



INDOCHINA RESEARCH

Cambodia-Canada Market Information Project (CAMIP) Fruit and Vegetable Traders: Baseline Study

Research Report

Prepared by: Indochina Research Limited
Prepared for: CAMIP
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1. OBJECTIVES AND METHODOLOGY

1.1. Background and Objectives of Research

The Cambodia-Canada Market Information Project (CAMIP) is operating within the Ministry of Agriculture, Forests and Fisheries (MAFF). It has two main components: (i) to improve the current Market Information Service as operated by the Agriculture Marketing Office (AMO) within MAFF; and (ii) to provide better market opportunities to all value chain participants, using improved market information.

To ensure the project is successful, CAMIP needs to have good knowledge of traders, so it can actively engage them in the project both as sources of market information and as actors in market development. To this extent, CAMIP commissioned IRL to carry out a baseline study of vegetable and fruit traders at 6 designated markets in Phnom Penh, Kandal, Kampong Cham and Kampot. This report is the culmination of that study. Results from this baseline will help CAMIP identify how to engage with traders so that they will actively engage with the project in equitable and a sustainable manner.

1.2. Methodology

The baseline study involved 135 interviews with fruit and vegetable traders and collectors in 6 designated markets in Phnom Penh, Kandal, Kampong Cham and Kampot. The interviews covered about 25 questions, which were developed by CAMIP and translated and piloted by IRL (see Annex 1 for a copy of the questionnaire). Interviews were administered by AMO staff, with supervision by IRL. To reduce potential bias resulting from the use of Government officials to carry out the survey, extra care was taken to ensure that AMO staff were introduced as representatives of CAMIP or IRL (rather than as AMO officials). In addition, AMO staff only carried out interviews in markets where they normally do not work.

At each market, interviewers aimed to interview 5 collectors and either 15 or 20 traders (15 traders in Chbar Ampov and Koki, and 20 traders in the remaining markets), half of which are wholesalers and half retailers. Wholesalers, which are less common than retailers, are more important in terms of the project's work, so they were intentionally over-sampled for this study. Interviewers also aimed to equally split interviews between fruit and vegetable traders, as traders tend to trade in either fruit or vegetables (rarely both). The exception was at Korki and Takhmao markets, where vegetable trading is more important. At these markets, only vegetable traders were interviewed. Table 1 provides a breakdown of interviews completed, by market.

Table 1 – Interviews completed by Market

| | Market Name | | | | | | Total |
|-------------------|--------------|-------------------|-------------|---------------|-----------------|--------------|-------|
| | Phsar Dumkor | Phsar Chbar Ampov | Phsar Korki | Phsar Takhmao | Phsar Boeng Kok | Phsar Samaki | Count |
| Trader (Veg) | 10 | 7 | 15 | 20 | 10 | 10 | 72 |
| Collector (Veg) | 3 | 3 | 5 | 5 | 1 | 1 | 18 |
| Trader (Fruit) | 11 | 8 | | | 10 | 10 | 39 |
| Collector (Fruit) | 1 | 2 | | | | 3 | 6 |
| Total | 25 | 20 | 20 | 25 | 21 | 24 | 135 |

Following administration of the questionnaire, those traders who were engaged in the one-on-one interviews and seemed interested in providing additional information were invited to join a Focus Group Discussion (FGD). One FGD was held for each market. To encourage traders' participation, FGDs were held at locations and at times convenient to the traders. Each FGD was moderated by IRL staff, with assistance from AMO staff. Guidelines for the FGDs were developed by CAMIP and translated by IRL (see Annex 2). A summary report of all of the FGDs was prepared by IRL and is attached (see Annex 3).

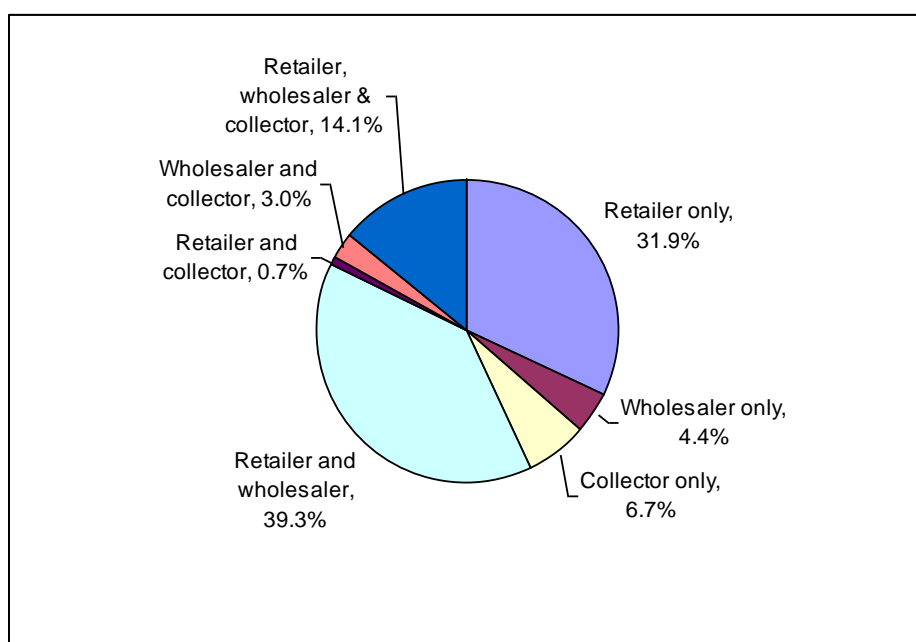
1.3. Analysis and Data Limitations

Data from the survey is summarized and analyzed in the following sections, and supplemented with findings from the FGDs. The analysis begins with a summary of the traders' demographics and some information on their assets, which act as indicators for income. The second section reviews the traders' activities, including who they most often trade with, their most important markets, changes in business, etc. The final section reviews the types and sources of market information that the trader's use.

Data is presented by market or by type of trader (e.g., wholesaler, retailer or collector), depending on what is most relevant to the analysis. It should be noted, however, that most traders consider themselves to be more than one type of trader. As such, comparison between the different types of traders is somewhat difficult, as most traders fall into multiple categories.

Overall, 85.9% of the traders reported that they are retailers; 60.7% reported that they are wholesalers, and 24.4% reported that they are collectors. But only 32% of the respondents are only retailers; 4.4% are only wholesalers, and 6.7% are only collectors (see Figure 1).

Figure 1 – Type of Trader as Percentage of All Traders Interviewed



Of the whole sample, retailers are most likely to be only retailers. Wholesalers are least likely to be only wholesalers; most are also retailers and/or collectors. Collectors are also likely to be both retailers and wholesalers (see Table 2). A breakdown of traders by market is included in Table 24 in Annex 4.

Table 2 – Type of Trader

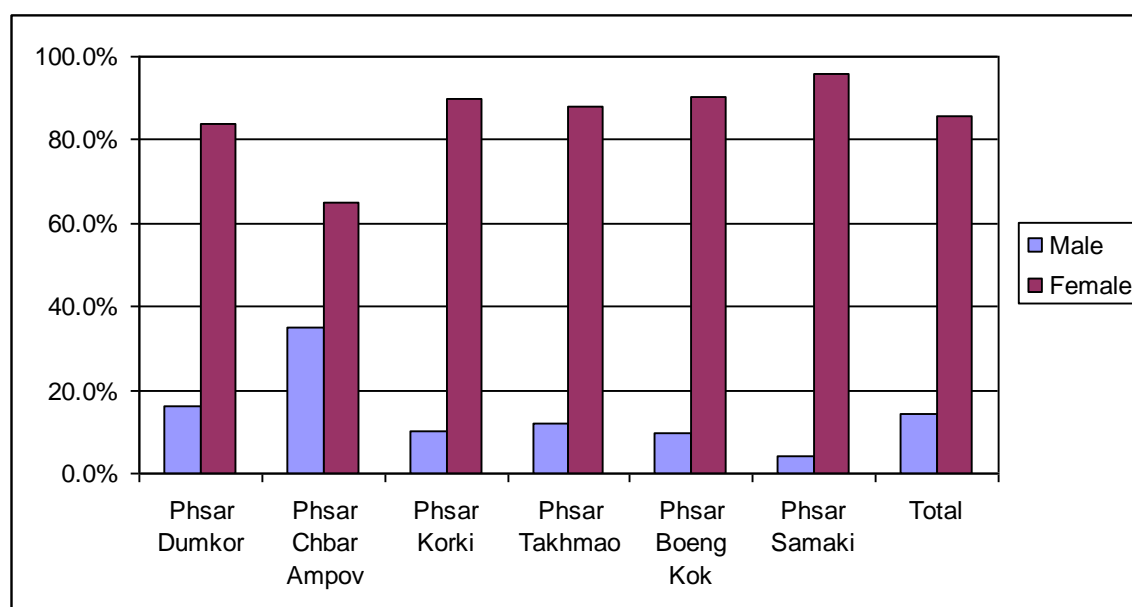
| | Retailer | | Wholesaler | | Collector | |
|-----------------|----------|--------|------------|--------|-----------|--------|
| | Count | Col % | Count | Col % | Count | Col % |
| Retailer | 43 | 37.1% | 53 | 64.6% | 1 | 3.0% |
| Wholesaler | 53 | 45.7% | 6 | 7.3% | 4 | 12.1% |
| Collector | 1 | 0.9% | 4 | 4.9% | 9 | 27.3% |
| All three types | 19 | 16.4% | 19 | 23.2% | 19 | 57.6% |
| Total | 116 | 100.0% | 82 | 100.0% | 33 | 100.0% |

2. TRADER PROFILE

2.1. Gender

Figure 1 provides a breakdown of traders' gender by market. Overall, 86% of the traders interviewed were female. The exception is at Phsar Chbar Ampov, where only 65% of the interviewed traders were female.

Figure 2– Gender by Market



Among those interviewed, female traders are slightly more likely to be wholesalers or retailers, and males are more likely to be collectors (see Table 3). However, even amongst collectors, almost 67% are female.

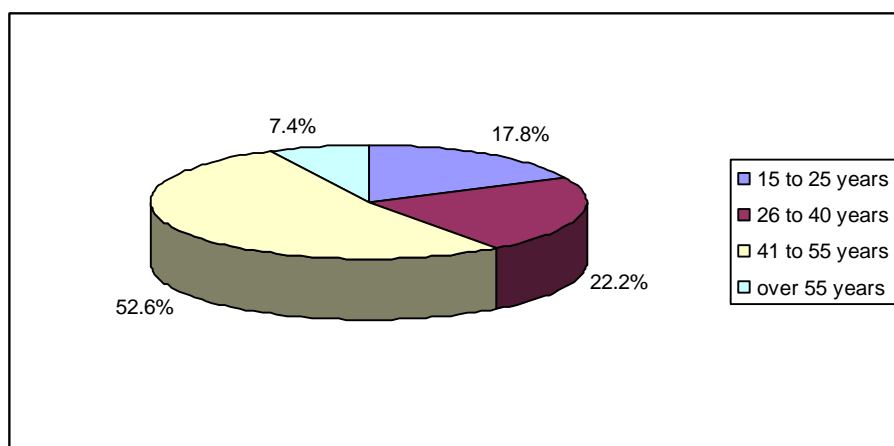
Table 3 – Gender by Type of Trader

| | Retailer | | Wholesaler | | Collector | |
|--------|----------|--------|------------|--------|-----------|--------|
| | Count | Col % | Count | Col % | Count | Col % |
| Male | 13 | 11.2% | 9 | 11.0% | 11 | 33.3% |
| Female | 103 | 88.8% | 73 | 89.0% | 22 | 66.7% |
| Total | 116 | 100.0% | 82 | 100.0% | 33 | 100.0% |

2.2. Age

Slightly over 50% of all traders interviewed are between the ages of 41 and 55, and 75% of all traders are between the ages of 26 and 55 (see Figure 2). There is little variation between markets. Collectors, however, are likely to be a little older. 63% of collectors are between the age of 41 and 55 (see Table 25 in Annex 4).

