, April 2007.

<sup>5</sup> Source: Data was collected during the interview with the pig producers in Takeo and Kampong Speu provinces.

- Artificial insemination is not practiced yet in the study provinces. There will be a project to firstly start the service in Tramkak district, Takeo province.
- Pig production was not calculated properly by the pig producers. In this study the team attempts to record all expenses and revenues in the small-scale production in the both provinces.

Table 2: Cost and return analysis for pig fattening production<sup>6</sup>

	<b>TK, Riels/kg (lwt)</b>	<b>KSP, Riels/kg (lwt)</b>
<b>Revenue</b>	<b>6,800</b>	<b>6,800</b>
<b>Cost</b>	<b>12,701</b>	<b>12,2553</b>
Piglet	8,168	7,417
Feed	3,225	3,004
Medical	518	1,061
Overhead	513	421
Interest	131	0
Utilities	146	353
<b>Profit/Loss</b>	<b>-5905</b>	<b>-5,455</b>

### **1.2.2 Trading**

- Pigs are not difficult to sell. The pig smallholders mainly sell their pigs directly to local traders (commune or district traders, or district butcher), and medium holders to Phnom Penh traders. The sales of live pigs to local trader can be made into two ways: weighing and auction through bargain. The local trader is sometimes a butcher, a wholesaler and a retailer. Pig is slaughtered by butcher and sold to retailers in the provincial and or district markets. In Phnom Penh, after slaughter at the large city abattoirs, most of the meat was sold as carcasses through distribution to wholesalers and retailers in city markets.
- Live pig prices are the problem for producers due to cheapness and unequal prices paid by traders. The pig producer is the price taker. There is no formal market information system for the pig producers. This sometimes made the producers felt frustrated with raising pigs.

Table 3: Price of slaughtered pig sold as carcass as of August 2007<sup>7</sup>

<b>Abattoir</b>	<b>Price, Riels/kg</b>
Boeung Krapeur	9,700
Kilometer 7	9,500
Ang Tasaom, Takeo	9,300
Basedh, Kampong Speu	9,000

<sup>6</sup> The calculation is based on the interview with the pig producers in the two study provinces of Takeo and Kampong Speu.

<sup>7</sup> Data was collected during the interview with butchers in Takeo, Kampong Speu and Phnom Penh.



### 1.2.3 Retailing

- The retailers purchased pig meat from abattoir in the form of carcass. Then, they divided the carcass into different forms of meat with different prices sell to the consumers.

Table 4: Retail prices for each category of pig meat as of August 2007<sup>8</sup>

No.	Categories	Unit price per kg, Riel		
		Phnom Penh	Takeo	Kampong Speu
1	Lean meat	14,000	11,000	13,000
2	Rib	14,000	9,500	11,000
3	Bacon	11,000	8,500	9,000
4	Thigh	10,000	9,000	9,000
5	Fleshy bone	9,000	8,000	8,000
6	Inner stuff	8,000	8,000	8,000
7	Legs	6,000	4,500	4,500
8	Head	6,000	6,000	6,000
9	Fat	4,000	2,000	2,000
10	Rind	1,000	N/A	N/A

- The proportion of pig meat is different from the research from different sources. Below are the tables show different proportions of pig meat in China in Cambodia.

Table 5: Proportion of pork meat in Beijing, China<sup>9</sup>

	Weight (Kg/pig)	Share (%)
Pork	61.30	81.34
Other	14.06	18.66
<b>Total</b>	<b>75.36</b>	<b>100.00</b>
<b>Pork meat components</b>		
Fore end	13.25	17.58
Rear end	15.75	20.90
Fat-streaked pork	13.00	17.25
Tenderloin	1.00	1.33
Full loin	4.00	5.31
Joint	2.50	3.32
Spareribs	6.00	7.96
Cavity bone	4.00	5.31
Pork hock	1.80	2.39
Tail bone	0.25	0.33
Head	4.00	5.31
Tongue	0.50	0.66

<sup>8</sup> Data was collected during the interview with retailers in Takeo, Kampong Speu and Phnom Penh.

<sup>9</sup> Source: MATRIC China survey

Stomach	0.75	1.00
Lard	1.50	1.99
Heart	0.50	0.66
Liver	1.00	1.33
Lungs	1.25	1.66
Intestines	1.50	1.99
Ear	0.25	0.33
Kidney	0.50	0.66
Feet	2.06	2.73
<b>Total</b>	<b>75.36</b>	<b>100.00</b>

Table 6: Proportion of pork meat in Prey Veng, Cambodia<sup>10</sup>

	Weight (Kg/pig)	Share (%)
<b>Total</b>	<b>65.00</b>	<b>100.00</b>
Carcass	47.00	72.30
Other	18.00	27.70
<b>Total</b>	<b>88.00</b>	<b>100.00</b>
Carcass	78.00	88.63
Other	10.00	11.37
<b>Total</b>	<b>100.00</b>	<b>100.00</b>
Carcass	82.00	82.00
Other	18.00	18.00

### 1.3 Animal Movements

#### 1.3.1 Seasonality of animal movement

- In general, the pig was sold in all year round; it is just the number of pigs sold varied according to several factors or reasons. It is noticed that when small producers sell pigs, it is almost always related to urgent needs of cash and mainly for organizing the traditional ceremony. Only 28% of pig producers sell pig when pig become mature-age.

Table 7: Seasonality of pig movement<sup>11</sup>

Sell out fattening pig	All season	When need money	Chinese new year	Pchum Ben	Mature-age	Total
Ro Menh	37%	53%	0%	0%	5%	95%
Sre Ronoung	18%	43%	2%	7%	23%	93%

<sup>10</sup> Source: Pig production Prey Veng, APIP 2001

<sup>11</sup> Source: CEDAC report 2007

Trea	2%	40%	2%	0%	45%	88%
Tang Sya	5%	10%	5%	13%	33%	67%
Tuol Ampil	31%	33%	4%	20%	11%	100%
Veal	6%	15%	2%	13%	48%	83%
Total	16%	33%	2%	8%	28%	87%

### *1.3.2 Role and responsibility of stakeholders along the chain*

- **Piglet supplier**

- Piglet is produced at different levels: farmer producer, local trade, and commercial farm. At local trade level, it is not sure whether the piglet is vaccinated or not before selling out to the producer. At farmer level, mostly the pig is vaccinated before selling out to producers in the same village or outside the village, because most of the piglet producers are VAHLWs or producers who received appropriate training from either NGOs or Government and continue their business. The commercial farm produces piglets with high technology, in terms breed, cost and treatment or care. Thus, the price of piglet is higher than the piglet farmer produce or local trader sell.

- **Animal feed and medicine supplier**

- Referring to inputs, it includes vet medicines, animal feed and piglet supply for production. The vet medicines and animal feed companies from Phnom Penh sell medicines and feed to the wholesalers at provincial level, then the provincial wholesalers sell medicines to district shops, VAHW, pig producers and piglet producers, whereas animal feed the wholesalers sell directly to pig producers.

- **Animal health service provider**

- VAHW and district vets play important role as service providers for animal treatment and vaccination. Most of the pig producers can access to the service. Most of medium and large-scale producers treat their pigs by themselves with technical support of the companies selling vet medicines and vaccines. As mentioned earlier, vet medicines retailers play role as indirect service providers that they give instruction to smallholder producers for pig treatment. The common practice is that they instruct the pig producers by telling the doze of medicines to be injected or given to pigs.
- Despite, a lot VAHW were trainers by different institutions including NGOs and provincial department of animal health and production; animal health service is limited to disease prevention through vaccinations and disease treatment. In addition, the quality of service is still limited, in terms of knowledge and skills of the VAHW, as well as the knowledge of the people about treatment and disease prevention.
- One district vet association has been founded by French organization in Tramkak district, Takeo province for several years. The main purpose of establishing the association is to collectively buy medicines from wholesalers

or company, and sell to members on credit when they go to village for animal treatment.

- Vaccinations are given against hog-cholera and pasteurellosis in pigs and are partly subsidized by the government. Vaccines are not available at district veterinary stations.

- **Pig producer**

- Smallholder farmers mainly produce pigs as savings, when they need money they sell the pig immediately whether the price cheap or expensive. The medium and large-scale farmers grow pigs for commercial purpose. These farmers strongly consider about the market price. However, due to crisis of importing pigs from neighboring counties affected all levels of producers.
- The small producer mainly sell their pigs to local trader, local butchers, and sometimes to trader from Phnom Penh. Whereas the medium and large-scales producers always sell to traders from Phnom Penh.

- **Collector**

- Collectors play role as local trader and are purely independent, while others work in conjunction with Phnom Penh traders. However, their mode operation is quite similar – both get to keep the difference between the sales price and the purchase price. Phnom Penh traders/transporters will tell their collectors/ local traders what price they will pay, then leave the local traders to get the best price they can.

- **Phnom Penh traders**

- Phnom Penh traders/transporters purchased pigs from local traders/collectors to collect pigs from farmers. The Phnom Penh traders directly bought pigs from medium scale and or large scale famers. The price paid is always a subject of negotiation between buyer and sellers. However, it is a good price paid by Phnom Penh traders to medium and large scale farmers.

- **Butchers**

- The butchers in the district or in the provincial town come to the village and buy the pigs or the farmers call the butchers from the provincial town to district to buy their pigs. The butchers buy pigs at farm gate. Prices are set by the butchers and sometimes by the farmers. However, lastly the farmers become a price taker. The butchers mostly buy on credit from 1 to 30 days. This direct sale is mainly done by the small-scale farmers.
- Abattoirs are essentially plants for turning out meat in a very cost effective manner. At provincial or district level, the pigs bought from either farmers or local traders are slaughtered and distributed to wholesalers and retailers. Mainly, at district and provincial level, butcher is also wholesaler.

- In Phnom Penh, the butchers buy pigs from traders/transporters and slaughter in the abattoirs and distribute to the wholesalers and retailers in Phnom Penh markets.
  - Butchers either in Phnom Penh or in provinces or districts are sometimes wholesalers and retailers.
- **Wholesalers**
    - The wholesalers purchased pig meat from slaughterhouse in the form of carcass with offal. There are wholesalers who purchase several carcasses from the abattoirs and then sell them to retail butchers.
- **Retailers**
    - The retail function, where product is sold directly to the end user, is split between a variety of different actors. Retail butchers do taking full carcasses and cutting them down to size and forms for retail sale. In Phnom Penh, this is increasingly being handled by supermarkets that are mostly selling finished, packaged product.

### *1.3.3 Cost of moving: farm to folk*

- There are different costs of moving pigs from farm to folk. The table below shows these costs.

Table 8: Costs of moving pigs

	<b>Cost of transport, Riel per kg</b>				
	<b>To farm gate</b>	<b>To collector</b>	<b>To trader</b>	<b>To abattoir</b>	<b>To wet market</b>
Farm gate	-	NA	NA	15 (TK) 10 (KSP)	-
Abattoir	-	-	-	-	25 (Boeung Krapeu, PNH) 40 (Kilometer 7, PNH) NA in Takeo NA in Kampong Speu
Collector	-	-	10 (TK)	-	-
Trader	-	-	-	50 (KSP to PNH) 45 (TK to PNH)	-

## 2. Relevant Price Information

### 2.1 Information Price from AMO

#### 2.1.1 Listing of information available

- The prices of hybrid live pig are more expensive than local species.