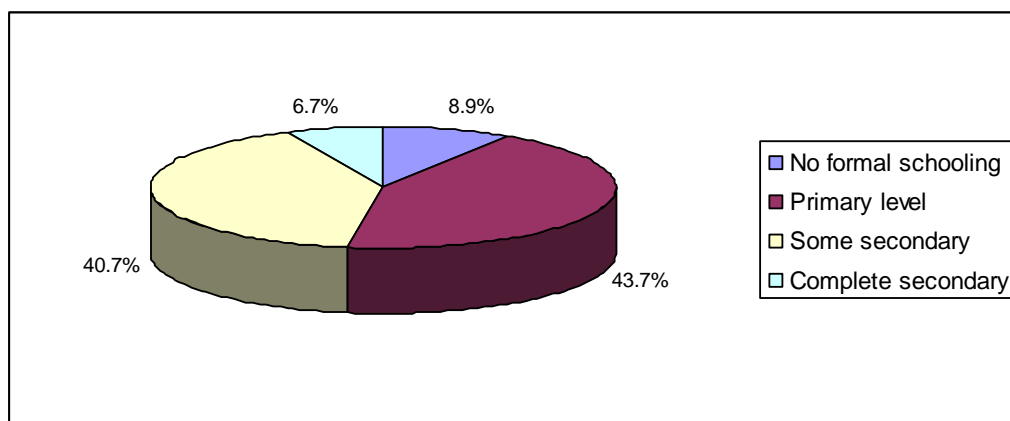
Figure 3 – Age of Traders



2.3. Education

In general, education levels are low amongst interviewees (though they are not necessarily lower than the general population). Overall, only 7% of traders have completed secondary school -- three in Phsar Chbar Ampov, one in Phsar Korki, and five in Phsar Boeng Kok. Only 41% have had attended some secondary school, and the rest have no schooling or only primary level schooling (see Figure 4).

Figure 4 – Education level of Traders



2.4. Assets

Assets and housing characteristics are often used in Cambodia as an indicator of income or wealth. For example, if someone owns a motorcycle, they are usually from a household with higher than average income (compared to the general population). Similarly, knowing that someone's home has a thatch roof is usually a good indication that she comes from a very poor household. Homes with more permanent roofing (i.e., concrete, tiles, zinc or fibro) are an indication that the household is better off economically.

Table 4 shows the breakdown of traders' roof-type by market. Amongst the traders interviewed, only 2.2% report that their home has a thatch roof. Most have homes with zinc or tile roofs. Based on roofing only, traders from Phsar Dumkor seem to be best off: 76% of their homes have roofs made of tile or concrete.

Table 4 – Type of Roof of Trader's Home by Market

| | Market Name | | | | | | | | | | | | Total | |
|----------|--------------|--------|-------------------|--------|-------------|--------|---------------|--------|-----------------|--------|--------------|--------|-------|--------|
| | Phsar Dumkor | | Phsar Chbar Ampov | | Phsar Korki | | Phsar Takhmao | | Phsar Boeng Kok | | Phsar Samaki | | Count | Col % |
| | Count | Col % | Count | Col % | Count | Col % | Count | Col % | Count | Col % | Count | Col % | | |
| Zinc | 5 | 20.0% | 11 | 55.0% | 12 | 60.0% | 14 | 56.0% | 4 | 19.0% | 11 | 45.8% | 57 | 42.2% |
| Tile | 12 | 48.0% | 5 | 25.0% | 6 | 30.0% | 8 | 32.0% | 15 | 71.4% | 7 | 29.2% | 53 | 39.3% |
| Fibro | 1 | 4.0% | 2 | 10.0% | 1 | 5.0% | 2 | 8.0% | 1 | 4.8% | 4 | 16.7% | 11 | 8.1% |
| Concrete | 7 | 28.0% | 2 | 10.0% | | | 1 | 4.0% | | | 1 | 4.2% | 11 | 8.1% |
| Thatch | | | | | 1 | 5.0% | | | 1 | 4.8% | 1 | 4.2% | 3 | 2.2% |
| Total | 25 | 100.0% | 20 | 100.0% | 20 | 100.0% | 25 | 100.0% | 21 | 100.0% | 24 | 100.0% | 135 | 100.0% |

This information is confirmed by data on the types of transportation owned by traders. Table 5 shows that 73% of traders have motorcycles and 68.9% have bicycles. Only 6% of traders have no form of transport -- these are wholesalers and retailers working in Phsar Takhmao, Phsar Boeng Kok, and Phsar Samaki. Wholesalers tend to have a wider variety of transport options, while collectors are more likely to have remorques (with motorcycles) and "taxis" (pick-ups or vans used to transport produce).

Table 5 –Transport by Type of Trader

| | Retailer | | Wholesaler | | Collector | | All traders | |
|--|----------|----------------|------------|------------------|-----------|-----------------|-------------|--------------|
| | Count | % of retailers | Count | % of wholesalers | Count | % of collectors | Count | % of traders |
| Motorcycle | 85 | 73.3% | 63 | 76.8% | 24 | 72.7% | 99 | 73.3% |
| Bicycle | 77 | 66.4% | 56 | 68.3% | 24 | 72.7% | 93 | 68.9% |
| Tractor/Koyon/Car | 9 | 7.8% | 9 | 11.0% | 2 | 6.1% | 11 | 8.1% |
| Remorque and motorcycle | 9 | 7.8% | 9 | 11.0% | 6 | 18.2% | 11 | 8.1% |
| None | 7 | 6.0% | 4 | 4.9% | | | 8 | 5.9% |
| Handcart | 7 | 6.0% | 7 | 8.5% | | | 7 | 5.2% |
| "Taxi" (van or pick-up for carrying produce) | | | 2 | 2.4% | 5 | 15.2% | 5 | 3.7% |
| Remorque | 1 | 0.9% | 2 | 2.4% | 1 | 3.0% | 3 | 2.2% |

| | Retailer | | Wholesaler | | Collector | | All traders | |
|---------------------|----------|----------------|------------|------------------|-----------|-----------------|-------------|--------------|
| | Count | % of retailers | Count | % of wholesalers | Count | % of collectors | Count | % of traders |
| Boat | 2 | 1.7% | 1 | 1.2% | | | 2 | 1.5% |
| Oxcart or Horsecart | 1 | 0.9% | 1 | 1.2% | | | 1 | 0.7% |
| Pickup | | | 1 | 1.2% | | | 1 | 0.7% |
| Motor cart | | | | | 1 | 3.0% | 1 | 0.7% |

Similar patterns emerge when respondents are asked about their ownership of radios, televisions and cell phones (see Table 6). Almost all respondents own a television, 67% own radios, and 67% have cell phones. Only 4% of the traders (from Phsar Takhmao and Phsar Boeng Kok) do not have any of these items.

Table 6 – Ownership of Radios, TVs and Cell Phones by Market

| | Market Name | | | | | | | | | | | | Total | |
|------------|--------------|--------------|-------------------|--------------|-------------|--------------|---------------|--------------|-----------------|--------------|--------------|--------------|-------|--------------|
| | Phsar Dumkor | | Phsar Chbar Ampov | | Phsar Korki | | Phsar Takhmao | | Phsar Boeng Kok | | Phsar Samaki | | Count | % of traders |
| | Count | % of traders | Count | % of traders | Count | % of traders | Count | % of traders | Count | % of traders | Count | % of traders | | |
| Television | 24 | 96.0% | 20 | 100.0% | 20 | 100.0% | 20 | 80.0% | 19 | 90.5% | 20 | 83.3% | 123 | 91.1% |
| Cell phone | 22 | 88.0% | 19 | 95.0% | 13 | 65.0% | 12 | 48.0% | 17 | 81.0% | 19 | 79.2% | 102 | 75.6% |
| Radio | 21 | 84.0% | 13 | 65.0% | 12 | 60.0% | 11 | 44.0% | 13 | 61.9% | 20 | 83.3% | 90 | 66.7% |
| None | | | | | | | 4 | 16.0% | 1 | 4.8% | | | 5 | 3.7% |

3. SALES AND ACTIVITIES

3.1. Size of Operation

The size of traders operations range from less than 2 square meters to over 10 square meters (see Table 7). Traders interviewed in Phsar Takhmao and Phsar Samaki have the smallest trading areas, while traders in Phsar Dumkor, Phsar Chbar Ampov and Phsar Boeng Kok have larger areas.

Table 7 – Size of Trading Operation by Market

| | Market Name | | | | | | | | | | | | Total | |
|-----------|--------------|--------|-------------------|--------|-------------|--------|---------------|--------|-----------------|--------|--------------|--------|-------|--------|
| | Phsar Dumkor | | Phsar Chbar Ampov | | Phsar Korki | | Phsar Takhmao | | Phsar Boeng Kok | | Phsar Samaki | | Count | Col % |
| | Count | Col % | Count | Col % | Count | Col % | Count | Col % | Count | Col % | Count | Col % | | |
| ≤ 2 m2 | 2 | 8.3% | 3 | 16.7% | 3 | 15.8% | 10 | 50.0% | | | 15 | 71.4% | 33 | 27.0% |
| 2 - 5 m2 | 9 | 37.5% | 7 | 38.9% | 4 | 21.1% | 10 | 50.0% | 8 | 40.0% | 6 | 28.6% | 44 | 36.1% |
| 5 – 10 m2 | 4 | 16.7% | 3 | 16.7% | 12 | 63.2% | | | 4 | 20.0% | | | 23 | 18.9% |
| > 10 m2 | 9 | 37.5% | 5 | 27.8% | | | | | 8 | 40.0% | | | 22 | 18.0% |
| Total | 24 | 100.0% | 18 | 100.0% | 19 | 100.0% | 20 | 100.0% | 20 | 100.0% | 21 | 100.0% | 122 | 100.0% |

Interestingly, the size of trading operation does not seem to vary much by type of trader (see Table 8). Retailers are slightly more likely to have smaller spaces, while wholesalers and collectors are likely to have larger spaces, but the differences are not so great. The slight difference between operating spaces of different types of traders is most likely due to the fact that many traders fall into more than one category of trader.