Table 9: Prices of live pig according to breeds at farm gate in the studied provinces as of August 2007<sup>12</sup>

Breed	Riels/kg		
	2005	2006	2007
Hybrid	4700	4900	6225
Local	3775	4025	5457

- The prices of carcass

Table 10: Price of slaughtered pig sold as carcass as of August 2007<sup>13</sup>

Abattoir	Price, Riels/kg	Cost of transport, Riels/kg
Boeung Krapeur	9,700	25
Kilometer 7	9,500	40
Ang Tasaom, Takeo	9,300	NA
Basedh, Kampong Speu	9,000	NA

- The retail prices

Table 11: Retail prices for each category of pig meat as of August 2007<sup>14</sup>

No.	Categories	Unit price per kg, Riel		
		Phnom Penh	Takeo	Kampong Speu
1	Lean meat	14,000	11,000	13,000
2	Rib	14,000	9,500	11,000
3	Bacon	11,000	8,500	9,000
4	Thigh	10,000	9,000	9,000
5	Fleshy bone	9,000	8,000	8,000
6	Inner stuff	8,000	8,000	8,000
7	Legs	6,000	4,500	4,500
8	Head	6,000	6,000	6,000
9	Fat	4,000	2,000	2,000
10	Rind	1,000	N/A	N/A

<sup>12</sup> The prices of live pig were provided during the interview with pig producers and butchers in Takeo and Kampong Speu.

<sup>13</sup> Data was collected during the interview with butchers in Takeo, Kampong Speu and Phnom Penh.

<sup>14</sup> Data was collected during the interview with retailers in Takeo, Kampong Speu and Phnom Penh.

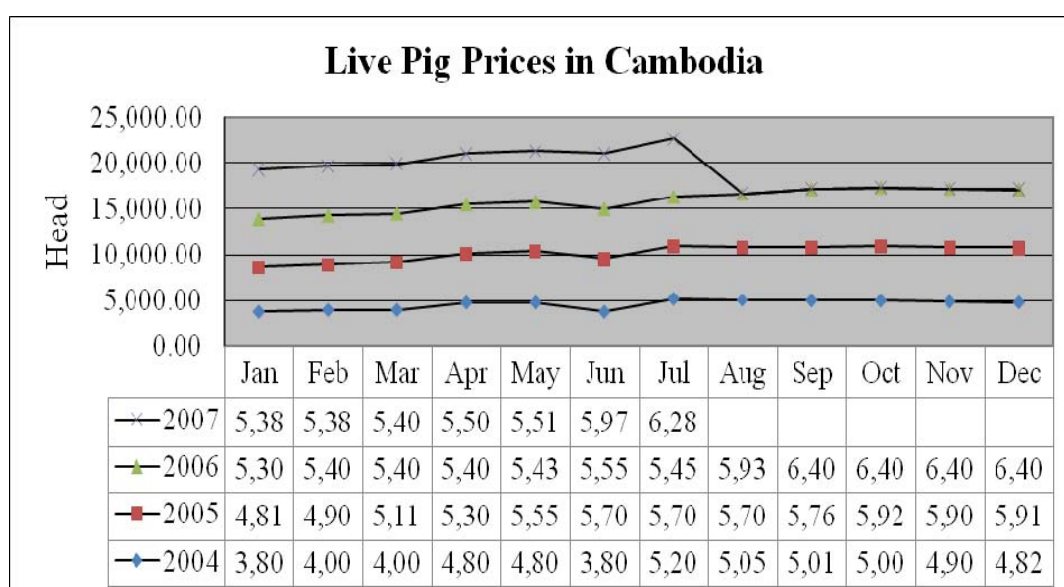
- The prices of piglets

Table 12: Price of piglets as of August 2007<sup>15</sup>

Piglet's weight, kg	Local breed, \$	Hybrid, \$
6 – 7	12.5	35
10 – 12	22.5	45

### 2.1.2 Updating system by AMO

Chart 3: General prices of live pigs<sup>16</sup>



Breed	Rields/kg		
	2005	2006	2007
Hybrid	4700	4900	6225
Local	3775	4025	5457

### 2.1.3 Evaluation of reliability of data (comparison of AMO data and actual prices)

- The information updated by AMO is not so reliable, because AMO did not specify the type of breed and at what level the price was.

### 2.1.4 Who receive systematic information from AMO?

- Only institution that do research received the information from AMO. The way gathering information from AMO is not clear whether to pay or not for service.

<sup>15</sup> Source: Data was collected during the interview with the pig producers in Takeo and Kampong Speu provinces.

<sup>16</sup> Source: Agricultural Market Information, Agricultural Marketing Office, Department of Planning, Statistics and International Cooperation, MAFF, 2007

## **2.2 Needs of Stakeholders**

### ***2.2.1 List of stakeholders interested to get market prices***

- All the actors along the chain:
  - Farmers
  - Traders
  - Wholesalers
  - Retailers
  - Processors
  - Consumers
  - Exporters
- Researcher
- NGOs,
- UNs
- Government

### ***2.2.2 Importance of market price list for each category of stakeholders***

- It is important about the price information for different actors along the chain for their decision making, especially the farmers who always suffer from price taken without support sources.
- For NGOs, research institutions and UN may need information for their assessment to see the trend of market related price and food security locally and globally.
- More important of the information is for government itself that need planning for the future and for decision making in relation to policy, problem or trading, and so on.

### ***2.2.3 Listing of prices needed***

- The prices needed to collect should be included:
  - live pig with different breeds at different levels
  - wholesale (selling price as carcass)
  - retail (different parts of meat)
  - cost of moving pig at different levels

## **2.3 Options to Deliver Information**

### ***2.3.1 Means to get updated information***

- There may be different means that possibly update information:
  - Relevant government staffs align the MAFF in the provinces and cities collect reliable information and send it electronically to the AMO. From AMO, the information should be regularly disseminated through media (radio and TV), also AMO should develop Market Information Bulletin that can be weekly



distributed to relevant concerns that may help the poor farmers and other actors in decision making in their businesses.

- At commune level, may create affordable payment system for gathering information. The members of the Commune Councilor who will collect or who will pay someone to collect information from market and place on the board at commune hall. The payment should be made by the commune people who want the information of their related commodities.
- AMO should develop a clear policy and procedure of disseminating information about whom and how much should pay for getting information from AMO.

### ***2.3.2 Who can send accurate information***

- Marketing expert (firm)
- VLHW
- District vet
- Commune council member
- Motodup (taxi driver)
- Imposed tax collector (through SMS)

## **3. Organization of Meetings with Stakeholders: Findings**

### **3.1 Methodology**

#### ***3.1.1 List of stakeholders participating in meeting***

- The field work for the study was carried out by involving different participants along the value chain, totally 340 participants including 313 pig producers, 5 vet medicines and animal feed shop dealers, 5 butchers, 15 pig meat retailers, and 1 sow raiser and 1 transporter.

#### ***3.1.2 Selection of participants***

- With assistance of MCO and in collaboration with provincial coordinators in the two study provinces, the small-scale pig producers at commune level were arranged and selected by commune councilors. The small-scale pig producers were from three communes in Kampong Speu province, and three communes in Takeo province.
- The other participants, mainly input suppliers, medium-scale producers, abattoir owners, transporter, traders, wholesalers, retailers, and consumers were selected by the study team via direct contact with those mentioned.

#### ***3.1.3 Schedule of meetings***

- The field work was carried out between August and September 2007 in the provinces of Takeo and Kampong Speu, and Phnom Penh municipality, Cambodia (see Appendix ).

### ***3.1.4 Arrangement of meeting***

- Before commencing with the field study, the team held meetings with stakeholders in the target areas, including:
  - Provincial Project Coordinators, District Vets and Commune Councilors from both provinces for orientation on the purpose and process of the study;
  - Pig producer groups in communal areas; representatives from selected communes for gathering information related to the study;
  - Other actors for tracking with the chain such as animal feed and medicines suppliers, piglet producers/suppliers, transporter, abattoirs/wholesalers, and retailers; and
  - Vets from the District Veterinary Association.
- In addition the team participated in several meetings with FAO project coordinator and Monitoring and Controlling Officer of Small-holder Livestock Project for consultation and comments. These interviews and meetings provided a more focused perspective on top of the study framework to help complete the focus of the field surveys.

## **3.2 Consumer Preferences**

### ***3.2.1 Preferred products***

- The people prefer eating different parts of pig meat. Well-off people like eating lean or loin meat, whereas poor people like eating bacon or meat contains with fat.
- Some characteristics expressed by butchers, wholesalers and consumers is that the pigs should be low cooking loss, high degree of tenderness, high percentage of meat, loin firmness and red meat.
- The interviewed consumers gave highest rates of pig meat then fish, beef and chicken.

### ***3.2.2 Perception of quality***

- Butchers, wholesalers and retailers focus on meat quality that pigs produce chops, roasts and other pork cuts that are well marbled and consistently tender, juicy and highly palatable. Such pig meats give superior eating qualities that the consumers would prefer to pay a premium price.

### ***3.2.3 Extra-payment for quality***

- The extra-payment would be happened in accordance to the quality of pork meat. It was not found any differences at consumer level during the study, but it was found the difference in terms of price of live pig paid to producer in relation to different breed (hybrid is more expensive than native).

### ***3.2.4 Guarantees requested by consumers***

- The consumers requested for the good quality of pork meat concerning with the follows:

- Meat without contaminated diseases and parasites,
- Sanitation and hygiene especially in the slaughterhouse and meat stalls, and
- Chemical free.

### **3.3 Butchers and Retailers Requirements**

#### ***3.3.1 Prices***

- The short supply affected the price of pork meat. Consequently, the price of pork meat was going up. The wholesalers could make the price up, oppositely the retailers did not. During the interview, the retailers suffered from buying pork meat in high price and selling to their customers in cheap price. This is because they wanted to retain their customers and expected to recover the loss in the future.
- In relation to the price, they also preferred reasonable price that they and their customers can afford.

#### ***3.3.2 Quality indicators***

- The indicators of good quality of pork meat, the butchers and retailers concerned with high proportion of meat, less fat, small born, thin rind, juicy, tender and red color.

#### ***3.3.3 Link with farmer groups***

- The farmers now produced different types of pigs: hybrid, cross-breed, and native. The farmers, however, who produced native pigs always suffered from selling pig in lower price than cross-breed or hybrid.
- Due to this reason, the farmers are required to produce cross-breed or hybrid pigs.

### **3.4 Slaughterhouses, Middlemen Requirements**

#### ***3.4.1 Regular delivery***

- It was complain that once few people grow pigs in the village and expensive, and sometimes the traders could find only one or two pigs a day in the province. They spent a lot time, energy and money for few pigs that was not like in 2006. On the other hands, pigs were not allowed to import from neighboring countries that caused rareness of pigs to supply for market demand. Short fall into stopping imported pigs and not enough locally supply made difficulties for slaughterhouses and middlemen to supply pork meat to wholesalers and retailers.
- Regular delivery is more important for all actors along the chain. As required, pork meat is consumed within the whole year round. If the shortfall in supplying locally there will be automatically an import from neighboring countries made either legally or illegally.

### ***3.4.2 Quality of pigs***

- During the study it was found that the pigs supplied are small (45 – 60kg in weight) and expensive, and the proportion of pork meat is low. Normally, the lean meat varies according to breed and age.

### ***3.4.3 Scale of price***

- The price at farm gate is still cheap if compare with the price middlemen and slaughterhouses owner get from wholesalers and retailers. However, the middlemen spent a lot of time, energy and money to find few pigs to supply. The scale of the price varied that cannot compute exactly it would be due to the high fluctuation of supply from the provinces.

## **4. Validation of Findings**

### **4.1 Methodology**

#### ***4.1.1 stakeholders invited – selection***

- There was a good coordination from Provincial Office of Animal Health and Production in both study provinces, as well as the collaboration of commune councils in organizing people in the meetings.
- Most of the participants attended the meetings are small-scale pig farmers, and they represented enough in responding the questions asked. However, the number of invited farmers is big that sometimes the team could not get specific answers to the questions.
- The meeting with individual interviewees seemed to be easier to get information.