Table 8 – Size of Trading Operation by Type of Trader

| | Retailer | | Wholesaler | | Collector | |
|-----------|----------|--------|------------|--------|-----------|--------|
| | Count | Col % | Count | Col % | Count | Col % |
| ≤ 2 m2 | 33 | 29.2% | 14 | 18.2% | 3 | 13.6% |
| 2 - 5 m2 | 39 | 34.5% | 23 | 29.9% | 7 | 31.8% |
| 5 – 10 m2 | 21 | 18.6% | 19 | 24.7% | 6 | 27.3% |
| > 10 m2 | 20 | 17.7% | 21 | 27.3% | 6 | 27.3% |
| Total | 113 | 100.0% | 77 | 100.0% | 22 | 100.0% |

On average, 58% of the traders interviewed sell to consumers, 61% sell to wholesalers, and 49% sell to retailers (see Table 26 in Annex 4). As would be expected, retailers mostly sell to consumers, wholesalers mostly sell to retailers, and collectors mostly sell to wholesalers and retailers. The overlap in customers reflects the fact that most traders have different functions (both retailer and wholesaler, or retailer, wholesaler and collector).

3.2. Purchases, Sales and Activities

Traders were asked to list which markets were most important for them in terms of trade (see Table 9). In almost all cases, traders only trade within their own market. Only a few traders in Phsar Chbar Ampov, Phsar Takhmao and Phsar Boeng Kok trade in other markets.

The general lack of transactions between multiple markets could be an indicator of very high transport costs, which act as a barrier to entry for traders wishing to expand to new markets. It could also be an indicator of a general lack of networks existing outside of any one market, without which traders find it difficult to penetrate new markets.

Table 9 – Most Important Markets in which Traders Trade

| | Phsar Dumkor | Phsar Chbar Ampov | Phsar Korki | Phsar Takhmao | Phsar Boeng Kok | Phsar Samaki | Total |
|-------------------|--------------|-------------------|-------------|---------------|-----------------|--------------|-------|
| Phsar Dumkor | 25 | 1 | | 1 | | | 27 |
| Phsar Takhmao | | | | 25 | | | 25 |
| Phsar Samaki | | 1 | | | | 24 | 25 |
| Phsar Chbar Ampov | | 19 | | 3 | | | 22 |
| Phsar Boeng Kok | | | | | 21 | | 21 |
| Phsar Korki | | | 20 | | | | 20 |
| Phsar Thom | | | | | 3 | | 3 |
| Steung Treng | | | | | 2 | | 2 |
| Phsar Neak Meas | | | | 1 | 1 | | 2 |
| Phsar Sala Chin | | | | | 1 | | 1 |
| Phsar Roath | | | | | 1 | | 1 |
| Chamkar Leu | | | | | 1 | | 1 |
| Phsar Ta Ong | | | | | 1 | | 1 |
| Phsar Chamkar Leu | | | | | 1 | | 1 |
| Phsar Srae Veal | | | | | 1 | | 1 |
| Total | 25 | 21 | 20 | 30 | 36 | 24 | 135 |

On average, 63% of traders purchase their produce at the farm, 81% purchase from other traders, and 36% purchase on contract from farmers (see Table 27 in Annex 4 for a breakdown of purchases by market). As would be expected, collectors are most likely to purchase from farms (see Table 10). However, they are least likely to purchase from farmers on contract. Retailers and wholesalers are both most likely to purchase from other traders, though they also purchase directly from farmers, either after the harvest or on contract.

Table 10 – Average Proportion of Purchases by Type of Trader

| | Retailer | Wholesaler | Collector |
|-------------------------------------|----------|------------|-----------|
| Purchased at the farm after harvest | 54.2 | 60.1 | 74.2 |
| Purchased from traders | 79.9 | 74.6 | 50.0 |
| Purchased on contract from farmers | 31.7 | 32.2 | 15.0 |

Traders sell their produce to consumers, wholesalers and retailers (see Table 11). Not surprisingly, retailers are likely to sell the most produce to consumers. Wholesalers are most likely to sell to other wholesalers or retailers. Collectors are most likely to sell to wholesalers.

Table 11 – Average Proportion of Produce Sold

| Percentage of produce sold to: | Retailer | Wholesaler | Collector |
|--------------------------------|----------|------------|-----------|
| Consumers | 59.1 | 35.6 | 23.5 |
| Wholesalers | 48.7 | 56.0 | 64.8 |
| Retailers | 47.0 | 49.1 | 38.3 |

Three-quarters of traders clean produce, over half grade and store produce, and two-fifths package produce and transmit information about demand to suppliers. Few traders are involved in ripening, labelling or fumigating produce. None of the traders interviewed reported that they are involved in the activities related to certification of quality. Traders' activities are fairly similar across markets. The exception is in Phsar Samaki, where no one packages produce and very few traders store produce (see Table 12).

The number of traders that transmit information about demand to suppliers also varies greatly across markets. In Dumkor and Korki markets, most traders interviewed are sharing information with their suppliers on demand for produce. However, this is not occurring nearly as much in Chbar Ampov and Samaki markets, and between Takmao and Boeng Kok markets, only one trader is doing it.

Table 12 – Trader Activities by Market (% of traders in each market)

| | Phsar Dumkor | Phsar Chbar Ampov | Phsar Korki | Phsar Takmao | Phsar Boeng Kok | Phsar Samaki | Total |
|---|--------------|-------------------|-------------|--------------|-----------------|--------------|-------|
| Cleaning | 96.0% | 55.0% | 75.0% | 80.0% | 61.9% | 91.7% | 77.8% |
| Grading | 76.0% | 90.0% | 55.0% | 40.0% | 71.4% | 54.2% | 63.7% |
| Storage | 72.0% | 80.0% | 95.0% | 52.0% | 42.9% | 16.7% | 58.5% |
| Packaging | 80.0% | 15.0% | 55.0% | 44.0% | 42.9% | 0.0% | 40.0% |
| Transmission of information about demand to suppliers | 72.0% | 25.0% | 60.0% | 0.0% | 4.8% | 45.8% | 34.8% |
| Ripening | 16.0% | 5.0% | 5.0% | 4.0% | 4.8% | 20.8% | 9.6% |
| Labeling | 12.0% | 10.0% | 0.0% | 0.0% | 9.5% | 4.2% | 5.9% |
| Fumigation | 0.0% | 0.0% | 0.0% | 12.0% | 0.0% | 0.0% | 2.2% |
| Certification of quality | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Trader activities are linked more closely to what type of trader they are (see Table 13). Only collectors are involved in fumigation. Collectors are less likely to clean produce, store it or package it and only slightly more likely to transmit information about demand to suppliers (which is surprising, given that this would seem to be a fairly important thing for collectors to do to ensure that they are able to sell the produce they are buying). Almost all retailers clean produce, and most also grade and sort it.

Table 13 – Trader Activities by Type of Trader

| | Retailer | | Wholesaler | | Collector | |
|---|----------|----------------|------------|------------------|-----------|-----------------|
| | Count | % of retailers | Count | % of wholesalers | Count | % of collectors |
| Cleaning | 94 | 81.0% | 62 | 75.6% | 19 | 57.6% |
| Grading | 73 | 62.9% | 58 | 70.7% | 22 | 66.7% |
| Storage | 72 | 62.1% | 51 | 62.2% | 17 | 51.5% |
| Packaging | 48 | 41.4% | 32 | 39.0% | 9 | 27.3% |
| Transmission of information about demand to suppliers | 38 | 32.8% | 28 | 34.1% | 14 | 42.4% |
| Ripening | 11 | 9.5% | 8 | 9.8% | 3 | 9.1% |
| Labeling | 7 | 6.0% | 4 | 4.9% | 1 | 3.0% |
| Fumigation | 0 | 0.0% | 0 | 0.0% | 3 | 9.1% |
| Certification of quality | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |

According to the individual interviews, wholesalers are most likely to grade produce and store it. However, during the FGD, traders explained that grading is actually more important to retailers. Retailers grade products into two categories when they receive them: #1 and #2. Higher quality products demand a higher price. The percentage price differential for grades is, on average, 10% or 20% among retailers and 5% or 10% among wholesalers. High grade fruits have a higher price margin than high grade vegetables.

3.3. Vegetable Sales

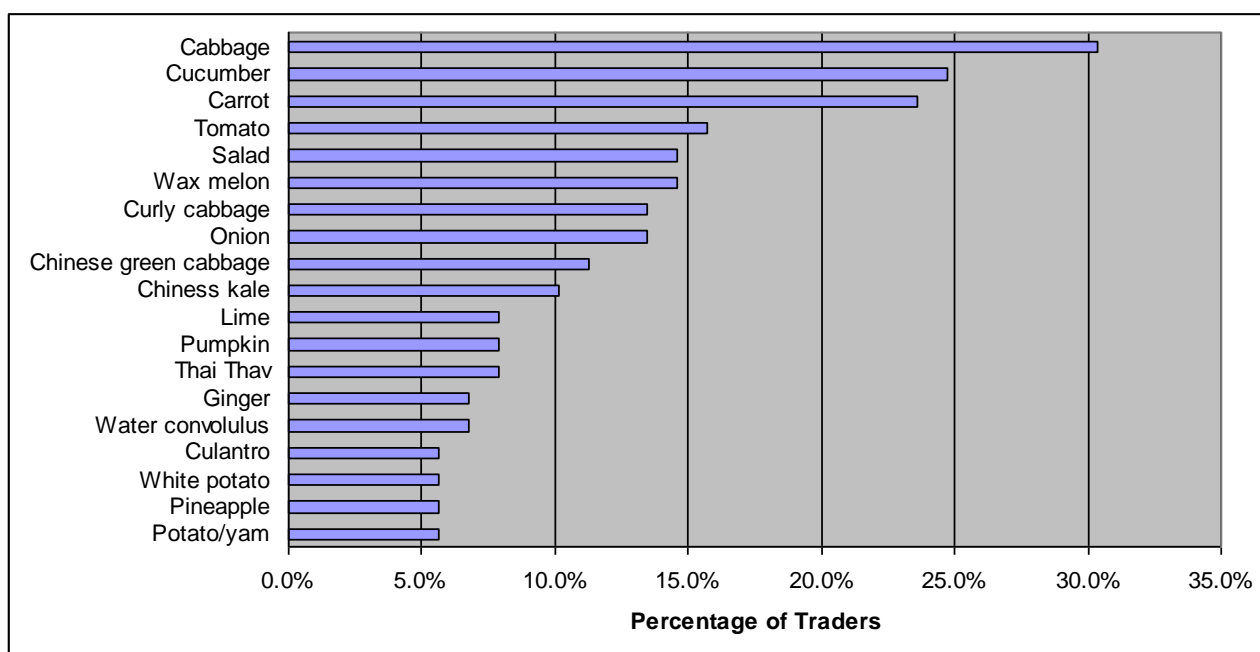
100% of vegetable traders in Chbar Ampov, Korki, Takhmao, Boeng Kok and Samaki sell vegetables year round. Only one trader interviewed in Phsar Dumkor is not selling vegetables ever month (see Table 14).

Table 14 – Months Selling Vegetables (N = 89)

| | Phsar Dumkor | Phsar Chbar Ampov | Phsar Korki | Phsar Takhmao | Phsar Boeng Kok | Phsar Samaki | Total |
|-------------|--------------|-------------------|--------------|---------------|-----------------|--------------|--------------|
| | % of traders | % of traders | % of traders | % of traders | % of traders | % of traders | % of traders |
| February | 7.7% | | | | | | 1.1% |
| March | 7.7% | | | | | | 1.1% |
| April | 7.7% | | | | | | 1.1% |
| May | 7.7% | | | | | | 1.1% |
| June | 7.7% | | | | | | 1.1% |
| July | 7.7% | | | | | | 1.1% |
| August | 7.7% | | | | | | 1.1% |
| Every month | 92.3% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 98.9% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

The top three most important vegetables for traders to sell are cabbage, cucumber and carrots. Figure 5 shows the most important vegetables sold, according to the percentage of traders selling them.

Figure 5 – Most Important Vegetables Sold (N = 89)



Important vegetables vary according to type of trader (see Table 15). Cabbage, cucumbers and carrots are the top three vegetables for retailers and wholesalers. While cabbage and cucumbers are also important for collectors, carrot sales are not as important (possibly because they are more likely to be imported than grown domestically). Tomatoes are an important sales item for retailers, but not for wholesalers or collectors.

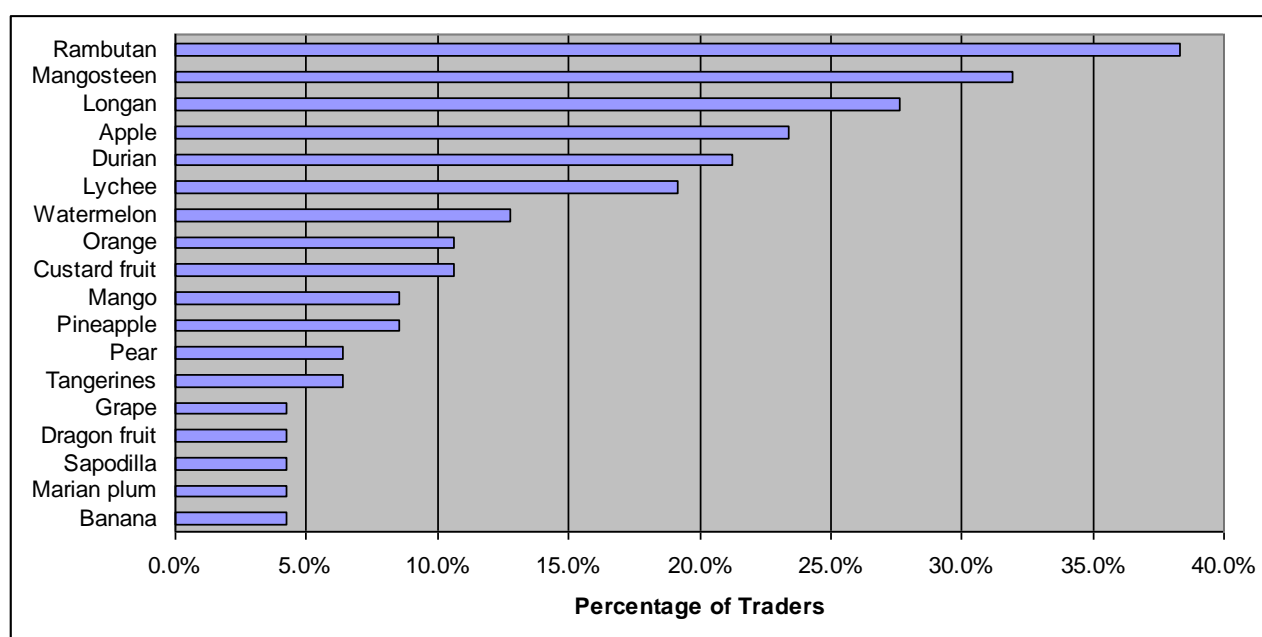
Table 15 – Most Important Vegetables Sold by Type of Trader

| | % of retailers | | % of wholesalers | | % of collectors |
|-----------------------|-------------------|-----------------------|---------------------|-----------------------|--------------------|
| Cabbage | 30.7% | Cabbage | 35.2% | Cucumber | 32.0% |
| Cucumber | 25.3% | Cucumber | 29.6% | Cabbage | 28.0% |
| Carrot | 25.3% | Carrot | 20.4% | Lettuce | 20.0% |
| Tomato | 17.3% | Wax melon | 16.7% | Curly cabbage | 20.0% |
| Lettuce | 16.0% | Onion | 13.0% | Chinese green cabbage | 20.0% |
| Wax melon | 16.0% | Chinese green cabbage | 13.0% | Wax melon | 16.0% |
| Onion | 13.3% | Lettuce | 11.1% | Pumpkin | 12.0% |
| Curly cabbage | 9.3% | Curly cabbage | 11.1% | Thai Thav | 12.0% |
| Lime | 9.3% | Pumpkin | 11.1% | Black cabbage | 12.0% |
| Water convolulus | 8.0% | Thai Thav | 11.1% | Carrot | 8.0% |
| Chinese green cabbage | 6.7% | Tomato | 7.4% | Chinese kale | 8.0% |
| Chinese kale | 6.7% | Chinese kale | 7.4% | Ginger | 8.0% |
| Pumpkin | 6.7% | Ginger | 7.4% | Water convolulus | 8.0% |
| Thai Thav | 6.7% | Potato/yam | 7.4% | Culantro | 8.0% |
| Pineapple | 6.7% | Arum | 7.4% | | |
| Culantro | 6.7% | Lime | 5.6% | | |
| Potato/yam | 6.7% | White potato | 5.6% | | |
| White potato | 6.7% | Leek | 5.6% | | |

3.4. Fruit Sales

Most fruit sellers also sell fruit year-round (see Table 28 in Annex 4). Traders in Phsar Samaki are least likely to sell fruit year-round. The most important fruits sold by fruit traders interviewed are rambutan, mangosteen, longons, apples, durian and lychee (see Figure 6).

Figure 6 – Most Important Fruits Sold (N = 47)



There is little variation between retailers, wholesalers and collectors in terms of the most important fruits they sell (see Table 16). The main exception is apples, which 26% of retailers sell, but only 17.2% of wholesalers and 11.1% of collectors sell.

Table 16 – Most Important Fruits Sold by Type of Trader

| | % of retailers | | % of wholesalers | | % of collectors |
|---------------|----------------|---------------|------------------|---------------|-----------------|
| Rambutan | 38.1% | Rambutan | 34.5% | Durian | 44.4% |
| Mangosteen | 33.3% | Durian | 27.6% | Rambutan | 22.2% |
| Longan | 31.0% | Longan | 24.1% | Watermelon | 22.2% |
| Apple | 26.2% | Mangosteen | 20.7% | Longan | 22.2% |
| Lychee | 21.4% | Watermelon | 20.7% | Mangosteen | 11.1% |
| Durian | 21.4% | Custard fruit | 17.2% | Custard fruit | 11.1% |
| Watermelon | 11.9% | Apple | 17.2% | Orange | 11.1% |
| Orange | 11.9% | Pineapple | 13.8% | Banana | 11.1% |
| Mango | 9.5% | Mango | 13.8% | Apple | 11.1% |
| Custard fruit | 7.1% | Orange | 10.3% | Sapodilla | 11.1% |
| Tangerines | 7.1% | Tangerines | 6.9% | | |
| Pear | 7.1% | Pear | 6.9% | | |
| Pineapple | 4.8% | Marian plum | 6.9% | | |
| Marian plum | 4.8% | | | | |
| Sapodilla | 4.8% | | | | |
| Dragon fruit | 4.8% | | | | |
| Grape | 4.8% | | | | |

3.5. Spoilage Losses

Traders were asked to report on spoilage losses for their most important produce. Tables 17 and 18 provide the average maximum and minimum spoilages losses (in kilograms per month) for the most important vegetables and fruits sold by traders.¹ Figures for all reported fruits and vegetables are in Tables 29 and 30 in Annex 4.

Table 17 – Average Spoilage Losses per Month of Most Important Vegetables Sold by Traders

| Vegetables | Maximum estimated loss (kg) | Minimum estimated loss (kg) | Difference (max - min) |
|-----------------------|-----------------------------|-----------------------------|------------------------|
| Cabbage | 683 | 311 | 372 |
| Cucumber | 203 | 104 | 99 |
| Carrot | 39 | 19 | 20 |
| Tomato | 54 | 32 | 22 |
| Lettuce | 27 | 11 | 15 |
| Wax melon | 93 | 60 | 33 |
| Curly cabbage | 140 | 62 | 78 |
| Onion | 106 | 57 | 49 |
| Chinese green cabbage | 122 | 54 | 68 |
| Chinese kale | 98 | 39 | 59 |
| Lime | 21 | 10 | 10 |
| Pumpkin | 67 | 31 | 36 |
| Thai Thav | 653 | 118 | 535 |
| Ginger | 37 | 18 | 20 |
| Water convolulus | 58 | 25 | 33 |
| Culantro | 22 | 10 | 12 |
| White potato | 15 | 8 | 7 |
| Pineapple | 25 | 16 | 9 |
| Potato/yam | 184 | 72 | 113 |

¹ Unfortunately, because the question asked for average kilograms lost to spoilage per month rather than average kilograms per ton lost per month, no comparisons can be made between traders or types of produce being sold.

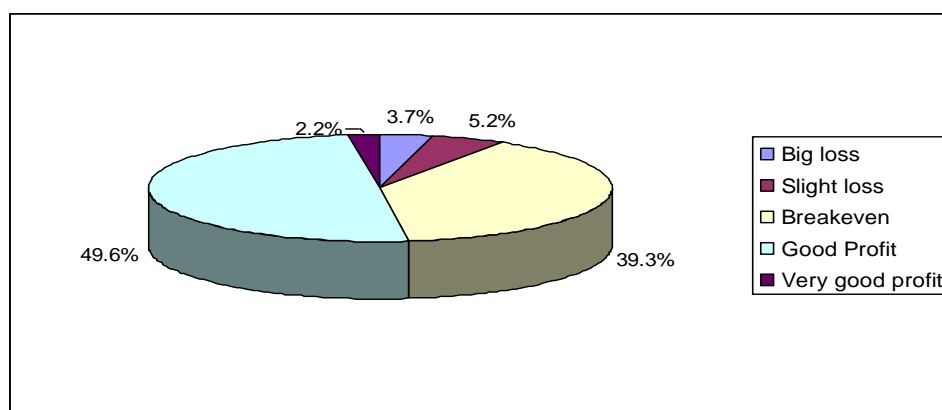
Table 18 – Average Spoilage Losses per Month of Most Important Fruits Sold by Traders

| Fruits | Maximum estimated loss (kg) | Minimum estimated loss (kg) | Difference (max - min) |
|---------------|-----------------------------|-----------------------------|------------------------|
| Rambutan | 98 | 54 | 44 |
| Mangosteen | 83 | 31 | 52 |
| Longan | 250 | 121 | 130 |
| Apple | 69 | 28 | 41 |
| Durian | 283 | 139 | 144 |
| Lychee | 194 | 103 | 91 |
| Watermelon | 1,153 | 465 | 688 |
| Orange | 42 | 9 | 33 |
| Custard fruit | 820 | 512 | 308 |
| Mango | 250 | 100 | 150 |
| Pineapple | 1,213 | 503 | 710 |
| Pear | 17 | 8 | 9 |
| Tangerines | 509 | 253 | 256 |
| Grape | 22 | 10 | 11 |
| Dragon fruit | 23 | 10 | 13 |
| Sapodilla | 95 | 64 | 31 |
| Marian plum | 270 | 175 | 95 |
| Banana | 1,030 | 515 | 515 |

3.6. Business Since Last Year

Traders were asked about changes in their business since last year (see Figure 7). Overall, most traders reported that their business has had a good profit since last year (49.6%) or broken even (39.3%). Less than 10% had a slight or big loss. Big losses are only reported in Dumkor, Korki and Takmao markets. Good profits are reported in all markets, with three traders in Chbar Ampov and Takhmao reporting very good profits (see Table 31 in Annex 4).