#### ***4.1.2 organization of meetings***

- The meetings were well organized by allowing both male and female participants opportunities to expressed their concerns, problems and difficulties in relation to pig raising and selling.

#### ***4.1.3 record of data***

- All expressions of concerns, problems/constraints, difficulties, and suggestions of the participants along the chain were recorded properly. The observations of the participants were also made to verify whether the information received is correct.

#### ***4.1.4 analysis of data***

- The information and data collected from the field were analyzed and incorporated into the report, and also compared with other secondary data/information to cross-check and added up on the report.

## 4.2 Ways to Strengthen Linkages between Producers, Traders and Abattoir Owners

- The pig producers wanted to organize themselves as a group or an association that can build strong relationship with other actors along the chain, particularly with abattoir owners. Based on the interview with abattoir owners as well as traders (including transporter), they also indicated that they like to have affiliated with pig producers.
- The main objectives of linkage are to build good relationship with enough supply for the abattoir owners and traders to respond to the market demand, and vice versa the farmers will receive a warrantee and fair price.
- In order to strengthen linkages, there are some options to be considered:
  1. The pig producers organize themselves into association at community level and develop contract with abattoir owners in Phnom Penh for supply with warrantee price and plus premium in case of the quality meat meet the agreed standard. Based on the interview, this option seemed to be appreciated by all parties.
  2. The pig producers organize into association, and the association is the members of the National Pig Producer Association. All agreements or contracts should be made through the National Association. Thanks to the interview with pig producers and abattoir owners, this option is not preferable, whereas the animal feed and vet drug shop owners appreciated, because they are the members of the association.
  3. The last option is that with the facilitation of commune councils, the traders or abattoir owners buy pigs from the producers collectively at commune hall where the producers would be able to bring their pigs for selling to the traders. In this case, the agreement for business should also be made.

## 4.3 Quality Requirements

- For farmers, the quality is based on the introduction of a specific standard required by the middlemen or butchers. In this study, some farmers know how produce to fit market requirement in terms of quality, but most of the farmers especially the small-scale farmers did not know. What they talked about quality is that their pigs are healthy, mature and heavy enough to sell, not more than these.
- Concerning to the quality, for middlemen, is that the pig should be big enough (80-120 kg) in weight, healthy, fleshy and no disease contaminated.
- For butchers, they like the meat is red, juicy, well marbled, tender, and less fat contain.
- For consumers, there are two types: poor and well-off. The poor consumers like to eat meat containing some fat oppositely from the well-off like lean meat. Because they belief in cholesterol affecting heart and health. Moreover, the consumers prefer the same as butchers do.

#### **4.4 Market Losses along the Chain**

- The calculation of transport cost is hard to distinguish from the cost of pig. The complexity of cost linked with loading and unloading, taxation and other overheads.
- Most districts in Takeo and Kampong Speu provinces have abattoirs. The district abattoir, as well as village abattoir has to buy license from the authorized company at provincial level. The district abattoir has to pay 160,000 Riels per year.
- Some illegal fees occurred with the traders, wholesalers and retailers sometimes at provincial level and district level. The form can be meat or money.

#### **4.5 Strategy to Provide Market Information along the Chain**

- At the present, all clients along the chain are difficult or cannot access to information related to the prices. They do not know how to get the information and who provide it.
- AMO is a provider of related information of the commodity prices. However, it is difficult to get information in terms of mean and payment system for getting it.

### **5. Recommendations**

Addressing the challenges of increasing household income and employment through improving production and marketing linkages among the pig smallholder farmers is very difficult. It also identifies barriers to livestock input and output markets for smallholder producers in the country. The issues of the conditions of production, and physical access to markets make it very difficult for any of the pig farmers at community level to succeed in deriving a regular income out of raising livestock.

Particularly, constraints to livestock input markets include the uncertain quality and high prices of animal feeds, variable quality and high cost of more productive animal breeds, and inefficient delivery of vet services and high cost of vet inputs.

In order to eliminate the constraints faced by the various actors in the value chain in the study provinces, and to improve the situation of livestock, especially pig production, several recommendation below may help project designer to consider the possibilities and potentials.

To improve the situation of pig production, the following steps can be taken:

- ❖ Organizing pig producers into the form of association or farmer organization through which
  - to build their knowledge in technical pig production skills,
  - to build network of VAHWs that can provide pig producers with technical advice in disease prevention, treatment and diet management,
  - to train pig producers in optimizing the use of available local resources for making pig diet and other appropriate formula of diet component,

- to introduce technology and improved processes to help pig feed private business to supply quality and nutritious feed at affordable prices (base mix formula),
  - to help pig producers access to short term credit in the form of working capital from input suppliers,
  - to link pig producers with other existing credit sources (banks, MFIs, and other credit projects),
  - to provide good quality breeds that can increase in production and good quality demand, and to decrease mortality rate of piglets and pigs,
  - to link input suppliers to increase their abilities and willingness to provide financial services to existing and potential pig producers,
  - to raise awareness on benefits of vaccines and medicines, and veterinary services, and
  - to assist development of sustainable market access facilities and direct contract sale to abattoirs through facilitation of market linkages. These must have a clear understanding of where the potential is and how to make them happen.
- ❖ Creating new VAHWs and strengthening the capacity of both the existing and new VAHWs, so that they will provide good quality services to the pig producers.
  - ❖ Providing training for prospect breeders on techniques of raising and producing sows and piglets.
  - ❖ Establishing market driven systems to increase flow of information on prices and marketing mechanisms to the farmers.
  - ❖ Increasing flow of information on quality characteristics of pig and pig meat for buyers.
  - ❖ Helping producers and traders to target off-season market.
  - ❖ Establishing links with markets and strengthening pig producers to do group marketing.
  - ❖ Providing training on sanitation and animal epidemic disease to processors via collecting all processors to slaughter at slaughterhouse that managed by DAHP, provide training how to process, pork must be good quality.
  - ❖ Developing quality standards of pig meat through types of visual aids and raising among public.
  - ❖ Facilitating in taxation at provincial level by developing appropriate system.
  - ❖ Encouraging butchers in developing sewage system in slaughterhouse and improve slaughter facilities.

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## Appendix 1: Study Areas

### 1. Takeo

District	Commune	# of Village	# of Family	# of Pig Raiser	%	Characteristics of Selected Areas	
						Market	Location
Samrong	Trea	11	1,882	1,854	99	Not developed	Near district market
Tramkak	Sre Ronoung	17	1,535	1,405	92	Not developed	Near district market
Tramkak	Leay Bo	25	3,938	3,590	91	Developed	Near district market

### 2. Kampong Speu

District	Commune	# of Village	# of Family	# of Pig Raiser	%	Characteristics of Selected Areas	
						Market	Location
Samroang Tong	Roleang Kreul	26	2,041	1,281	63	Not developed	Near Phnom Penh
Basedh	Tuol Ampil	15	1,875	1,577	84	Not developed	Near district market
Basedh	Pou Angkrang	15	2,966	2,486	84	Not developed	Far from market

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### 3. Phnom Penh

Location	Characteristics of Area	# of interviewees	Role in the Chain
Phsar O'reussey	Big market	2	Retailer
Phsar Thmey	Big market	2	Retailer
Phsar Deumko	Medium market	1	Retailer
Phsar Samaki	Small market	1	Retailer
Beung Krapeur	Big abattoir	1	Transporter
Beung Krapeur	Big abattoir	1	Butcher
Kilometer 7	Big abattoir	2	Butcher

## Appendix 2: List of Respondents

### 1. Sre Ronong Commune, Tramkak District, Takeo Province:

No.	Name	Position	Address & Organization	Meeting place
1	Srey Sam	First Deputy Chief of Commune	Sre Ronong commune	Sre Ronong commune hall
2	Yem Kuy	Commune Chief	//	//
3	Mey Khet	Second Deputy Chief of Commune	//	//
4	Soy Chea	Pig Producer	Kok Roveang village	//
5	Suk Soeun	//	Sre Chumneang village	//
6	Chen Bunthoeun	//	Takeo village	//
7	Chhorn Norm	//	Trapiang Tonlaop village	//
8	Chhan Thy	//	Prachum village	//
9	Khut Thon	//	Takeo village	//
10	Chhoun Yom	//	Thmey village	//
11	Oung Sern	//	Trapiang Tonlaop village	//
12	Nget Touch	//	//	//
13	Chhel Putha	//	Prachum village	//
14	Khem Sovann	//	//	//
15	Kuch Kouk	//	Kriang Svay village	//
16	Chhin Bupha	//	//	//
17	Morn Sophal	//	//	//
18	Sem Sok	//	//	//
19	Phu Sarith	//	//	//
20	Sem Supheap	//	//	//
21	Mun Sopheap	Member of Village Committee	//	//
22	Pech Sann	//	//	//
23	Nget Vann	//	//	//
24	Pao Kak	//	//	//
25	Rath Samai	//	Takeo village	//
26	Kheb Chanthou	//	Kok Roveang village	//
27	Chev Sok	Pig Producer	//	//
28	Soun Touch	Chief of Village	Sre Chheu Tbong village	//
29	Tok Tun	Pig Producer	//	//
30	Pech Chorn	Chief of Village	Prachum village	//

2. Leay Bo Commune, Tramkak District, Takeo Province:

No.	Name	Position	Location & Organization	Meeting place
1	Thlang Ra	Pig producer	Prasat village	<b>Leay Bo commune hall</b>
2	Huy Thoeun	VAHW	Trapiang Chhuk village	//
3	Chak Chantha	Pig producer	Ang Koki village	//
4	Chhuon Pheng	VAHW	Ang Neareay village	//
5	Va Vett	VAHW	Trapiang Pring village	//
6	Hing Ngin	Pig producer	Kach Trork village	//
7	Sep Phoeun	//	Khna village	//
8	Soy Suy	//	Ang Neareay village	//
9	Kuy Touch	//	//	//
10	Eang Vanmony	VAHW	Ampil village	//
11	Duol Saroong	Pig producer	Prey Kus village	//
12	Pich Chenda	//	Bak Kot village	//
13	Khuon Suy	VAHW	Trapiang Kak village	//
14	Lang Chron	Pig producer	Ang Neareay village	//
15	Lim Keng	VAHW	Kach Trorkvillage	//
16	Khin Salim	VAHW	//	//
17	Nopp Sitha	VAHW	Khna village	//
18	Eum Hok	Pig producer	Trapiang Chhuk village	//
19	Leap Samoeun	//	Ang Koki village	//
20	Tem Sao	//	Khna village	//
21	Kiev Vannak	//	Ang Koki village	//
22	Long Leang	//	Kach Trork village	//
23	Khaov Sokhorn	//	Trapiang Chhuk village	//
24	Mao Saroeun	//	//	//
25	Sao Roeun	//	Ang Neareay village	//
26	Toch Vann	//	//	//
27	Sem Sokha	//	Kach Trork village	//
28	Oun Sum	//	Trapiang Kou village	//
29	Eang Touch	//	//	//
30	Tep Saroeun	//	Trapiang Pring village	//
31	Hem Yem	//	Khna village	//
32	Sok Sarom	//	Trapiang Pring village	//
33	Kean Muth	//	//	//
34	Nget Samboeun	//	//	//
35	Bun Kruy	//	//	//
36	Hem Chett	//	Kach Trork village	//

37	Phim Vett	//	Khna village	//
38	Phann Phoeun	//	Ang Koki village	//
39	Pen Sun	Commune agriculturist	Leay Bo commune	//
40	Doeur Chhum	CC member	Leay Bo commune	//
41	Meas Mon	CC member	Leay Bo commune	//
42	Sum Sophat	First Deputy Chief of commune	Leay Bo commune	//
43	Keo Sambath	Pig producer	Khna village	//
44	Sek Mok	//	//	//