Figure 7 – Change in Business since Last Year



Changes in business are fairly similar between different traders. Wholesalers are slightly more likely than retailers and collectors to have had a good profit (see Table 19).

Table 19 – Changes in Business Since Last Year by Type of Trader

| | Retailer | | Wholesaler | | Collector | |
|------------------|----------|--------|------------|--------|-----------|--------|
| | Count | Col % | Count | Col % | Count | Col % |
| Big loss | 2 | 1.7% | 3 | 3.7% | 5 | 15.2% |
| Slight loss | 6 | 5.2% | 1 | 1.2% | | |
| Breakeven | 51 | 44.0% | 31 | 37.8% | 11 | 33.3% |
| Good Profit | 55 | 47.4% | 46 | 56.1% | 16 | 48.5% |
| Very good profit | 2 | 1.7% | 1 | 1.2% | 1 | 3.0% |
| Total | 116 | 100.0% | 82 | 100.0% | 33 | 100.0% |

3.7. Trading Constraints

During the FGDs, traders talked about the constraints they face (see Annex 3 for a summary of the FGD). Traders reported that they face constraints related to spoilage losses, market fees, border/customs fees, random roadside checks by police, supply shortages and market conditions. Market fees seem to be reasonable in terms of what they cover (e.g., parasol rental, stall rental, fees for the market security guard, etc.). Border/customs fees and fees resulting from random roadside checks are considered less fair (e.g., the border fee is the same regardless of how large the vehicle is).

In general, market conditions are considered poor (poor hygiene, cramped space, no room for expansion, etc.), and traders feel they are facing increased competition from informal markets (e.g., mobile units and small stalls operated out of people's homes). They also feel that the quality of local produce is lower than imported produce.

Traders were also concerned that they have limited financial capital to deal with price fluctuations, including price fluctuations resulting from changes in transportation prices (which change according to the season and mode of transport available).

3.8. Expenses

During the FGD, traders were asked about their expenses. Wholesalers reported that they are more likely to spend money on transportation costs; at least 50% of their expenses are on transportation. Their next largest expenses are the costs of financing, followed by communication costs. Traders reported that transportation costs are high due to formal and informal fees imposed by local police across provincial borders, high gasoline prices, and fees for parking at the market.

4. MARKET INFORMATION

4.1. Sources and Ranking of Market Information

Traders access market information through many sources (see Table 20). 93% of traders report that they access market information from other collectors and traders; 65% access market information through family and friends, and one-third to one-half access market information from television, producers and radio. Very few traders rely on extension agents, government bulletins, newspapers and other media sources for their market information. These findings were confirmed during the FGDs, during which respondents reported that they rarely use price information broadcasted on TV, radio or other print media (especially newspapers) to set prices.

Table 20 – Sources of Market Information by Market

| | Market Name | | | | | | | | | | | | Total | |
|----------------------------|--------------|--------------|-------------------|--------------|-------------|--------------|---------------|--------------|-----------------|--------------|--------------|--------------|-------|--------------|
| | Phsar Dumkor | | Phsar Chbar Ampov | | Phsar Korki | | Phsar Takhmao | | Phsar Boeng Kok | | Phsar Samaki | | Count | % of traders |
| | Count | % of traders | Count | % of traders | Count | % of traders | Count | % of traders | Count | % of traders | Count | % of traders | | |
| Other collectors / traders | 25 | 100.0% | 16 | 80.0% | 18 | 90.0% | 24 | 96.0% | 18 | 85.7% | 24 | 100.0% | 125 | 92.6% |
| Family & friends | 18 | 72.0% | 13 | 65.0% | 11 | 55.0% | 15 | 60.0% | 9 | 42.9% | 22 | 91.7% | 88 | 65.2% |
| Television | 11 | 44.0% | 14 | 70.0% | 7 | 35.0% | 15 | 60.0% | 5 | 23.8% | 15 | 62.5% | 67 | 49.6% |
| Producers | 17 | 68.0% | 8 | 40.0% | 14 | 70.0% | 3 | 12.0% | 5 | 23.8% | 8 | 33.3% | 55 | 40.7% |
| Radio | 7 | 28.0% | 5 | 25.0% | 4 | 20.0% | 13 | 52.0% | 2 | 9.5% | 14 | 58.3% | 45 | 33.3% |
| Extension agents | 2 | 8.0% | 4 | 20.0% | 1 | 5.0% | 2 | 8.0% | 2 | 9.5% | 0 | 0.0% | 11 | 8.1% |
| Other media | 0 | 0.0% | 6 | 30.0% | 0 | 0.0% | 0 | 0.0% | 1 | 4.8% | 0 | 0.0% | 7 | 5.2% |
| Government bulletins | 0 | 0.0% | 2 | 10.0% | 2 | 10.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 4 | 3.0% |
| Newspaper | 0 | 0.0% | 3 | 15.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 3 | 2.2% |

Between different types of traders, sources of market information are quite similar (see Table 21). Collectors are more likely than retailers and wholesalers to rely on producers for their source of market information, and less likely to rely on extension agents.

Table 21 – Sources of Market Information by Type of Trader

| | Retailer | | Wholesaler | | Collector | |
|--------------------------|----------|-------|------------|-------|-----------|-------|
| | Count | Col % | Count | Col % | Count | Col % |
| Other collectors/traders | 107 | 92.2% | 75 | 91.5% | 31 | 93.9% |
| Family & friends | 80 | 69.0% | 53 | 64.6% | 20 | 60.6% |
| Producers | 48 | 41.4% | 39 | 47.6% | 22 | 66.7% |
| Television | 55 | 47.4% | 40 | 48.8% | 18 | 54.5% |
| Radio | 36 | 31.0% | 30 | 36.6% | 14 | 42.4% |
| Extension agents | 11 | 9.5% | 6 | 7.3% | 1 | 3.0% |
| Newspaper | 3 | 2.6% | 2 | 2.4% | 1 | 3.0% |
| Government bulletins | 4 | 3.4% | 3 | 3.7% | 1 | 3.0% |
| Other media | 5 | 4.3% | 4 | 4.9% | 0 | 0.0% |

When asked to rank sources of market information in terms of importance, overall traders felt that other collectors and traders are the most important source of market information, followed by family and friends and producers (see Table 22). While television is listed as the third most common source of market information, it is ranked fourth in usefulness. Overall, extension agents, newspapers and Government bulletins are considered the least useful sources of market information.²

Table 22 – Average Rank of Sources of Market Information by Market (lower scores indicate a higher rank)

| | Market Name | | | | | | Total |
|------------------------------|--------------|-------------------|-------------|---------------|-----------------|--------------|-------|
| | Phsar Dumkor | Phsar Chbar Ampov | Phsar Korki | Phsar Takhmao | Phsar Boeng Kok | Phsar Samaki | |
| Other collectors/traders | 1.1 | 2.5 | 1.2 | 1.5 | 1.3 | 1.3 | 1.4 |
| Family & friends | 2.5 | 2.5 | 2.1 | 2.3 | 2.0 | 2.2 | 2.3 |
| Producers | 2.3 | 3.1 | 2.2 | 3.3 | 1.6 | 2.1 | 2.4 |
| Television | 3.1 | 2.6 | 3.4 | 2.6 | 3.4 | 3.6 | 3.1 |
| Radio | 3.3 | 4.8 | 4.5 | 2.5 | 2.0 | 3.5 | 3.4 |
| Extension agents | 4.5 | 4.0 | 4.0 | 2.5 | 2.5 | | 3.6 |
| Newspaper | | 4.7 | | | | | 4.7 |
| Government bulletins | | 5.0 | 6.0 | | | | 5.5 |
| Other media (please specify) | | 2.0 | | | 4.0 | | 2.3 |

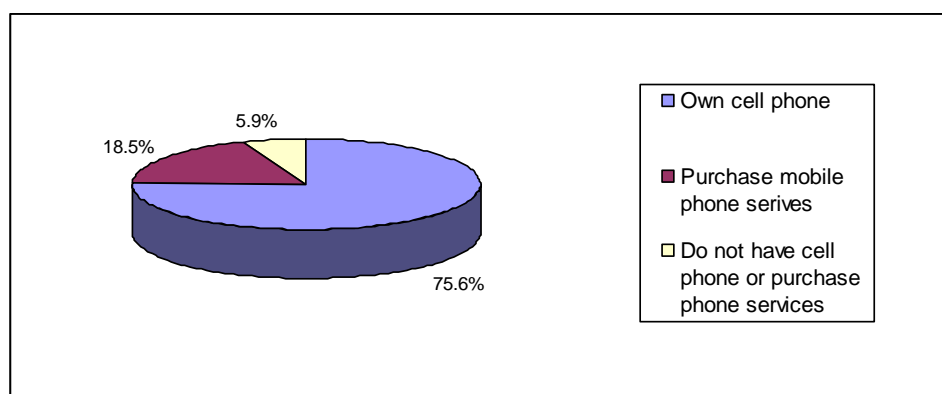
Note: Figures presented are the average ranking of those respondents who actually use the source of market information, not the average of all respondents.

4.2. Phone Usage

Many traders are using phones to gather market information and run their businesses. 94% of traders own a cell phone or purchase mobile phone services (see Figure 8), including 100% of collectors, 93% of retailers and 97.6% of wholesalers (see Tables 32 and 33 in Annex 4 for a breakdown by market and type of trader).

² The higher ranking for extension agents in Takhmao and Boeng Kok markets is based on responses from only four traders who access market information from extension agents. As the remaining traders do not access market information from extension agents, they did not rank them at all. The ranking is, therefore, biased by the responses of the two traders who access market information from extension agents. Similarly, the high overall rank for “other media” is somewhat misleading, as it only represents the responses of 7 traders.

Figure 8 – Cell Phone Usage



On average, traders use 58% of their phone time carrying out agriculture business and marketing and 38% on other business and marketing (see 23).