### 3. Trea Commune, Samraong District, Takeo Province:

No.	Name	Position	Location & Organization	Meeting place
1	Ven Pha	Chief of village	Veng Village	//
2	Prom Thorn	//	Tnaot Te village	//
3	Hin Hou	Pig producer	//	//
4	Nuon Nim	//	//	//
5	Touch Kong	//	//	//
6	Me Kuoy	//	//	//
7	Soeung Phy	//	//	//
8	Moul Pheap	//	//	//
9	Tuon Samet	VAHW	//	//
10	Prak Mom	Vice chief of village	Trea Village	//
11	Chheng Leng Ha	Pig producer	Trea Leu Village	//
12	Sorn Khon	//	//	//
13	Ven Sey	//	//	//
14	Khatt Thorn	//	//	//
15	Sao Bo	//	//	//
16	Long Sarin	//	//	//
17	Em Chuon	//	Doung village	//
18	Meas Thy	//	//	//
19	Tonn Mao	//	Trea Village	//
20	Chuon Nin	//	Thmea village	//
21	Say Chanthorn	//	Trapiang veng village	//
22	Patt Morn	//	Trea Village	//
23	Chann	//	Reussey Chum village	//
24	Tith Chann	//	//	//
25	Orng Samuth	Vice chief of village	//	//
26	Heng Sroy	//	Trea Village	//

27	Loeun Kheng	Chief of village	Doung village	//
28	Sim Thay	Pig producer	//	//
29	Neou Sim	//	//	//
30	Chea Chhorith	//	//	//
31	Sin Sokhom	CC member	Trea Village	//
32	Huot Chhong	Vice chief of village	Veng Village	//
33	Eam Sovann	CC member	Trea Village	//
34	Pal Kimly	CC member	Trea Village	//
35	Siang Lanh	Pig producer	Trea Village	//
36	Keo Ol	CC member	Trea Village	//
37	Aob Sea	CC member	Trea Village	//
38	Uoch Hing	Chief of village	Reussey Chum village	//
39	Suon Rith	Commune chief	Trea Village	//

#### 4. Tuol Ampil Commune, Borsedth District, Kampong Speu Province:

No.	Name	Position	Location & Organization	Meeting place
1	Ouch Oun	Pig producer	Mi Leav village, Ampil commune, Borsedth district	Tuol Ampil commune hall
2	Chhun Pheak	//	//	//
3	Soeung Louk	//	//	//
4	Eam Sourn	//	//	//
5	Tonn Mov	//	//	//
6	Pen Sovann	//	//	//
7	Kung Bo	//	//	//
8	Saom Chung	//	Sangkream Bo	//
9	Part Vet	//	//	//
10	Pho Pha	//	//	//
11	Um Bi	//	//	//
12	Mao Ouk	//	//	//
13	Tuy Phorn	//	//	//
14	Chheum Mom	//	//	//
15	Lim Thy	//	Tamoeun	//
16	Sam Cham	//	//	//
17	Men Kim	//	//	//
18	Uok Tho	//	Trapiang Chumreov	//
19	Nhem Cheav	//	//	//
20	Uob Sav	//	//	//
21	Bay Horn	//	//	//
22	Haong Bunny	//	//	//
23	Seang Boeun	//	//	//
24	Em Kha	//	//	//
25	Sok Pheach	Commune chief	Tuol Ampil	//

5. Po Commune, Borsedth District, Kampong Speu Province:

No.	Name	Position	Location & Organization	Meeting place
1	Yang Chanthol	Pig producer	Prey Eth village, Po commune, Borsedth district	Po commune hall
2	Oeun Chantha	//	//	//
3	Rin Ravy	//	//	//
4	Chhay Samneang	//	//	//
5	Soeun Try	//	//	//
6	Sar Sopheap	//	//	//
7	Koy Son	//	Trapiang Kak village	//
8	Nopp Yem	//	Prey Khla village	//
9	Pen Yeng	//	Prey Eth village	//
10	Topp Sreyna	//	//	//
11	Bin Hean	//	Po Kandal village	//
12	Sek Him	//	//	//
13	Long Sam Art	//	Prey Eth village	//
14	Chheung Chooun	//	Prey Khla village	//
15	Pech Chanthoeun	//	//	//
16	Eng Chunn	//	//	//
17	Huor Huot	//	Trapiang Kak village	//
18	In Dy	//	//	//
19	Nopp Rom	//	//	//
20	Sun Heng	//	//	//
21	Ream Phol	//	//	//
22	Chea Peov	//	//	//
23	Pang Vannchhorn	//	//	//
24	Suong Sarith	//	Trapiang Prey village	//
25	Lounh Song	//	//	//
26	Nhanh Sokry	//	//	//
27	Mak Chanthy	//	//	//
28	Khoeur Norn	//	Po Kandal village	//
29	Khun Yoeun	//	//	//
30	Nopp Pros	//	//	//
31	Phi Phorn	//	//	//
32	Hi Touch	//	//	//
33	Sam Kim Sorn	//	//	//
34	Chum Nopp	//	//	//
35	Chhin Thol	//	Trapiang Kak village	//
36	Touch Chhem	//	//	//
37	Chann Touch	//	//	//
38	Sok Yoeun	//	//	//
39	Keo Phann	//	Po Kandal village	//
40	Neou Pith	//	//	//
41	Prach Yeng	Commune chief	Po Ang Krong village	//