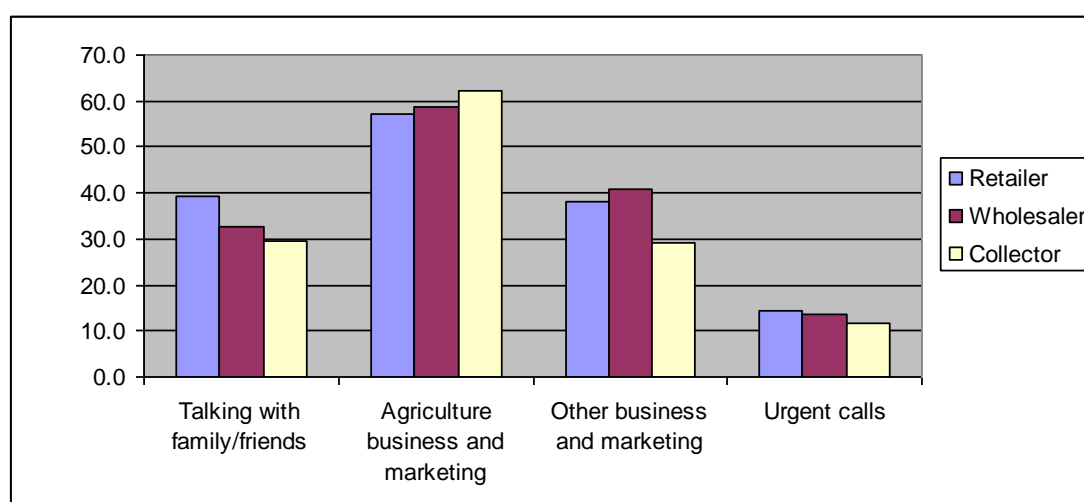
Table 23 – Average Percentage of Phone Time by Market

| | Market Name | | | | | | Total |
|------------------------------------|--------------|-------------------|-------------|---------------|-----------------|--------------|-------|
| | Phsar Dumkor | Phsar Chbar Ampov | Phsar Korki | Phsar Takhmao | Phsar Boeng Kok | Phsar Samaki | |
| Agriculture business and marketing | 10.0% | 55.5% | 57.9% | 66.9% | 54.1% | 59.0% | 58.0% |
| Other business and marketing | 63.5% | 23.3% | 23.8% | 28.5% | 16.7% | 8.6% | 38.3% |
| Talking with family/friends | 45.0% | 26.5% | 40.5% | 43.4% | 33.8% | 36.2% | 38.0% |
| Urgent calls | 12.5% | 15.7% | 16.7% | 5.0% | 20.4% | 9.6% | 14.4% |

Note: This table shows how traders spend their phone time. Figures shown are averages for all respondents and do not, therefore, add up to 100%. Individual responses totalled 100%.

Collectors are slightly more likely to use the phone for agriculture business and marketing, and wholesalers are more likely to use the phone for other business and marketing (see Figure 9).

Figure 9 – Average Percentage of Phone Time by Type of Trader



4.3. Types of Market Information

Respondents from FGDs in each market reported that they need similar types of market information: wholesale prices, retail prices, supply volumes and farm gate prices. Farm gate prices are considered particularly important for wholesalers, and wholesale prices are important for retailers when determining how to set prices that are competitive. Groups from Kampong Cham, Koki, Takhmao and Dumkor markets ranked “wholesale price” as the most important type of market information; the group from Kampot ranked “supply volume” as most important; and the group from Chbar Ampov ranked “farm gate price” as most important.

In general, market information was ranked in the following order: wholesale price, retail price, supply volumes, and farm gate price. Buyers’ or sellers’ lists (which were incorrectly described the by the FGD moderators as price lists, rather than contact lists for buyers and sellers) were considered not helpful because they do not allow traders to adjust their prices to respond to unexpected changes in product price.

All respondents felt that access to consistent and timely market information is important for setting prices (thereby making it easy to forecast daily sales and lower risk of losses). Respondents also felt that information on quality and standards is important for helping to identify the appropriate grade of products and increase consumer confidence. Supply volume information was considered important for helping traders to forecast the demand for and supply of products. Traders thought that buyers’ and sellers’ (price) lists could be helpful for reducing bargaining time by standardizing prices.

4.4. Using Market Information to Set Prices

As mentioned above, respondents in the FGDs reported that they rarely use price information broadcasted on TV, radio or other print media (especially newspapers) to set prices. Instead, they usually determine their prices based on wholesale price. A few respondents reported that they set their prices based on the prices from the previous day.

Prices are not standard and depend on various circumstances. For example, prices are determined by product grading or market supply (i.e., the abundance of products available compared to other traders). If the quality of products is higher, traders can demand higher prices. If there is an abundant supply of products, traders have to set more competitive (cheaper) prices.

4.5. Additional Market Information Needed

In the FGDs, traders discussed the types of additional market information that would be useful to them. In Phsar Chbar Ampov, traders wanted information on domestic marketing to develop distribution channels in the country, forecast demand and supply and set local prices (something that networking information, like buyers' and sellers' lists, could help instigate). In Phsar Koki, traders wanted information on freight and transportation rates to help set produce prices and inform their customers accordingly. Phsar Boeng Kok traders wanted more information on export marketing, and the Kampot market traders wanted more information on local prices to create a more competitive environment. At Phsar Dumkor, traders asked for information on processing technologies to improve the quality of products that farmers can produce. In Phsar Takhmao, traders asked for information on storage technology.

In general, traders also felt it would be helpful to have further information on input availability and credit and finance options (i.e., awareness of available finance sources and exchange rates).

5. CONCLUSIONS

5.1. Summary Description of Traders Interviewed

135 retailers, wholesalers and collected from 6 designated markets in Phnom Penh, Kandal, Kampong Cham and Kampot were interviewed for the study. The respondents range in age from 15 to 65; 86% are female; and the majority have only completed some primary or secondary school.

Using information on housing and personal property as a proxy for income, it can be concluded that very few of the traders interviewed come from very poor households. Only 2% live in households with thatch roofs, and 8% live in households with fibro roofs (the next cheapest source of roofing material). Additionally, only 6% reported that they owned no source of transportation, and only 4% did not have a TV, radio or phone.

The size of operations for the majority of traders is less than 5 square meters, though there is a wide range between those interviewed (from some reporting no trading space, to one trader reporting over 75 square meters). Most interviewers report that their business has broken-even or returned a positive profit since the previous year.

5.2. Key Issues

The results of the survey and Focus Group Discussions point to several key issues that traders face and that CAMIP may be able to assist with.

Although almost all traders reported that they rely on collectors and other traders for market information, the survey results show that there is a general lack of networking and information-sharing between traders. Only 35% of traders reported that they share information about demand to suppliers. Also, almost all traders only operate in one market, suggesting that, in part, they do not have the networks and contacts in other markets to expand their operations (high costs of transportation could be another determining factor limiting traders' opportunities to expand to other markets and is discussed below). This lack of networking is also confirmed by traders' request for more information on domestic and export marketing, which would most easily be gained through informal and formal networks.

Traders are concerned about the quality of produce and requested information to help improve the quality of produce coming from local farmers. With high quality products, traders can demand higher prices, they lose less produce to spoilage, and they gain customer confidence. Nevertheless, none of the traders reported that they check for certifications of quality on the produce they buy, and only 64% of grade their produce.

One of the main constraints to trading is the high cost of transport, which includes many formal and informal transportation fees and is affected by high gasoline prices and charges for parking in the market. As mentioned above, high transport fees are also a likely barrier for expanding business and entering new markets.

Traders also felt that poor market conditions affect their businesses, and they are concerned about increased competition from small mobile vendors and informal traders operating small businesses outside of the market.

ANNEX 1 – QUESTIONNAIRE

A. Situational Data

| | | |
|------------|---|--|
| | Unique Interview # | |
| A-1 | Date of interview | |
| A-2 | Interviewer's name | |
| | Interviewer, please introduce yourself to the respondent and objective of the interview | |
| A-3 | Respondent's name | |
| A-4 | Telephone Number | |
| A-5 | Address: | |
| | Village | |
| | Commune | |
| | District | |
| | Province | |

B. Demographics

| | | |
|------------|--------------------------|--|
| B-1 | Sex | |
| | Female | |
| | Male | |
| B-2 | Age | |
| | 15-20 | |
| | 21-25 | |
| | 26-30 | |
| | 31-35 | |
| | 36-40 | |
| | 41-45 | |
| | 46-50 | |
| | 51-55 | |
| | 56-60 | |
| | 61-65 | |
| | 65 plus | |
| B-3 | Education Level Achieved | |

| | |
|----------------------|--|
| No formal schooling | |
| Primary level | |
| Some secondary level | |
| Complete secondary | |
| College level | |
| University level | |

B-4 Type of house roofing

| | |
|----------|--|
| Thatch | |
| Tile | |
| Fibro | |
| Zinc | |
| Concrete | |
| Other | |

B-5 What type of transport do you own?

| | |
|-------------------------|--|
| Bicycle | |
| Motorcycle | |
| Tractor/Koyon/Car | |
| Remorque | |
| Remorque and motorcycle | |
| Oxcart or Horsecart | |
| Boat | |
| Pickup | |
| Other (Specify) | |

C. Media Access

C-1 Which of the following do you own?

| | |
|---------------------|--|
| Radio | |
| Television | |
| Cell (hand) phone | |
| Land line telephone | |

C-2 If Respondent does not have a land line telephone or cell phone, would they purchase mobile phone services from someone in the village?

| | |
|-----|--|
| Yes | |
|-----|--|

No

C-3 If the Respondent owns or purchases mobile phone services, ask what % of the time do they use their mobile phone for the following:

| | |
|------------------------------------|--|
| Talking with family/friends | |
| Agriculture business and marketing | |
| Other business and marketing | |
| Urgent calls | |
| Other (specify) | |

D. Economic Data

D-1 What type of trader are you?

(There can be more than one answer per trader.)

| | YES | NO |
|------------|---|---|
| Retailer | <input style="width: 100%; height: 20px;" type="text"/> | <input style="width: 100%; height: 20px;" type="text"/> |
| Wholesaler | <input style="width: 100%; height: 20px;" type="text"/> | <input style="width: 100%; height: 20px;" type="text"/> |
| Collector | <input style="width: 100%; height: 20px;" type="text"/> | <input style="width: 100%; height: 20px;" type="text"/> |

D-2 What percentage of your product do you sell to the following:?

(Should add up to 100%)

| | % |
|-----------------|---|
| Consumers | <input style="width: 100%; height: 20px;" type="text"/> |
| Wholesalers | <input style="width: 100%; height: 20px;" type="text"/> |
| Retailers | <input style="width: 100%; height: 20px;" type="text"/> |
| Other (specify) | <input style="width: 100%; height: 20px;" type="text"/> |

D-3 Size of Trading Operation (in total m2 of floor space occupied for ALL trading in fruits and vegetables)

m2

D-4 During which months do you trade (a) vegetables and (b) fruits?

Vegetables

Fruits

| | YES | NO |
|----------|--|--|
| January | <input style="width: 40%; height: 20px;" type="text"/> | <input style="width: 40%; height: 20px;" type="text"/> |
| February | <input style="width: 40%; height: 20px;" type="text"/> | <input style="width: 40%; height: 20px;" type="text"/> |
| March | <input style="width: 40%; height: 20px;" type="text"/> | <input style="width: 40%; height: 20px;" type="text"/> |
| April | <input style="width: 40%; height: 20px;" type="text"/> | <input style="width: 40%; height: 20px;" type="text"/> |
| May | <input style="width: 40%; height: 20px;" type="text"/> | <input style="width: 40%; height: 20px;" type="text"/> |

| | YES | NO |
|----------|--|--|
| January | <input style="width: 40%; height: 20px;" type="text"/> | <input style="width: 40%; height: 20px;" type="text"/> |
| February | <input style="width: 40%; height: 20px;" type="text"/> | <input style="width: 40%; height: 20px;" type="text"/> |
| March | <input style="width: 40%; height: 20px;" type="text"/> | <input style="width: 40%; height: 20px;" type="text"/> |
| April | <input style="width: 40%; height: 20px;" type="text"/> | <input style="width: 40%; height: 20px;" type="text"/> |
| May | <input style="width: 40%; height: 20px;" type="text"/> | <input style="width: 40%; height: 20px;" type="text"/> |

| | | |
|-----------|--|--|
| June | | |
| July | | |
| August | | |
| September | | |
| October | | |
| November | | |
| December | | |

| | | |
|-----------|--|--|
| June | | |
| July | | |
| August | | |
| September | | |
| October | | |
| November | | |
| December | | |

D-5 What are the three most important VEGETABLE / FRUIT / VEGETABLE and FRUIT crops you trade by order of importance

| First | Second | Third |
|-------|--------|-------|
| | | |

D-6 What are the spoilage losses for these three crops on average per month?

| | First | Second | Third |
|---------------------------|-------|--------|-------|
| kg maximum estimated loss | | | |
| kg minimum estimated loss | | | |

D-7 What is the name and location of the markets you trade in, in their order of importance?

| | Market Name | Location |
|----|-------------|----------|
| #1 | | |
| #2 | | |
| #3 | | |
| #4 | | |
| #5 | | |

D-8 What proportion of your trading is:

| | % |
|-------------------------------------|---|
| Purchased at the farm after harvest | |
| Purchased from traders | |
| Purchased on contract from farmers | |

D-9 What are the changes in your trading business from last year?

| | |
|------------------|--|
| Big loss | |
| Slight loss | |
| Breakeven | |
| Good Profit | |
| Very good profit | |

D-10 Undertake an activity analysis by type of activity.

(Which of the following activities do you do?)

| | YES | NO |
|---|-----|----|
| Sorting | | |
| Grading | | |
| Ripening | | |
| Storage | | |
| Packaging | | |
| Fumigation | | |
| Cleaning | | |
| Labeling | | |
| Certification of quality [held by producer] | | |
| Transmission of information about demand to suppliers | | |

D-11 What are your sources for market information in fruits and vegetables?

| | YES | NO | RANK |
|-----------------------------------|-----|----|------|
| radio | | | |
| television | | | |
| newspaper | | | |
| government bulletins | | | |
| other media (please specify) | | | |
| extension agents | | | |
| producers | | | |
| other collectors/traders | | | |
| family & friends | | | |
| other (please specify the source) | | | |

D-12 Please rank the most important SOURCES (above) for you about market information in fruits & vegetables.

ANNEX 2 – FOCUS GROUP DISCUSSION GUIDELINE

INFORMAL QUESTIONNAIRE FOR FOCUS GROUP WORK

- 1 Do traders work together or collaborate in this market? How do traders do this? What are the business relations that you have with other traders?
- 2 What are some of the problems which impede trading?
 - a. Random road side checks or taxes imposed by police
 - b. Spoilage and losses
 - c. Market Fees
 - d. Ferry or Road Tolls
 - e. Border customs or customs fees
 - f. Market Conditions
 - e. Other
- 3 What proportion of your expenses go to: (focus group to ask "what do you include in transport costs?")
 - a. transportation costs
 - b. the 'cost' of financing
 - c. communications
 - d. other?
- 4 What factors do you use to determine or set your starting price for the day? (For example: Previous day's price; Prices indicated in the Newspaper; AMO price information; Market committee; Radio broadcast; the price from the wholesaler)
- 5 Selecting certain products: How closely is price related to grading? How consistent is price with the grade between traders? What is the % price differential for grades on average?

Vegetables

- 6 What kinds of market information do you need (yes or no)?

| | No | Yes | Rank |
|-------------------|----|-----|------|
| None | | | |
| Farm gate price | | | |
| Wholesale prices | | | |
| Retail prices | | | |
| Quality standards | | | |
| Supply volumes | | | |

| | | | |
|-----------------|--|--|--|
| Buyers' lists | | | |
| Sellers' lists | | | |
| Other (specify) | | | |

- 7 Of these kinds of market information which you need – please rank them in order of importance with “1” the most important.
- 8 How satisfied are you with your accessibility to **consistent** market information on vegetable crops for the following?
(Change the order of questioning randomly for each respondent.)

| | Price Information | Quality & standards Information | Supply Volumes | Buyers and Sellers Lists |
|------------------------------------|-------------------|---------------------------------|----------------|--------------------------|
| Completely dissatisfied | | | | |
| Somewhat dissatisfied | | | | |
| Neither satisfied nor dissatisfied | | | | |
| Somewhat satisfied | | | | |
| Completely satisfied | | | | |

- 9 How satisfied are you with your accessibility to **timely** (frequency of) market information on vegetable crops for the following?
(Change the order of questioning randomly for each respondent.)

| | Price Information | Quality & standards Information | Supply Volumes | Buyers and Sellers Lists |
|------------------------------------|-------------------|---------------------------------|----------------|--------------------------|
| Completely dissatisfied | | | | |
| Somewhat dissatisfied | | | | |
| Neither satisfied nor dissatisfied | | | | |
| Somewhat satisfied | | | | |
| Completely satisfied | | | | |

Fruits

- 10 What kinds of market information do you need?

| | No | Yes | Rank |
|------------------|----|-----|------|
| None | | | |
| Farm gate price | | | |
| Wholesale prices | | | |
| Retail prices | | | |

| | | | |
|-------------------|--|--|--|
| Quality standards | | | |
| Supply volumes | | | |
| Buyers' lists | | | |
| Sellers' lists | | | |
| Other (specify) | | | |

11 Of these kinds of market information which you need – please rank them in order of importance with “1” the most important.

12 How useful would the following market information be for a trader (focus group)? (Extremely/Very/Average/somewhat useful/not useful)

| | Extremely Useful | Useful | Not Useful | Rank |
|--|------------------|--------|------------|------|
| · domestic marketing | | | | |
| · export marketing | | | | |
| · input availability | | | | |
| · tender notifications | | | | |
| · freight and transport rates | | | | |
| · local prices | | | | |
| · national prices | | | | |
| · foreign prices | | | | |
| · processing technology | | | | |
| · storage technology | | | | |
| · consumer purchasing patterns | | | | |
| · regulations and regulation changes | | | | |
| · credit and finance information | | | | |
| · quality improvement information | | | | |
| · business and accounting skills | | | | |
| · examples of other trader's experiences | | | | |

ANNEX 3 – SUMMARY REPORT OF FOCUS GROUP DISCUSSIONS

Introduction

Six Focus Group Discussions (FGDs) were held with vegetable and fruit traders on May 27th – 28th, 2007. The groups were composed of 6-8 traders (see detailed list below). The groups were conducted between 1.5 to 2 hours. The respondents were selected from 6 markets: 2 in Phnom Penh, 1 in Kampong Cham, 2 in Kandal and 1 in Kampot. All groups were guided through a series of questions developed by CAMIP. Below is a summary, by topic, of the groups' discussions.

| Groups | Participants | Name of Market | Location | Date |
|---------|--|----------------|----------|----------|
| Group 1 | Wholesalers: 1 vegetable, 2 fruit Retailers: 4 vegetables and 1 fruit | Dumkor | PP | 28/05/07 |
| Group 2 | Wholesalers: 1 vegetable, 3 fruit Retailers: 2 vegetable and 1 fruit | Chbar Ampov | PP | 28/05/07 |
| Group 3 | Wholesalers: 4 vegetable Retailers: 4 vegetable | Takhmao | Kandal | 28/05/07 |
| Group 4 | Wholesalers: 2 vegetable Retailers: 5 vegetable | Koki | Kandal | 28/05/07 |
| Group 5 | Wholesalers: 2 vegetable, 1 fruit Retailers: 2 vegetable and 3 fruit | Boeng Kok | Kg.Cham | 27/05/07 |
| Group 6 | Wholesalers: 4 vegetable, 1 fruit Retailers: 2 vegetable and 1 fruit | Samaki | Kampot | 27/05/07 |

Traders' collaboration

Many respondents in Kampong Cham and Koki said that they do not work together or collaborate together in the market. They are only concerned with their own businesses. Two groups from Takhmao & Chbar Ampov markets reported that they help each. They (i) exchange goods with each other whenever they do not have enough goods for their customers; (ii) lend money to each other; (iii) sell goods for each when they are busy with other work; and (iv) exchange market information on supplies between wholesalers and farmers. Interestingly, the traders in Kampot always agree on a common price when buying goods from wholesalers. As a result, wholesalers are unable to set their own prices in that market.

Trading Constraints

The respondents reported that they face similar trading constraints:

Spoilage and losses: Spoilage occurs most often in the rainy season; traders believe that the chemicals used on vegetable and fruits imports from Vietnam makes them more likely to spoil; traders do not know how to properly store their goods for long periods of time.

Market fees: "Phasy" (Khmer word for type of "tax" at the market); costs of parasol rental; costs of hygiene; cost of electricity; costs of stall rental; labor fees; fees for market security guard.

Border customs or customs fees: fees for crossing the border are the same regardless of the size of the vehicle. Respondents from Kampong Cham gave an example: customs fees to cross the border with Vietnam are 200,000 Riel per vehicle.

Random road side checks or imposed by police: Fees for economic or traffic police in Kampot province.

Market conditions: While traders sell many types of fruits or vegetables, mobile vendors tend to only sell one type of product and are therefore considered competitors. The market environment is not good (poor hygiene, cramped space, not space for expansion, etc.). Increase of informal, small markets in the community and home mobile vendors are decreasing sales volumes for market traders. One group from Koki felt that their sales were affected by the fact that market stalls are not grouped according to product and consumers have a difficult time finding the products they need (because they are spread all over the market).

Suppliers: sometimes there is a shortage of product supply.

Other:

- Limited market hours (closing too early).
- Limited financial capital to deal with price fluctuations (if prices increase suddenly, traders do not always have enough financial capital to purchase goods).
- The quality of local produce is lower than imported produce, especially produce from Vietnam (which is more likely to be grown with the use of pesticides and fertilizers).
- Transportation prices fluctuate with the seasons. In seasons when transport is easy, the price for produce is much lower. When transportation takes longer, it costs more and the price of produce increases. For example, products imported during the rainy season from Vietnam through Chrey Thom border (via boat) are much cheaper because the transportation time is shorter and more direct.

Proportion of expenses

Expenses vary according to the type of trader. Wholesalers are likely to spend more money on transportation costs than retailers are. Wholesalers reported that they spend at least 50% on transportation. Their next largest expenses are the costs of financing, followed by communication costs. Transportation costs are high due to formal and informal fees imposed by local police across provincial borders, high gasoline prices, and fees for parking at the market.

Price setting

Respondents reported that they rarely use price information broadcasted on TV, radio or other print media (especially newspapers) to determine the price for the day. Instead, they determine their prices based on the wholesale price. A few respondents said that they set their prices based on the prices from the previous day. Prices are not standard and depend on various circumstances. For example, prices are determined by product grading or market supply (i.e., the abundance of products available compared to other traders). If the quality of products is higher,

traders can demand higher prices. If there is an abundant supply of products, traders have to set more competitive (cheaper) prices.