42	Hong Damm	Pig producer	Po Kandal village	//
43	Suon Sokhom	District vet	//	//

6. Roliang Kreul Commune, Samraong Tong District, Kampong Speu Province:

No.	Name	Position	Location & Organization	Meeting place
1	Phann Dara	Pig producer	Roliang Kreul village, Roliang Kreul commune, Samraong Tong district	Roliang Kreul commune hall
2	Men Sinat	//	//	//
3	Mech Thet	//	//	//
4	Meng Onn	//	//	//
5	Suon Sambo	//	//	//
6	Suos Hun	//	//	//
7	Tith Sary	//	Trapiang Kakah village	//
8	Son Sam Ang	//	//	//
9	Son Sam Ol	//	//	//
10	Um Channa	//	//	//
11	Um Sok	//	//	//
12	Uok Linh	//	//	//
13	Huy Kuy	//	Roliang Kreul village	//
14	Try Morn	//	Prey Sala village	//
15	Saom Lout	//	//	//
16	Samrith Kosal	//	//	//
17	Im Saroeun	//	Trapiang Kakah village	//
18	Chen Vang	//	//	//
19	Meach Thea	//	//	//
20	Seng Nat	//	Prey Sala village	//
21	Keng Choeun	//	//	//
22	Phuong Him	//	Roliang Kreul village	//
23	Pak Vanney	//	Prey Sala village	//
24	Sing Pit	//	Trapiang Kakah village	//
25	Chuon Saroeun	//	Prey Sala village	//
26	Yin Sarorn	//	//	//
27	Roeung Sokunthea	//	Roliang Kreul village	//
28	Sim Yat	//	Chambak Phaem	//
29	Chuop Lim	//	//	//
30	Yann Vann	//	//	//
31	Chhim Pho	//	//	//
32	Phann Na	//	//	//

## 7. Interview list of individual participants in Takeo & Kampong Speu

No.	Name	Role in Value Chain	Address	Tel	Remark
1	Seng Gnov	Animal feed and medicines retailer, pig producer	Takeo town market	012 735 315	
2	Em Eng Vibol	Animal feed and medicines retailers, pig raiser	Takeo town market	012 624 683 016 834 212 016 993 927	Takeo Provincial Vet
3	Lim Pharom	Vet medicines seller, Fattening pig and sow raiser	Trapiang Khlout, Angtasaom, Tramkak, Takeo		VAHW
4	Buth Sam Arn	Vet medicines seller, pig raiser	Taphem, Taphem, Tramkak, Takeo	012 258 185	VAHW, members of Tramkak Vet Association
5	Phal Leap	Animal feed and medicines seller, fattening pig and sow raiser	Takeo	011 614 993	
6	La Kong	Butcher, wholesaler, and retailers	Ang Tasaom, Tramkak, Takeo	012 310 644	
7	Keo Ponlok	Medium –scale Pig raiser: fattening pig, sow and boa	Ang Tasaom, Tramkak, Takeo	012 62 62 81	
8	Tuon Solin	Pig fattening and sow raiser	Trapiang Tonloab, Sre Ronong, Tramkak, Takeo	012 406 542 092 401 738	Husband and wife are VAHW
9	Kim Sophy	Village retailer	Trapiang Robeum, Sre Ronong, Tramkak, Takeo	012 19 22 742	Buy pig meat from Ang Tasaom Market
10	Cheap Chantha	Village retailer	Khna, Leay Bou, Tramkak, Takeo	012 407 500	Khna Market
11	Chan Thol	Town market retailer and butcher	Town market, Chba Morn, Kg Speu	016 645 989	
12	Srey Touch	Retailer	Town market, Chba Morn, Kg Speu	016 602 315	
13	Kruy Heng Ky	Butcher and retailer	Town market, Chba Morn, Kg Speu	016 344 766	
14	Sok Khim	Fattening pig raiser	Dakpor, Svay Kravann, Chba Morn, Kg Speu	016 626 022	
15	Vann Tha	Fattening pig raiser	Peanichkam, Roka Thom, Chba Morn, Kg Speu	092 216 568	
16	Keu Lay	Retailer	Trapiang Khsong, Tuol Ampil, Borsedth, Kg Speu	092 348 849	Piang Reusey Market
17	Suos Hun	Butcher	Roliang Kreul, Samroang Tong, Kg Speu	012 465 473	



## 8. Interview list of individual participants in Phnom Penh

No.	Name	Role in Value Chain	Address	Tel	Remark
1	Kear	Butcher, wholesaler & retailer	Phsar Deum Kor	012 93 93 76	Beung Krapeur abattoir
2	Phaok Ye	Trader & Transporter	Phnom Penh	012 56 77 37 011 56 77 37	
3	Chhung Huy	Wholesaler & Retailer	O' Reussey market	012 81 74 00 011 17 00 77	Beung Krapeur abattoir
4	Chak Eng	Retailer	O' Reussey market	012 95 57 09	From Beung Krapeur abattoir
5	Kim Lin	Retailer	Samaki market	012 71 92 25	From Kilometer 7 abattoir
6	Ung Chantha	Retailer	Phsar Thmey market	012 34 93 22	From Kilometer 7 abattoir
7	Deng Srey	Retailer	Phsar Thmey market	012 66 62 51	From Kilometer 7 abattoir
8	Vouch Leng	Retailer	Phsar Deumko market		From Beung Krapeur abattoir
9	Chhorn Chanvorn	Butcher & wholesaler	Phsar Deumko market	012 88 20 84 012 64 53 30	Kilometer 7 abattoir
10	Kim Hak	Butcher & wholesaler	Kilometer 7 abattoir	012 97 98 07	Kilometer 7 abattoir

### Appendix 3: List of coordination persons at provincial level

#### 1. Kampong Speu province:

No.	Name	Position	Location & Organization	Meeting place
1	Tep Vichet	Provincial Project Coordinator	Kg Speu province	Kg Speu Provincial Vet Office
2	Sok Pheach	Chief of Commune	Tuol Ampil commune	//
3	Suon Sokhom	District Vet	Bor Sedth district	//
4	Chhorn Sim	District Vet	Samroang Tong district	//

#### 2. Takeo province:

No.	Name	Position	Location & Organization	Meeting place
1	Tong Sophat	District Vet	Trankak district	Takeo Provincial Vet Office
2	Pen Sun	CC member	Leay Bo commune	//
3	Thay Ly	Provincial Project Coordinator	Takeo Province	//
4	Kheang Vanthy	District Vet	Samraong district	//
5	Suon Rith	Chief of commune	Trea commune	//
6	Srey San	First Deputy Chief of commune	Sre Ronong commune	//