Selecting certain products

Retailers reported that price is very closely related to grading. In general, products are graded into two categories: #1 and #2. Grading is more important to retailers than it is to wholesalers. Retailers grade products when they receive them. The percentage price differential for grades on average is 10% or 20% among retailers and 5% or 10% among wholesalers. High grade fruits have a higher price margin than high grade vegetables.

Kinds of market information needed

Respondents in all groups reported that they need similar types of market information: wholesale prices, retail prices, supply volumes and farm gate prices. Farm gate prices are particularly important for wholesalers, and wholesale prices are important for retailers. These prices help them determine a competitive price. Groups from Kampong Cham, Koki, Takhmao and Dumkor markets ranked “wholesale price” as most important, while the group from Kampot ranked “supply volume” as most important, and the group from Chbar Ampov ranked “farm gate price” as most important.

In general, market information was ranked in the following order: wholesale price, retail price, supply volumes, and farm gate price. Buyers’ lists or sellers’ lists were considered not helpful because they do not allow traders to adjust their prices to respond to unexpected changes in product price.³

Satisfaction on accessibility to consistent and timely market information

All respondents felt that access to consistent and timely market information is important. If it is consistent and timely, information can help in the following ways:

Price information: easy to determine price depending on situation; lowers risk of losses; strengthens financial status for businesses; makes it easy to forecast daily sales volumes.

Quality and standards information: easy to identify the grade of products; increases consumer/client trust in the quality of the products.

Supply volume: makes it easy to forecast the demand and supply of products, according to circumstances.

Buyers’ and sellers’ lists: standard prices reduce bargaining time.

³ Buyers and sellers lists were misunderstood by the FGD moderators to mean lists of prices used by buyers and sellers, rather than lists of buyers and sellers (with contact information) that could be used by traders to network.

Useful market information for traders

Different groups felt that different types of market information would be useful for them.

- Domestic marketing (Chbar Ampov): Easy to develop distribution channels in the country; helps with demand and supply forecasts; makes setting local prices easier.
- Freight and transportation rates (Koki): transportation cost is one of main expenses in a business. If there is clear information on freight and transportation, it will help traders know the costs of products and inform their customers accordingly.
- Export marketing (Boeng Kok): Traders felt they could increase their income if they have clear information on export marketing.
- Local prices (Kampot): Local prices would help traders to set prices for local consumers and help create a more competitive environment.
- Processing technology (Dumkor): Wholesalers, retailers and consumers rely on the farmers. If farmers could produce higher quality products, traders and consumers would be willing to pay higher prices for the products.
- Storage technology (Takhmao): This is urgent need as they frequently face storage problems. No organization has provided them with help on this issue.

The traders also felt that the following types of market information would be useful:

- Input availability: increases knowledge of opportunities to increase income and improve current business practices.
- Credit and finance information: awareness of available finance sources and exchange rates.

ANNEX 4 – ADDITIONAL DATA TABLES

Table 24 – Type of Trader by Market

| | Market Name | | | | | | | | | | | | Total | |
|------------|--------------|-------|-------------------|-------|-------------|--------|---------------|-------|-----------------|-------|--------------|-------|-------|-------|
| | Phsar Dumkor | | Phsar Chbar Ampov | | Phsar Korki | | Phsar Takhmao | | Phsar Boeng Kok | | Phsar Samaki | | Count | Col % |
| | Count | Col % | Count | Col % | Count | Col % | Count | Col % | Count | Col % | Count | Col % | | |
| Retailer | 21 | 84.0% | 15 | 75.0% | 20 | 100.0% | 18 | 72.0% | 20 | 95.2% | 22 | 91.7% | 116 | 85.9% |
| Wholesaler | 15 | 60.0% | 10 | 50.0% | 13 | 65.0% | 12 | 48.0% | 15 | 71.4% | 17 | 70.8% | 82 | 60.7% |
| Collector | 4 | 16.0% | 6 | 30.0% | 6 | 30.0% | 6 | 24.0% | 3 | 14.3% | 8 | 33.3% | 33 | 24.4% |

Table 25 – Age by Type of Trader

| | Retailer | | Wholesaler | | Collector | |
|----------------|----------|--------|------------|--------|-----------|--------|
| | Yes | | Yes | | Yes | |
| | Count | Col % | Count | Col % | Count | Col % |
| 15 to 25 years | 24 | 20.7% | 15 | 18.3% | 6 | 18.2% |
| 26 to 40 years | 26 | 22.4% | 21 | 25.6% | 4 | 12.1% |
| 41 to 55 years | 58 | 50.0% | 39 | 47.6% | 21 | 63.6% |
| Over 56 years | 8 | 6.9% | 7 | 8.5% | 2 | 6.1% |
| Total | 116 | 100.0% | 82 | 100.0% | 33 | 100.0% |

Table 26 – Produce Sold by Market (Average Percentage)

| Percentage of produce sold to: | Market Name | | | | | | |
|--------------------------------|--------------|-------------------|-------------|---------------|-----------------|--------------|-------|
| | Phsar Dumkor | Phsar Chbar Ampov | Phsar Korki | Phsar Takhmao | Phsar Boeng Kok | Phsar Samaki | Total |
| Consumers | 59.8 | 61.3 | 58.1 | 52.8 | 56.8 | 58.2 | 57.7 |
| Wholesalers | 58.0 | 77.1 | 55.0 | 67.8 | 58.6 | 50.0 | 60.9 |
| Retailers | 67.5 | 43.6 | 38.8 | 67.1 | 38.2 | 38.8 | 48.6 |

Table 27 – Proportion of Purchases by Market

| | Market Name | | | | | | |
|-------------------------------------|--------------|-------------------|-------------|---------------|-----------------|--------------|-------|
| | Phsar Dumkor | Phsar Chbar Ampov | Phsar Korki | Phsar Takhmao | Phsar Boeng Kok | Phsar Samaki | Total |
| Purchased at the farm after harvest | 62.2 | 84.3 | 41.3 | 86.0 | 48.9 | 75.6 | 63.0 |
| Purchased from traders | 84.5 | 77.1 | 65.3 | 91.1 | 79.0 | 84.8 | 80.5 |
| Purchased on contract from farmers | 20.0 | 66.0 | 20.0 | 0.0 | 40.0 | 15.0 | 35.6 |

Table 28 – Months Selling Fruit (N = 47)

| | Phsar Dumkor | Phsar Chbar Ampov | Phsar Boeng Kok | Phsar Samaki | Total |
|-------------|-----------------|-------------------------|-----------------------|-----------------|-----------------|
| | % of traders | % of traders | % of traders | % of traders | % of traders |
| January | 8.3% | | | 14.3% | 6.4% |
| February | 8.3% | | | 14.3% | 6.4% |
| March | 8.3% | | | 14.3% | 6.4% |
| April | 8.3% | | | 14.3% | 6.4% |
| May | 8.3% | | 9.1% | 7.1% | 6.4% |
| June | 8.3% | | 9.1% | 14.3% | 8.5% |
| July | | | | 14.3% | 4.3% |
| August | | | | 14.3% | 4.3% |
| September | | | | 7.1% | 2.1% |
| October | 8.3% | | | 7.1% | 4.3% |
| November | 8.3% | | | 14.3% | 6.4% |
| December | 8.3% | | | 14.3% | 6.4% |
| Every month | 91.7% | 100.0% | 90.9% | 85.7% | 91.5% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table 29 – Average Spoilage Losses per Month for Vegetables

| Vegetables | Maximum estimated loss (kg) | Minimum estimated loss (kg) | Difference (max - min) |
|-----------------------|-----------------------------|-----------------------------|------------------------|
| Sour cabbage | 6,000 | 500 | 5,500 |
| Thai Thav | 653 | 118 | 535 |
| Cabbage | 683 | 311 | 372 |
| Melon | 1,000 | 700 | 300 |
| Yam bean | 500 | 300 | 200 |
| Taro | 275 | 108 | 168 |
| Black cabbage | 298 | 150 | 148 |
| Potato/yam | 184 | 72 | 113 |
| Cucumber | 203 | 104 | 99 |
| Chinese cabbage | 100 | 20 | 80 |
| Curly cabbage | 140 | 62 | 78 |
| String bean | 140 | 65 | 75 |
| Chinese green cabbage | 122 | 54 | 68 |
| Chinese kale | 98 | 39 | 59 |
| Onion | 106 | 57 | 49 |
| Bitter melon | 140 | 92 | 48 |
| Chive | 75 | 35 | 40 |
| Pumpkin | 67 | 31 | 36 |
| Wax melon | 93 | 60 | 33 |
| Water convolulus | 58 | 25 | 33 |
| Cauliflower | 46 | 14 | 32 |
| Bell pepper | 42 | 12 | 30 |
| Green mango | 30 | 5 | 25 |
| Tomato | 54 | 32 | 22 |
| Carrot | 39 | 19 | 20 |
| Papaya | 50 | 30 | 20 |
| Ginger | 37 | 18 | 20 |
| Leek | 55 | 35 | 20 |
| Chili | 23 | 6 | 17 |
| Lettuce | 27 | 11 | 15 |
| cinnamon | 30 | 15 | 15 |
| A spiny plant | 30 | 15 | 15 |
| Culantro | 22 | 10 | 12 |
| Lime | 21 | 10 | 10 |
| Bean Sprout | 20 | 10 | 10 |
| Pineapple | 25 | 16 | 9 |
| Water snake | 10 | 2 | 8 |
| Egg plant | 16 | 9 | 7 |
| White potato | 15 | 8 | 7 |
| Garlic | 10 | 3 | 7 |
| Green Jackfruit | 10 | 5 | 5 |
| Citronella | 8 | 4 | 4 |

Table 30 – Average Spoilage Losses per Month for Fruit

| Fruits | Maximum estimated loss (kg) | Minimum estimated loss (kg) | Difference (max - min) |
|---------------|-----------------------------|-----------------------------|------------------------|
| Pineapple | 1,212.50 | 502.50 | 710.00 |
| Lemon water | 1,153.33 | 465.00 | 688.33 |
| Grapefruit | 900.00 | 300.00 | 600.00 |
| Banana | 1,030.00 | 515.00 | 515.00 |
| Custard fruit | 820.00 | 512.00 | 308.00 |
| Tangerines | 509.00 | 252.67 | 256.33 |
| Mango | 250.00 | 100.00 | 150.00 |
| Durian | 283.33 | 139.44 | 143.89 |
| Longan | 250.38 | 120.54 | 129.85 |
| Marian plum | 270.00 | 175.00 | 95.00 |
| Lychee | 193.89 | 102.67 | 91.22 |
| Sandorica | 90.00 | 30.00 | 60.00 |
| Mangosteen | 82.67 | 31.00 | 51.67 |
| Rambutan | 97.78 | 53.61 | 44.17 |
| Apple | 69.18 | 28.36 | 40.82 |
| Orange | 42.40 | 9.20 | 33.20 |
| Sapodilla | 95.00 | 64.00 | 31.00 |
| Phanhiev | 50.00 | 20.00 | 30.00 |
| Lemon | 50.00 | 30.00 | 20.00 |
| Dragon fruit | 22.50 | 10.00 | 12.50 |
| Grape | 21.50 | 10.25 | 11.25 |
| Pear | 16.67 | 8.00 | 8.67 |
| Papaya | 0.00 | 0.00 | 0.00 |

Table 31 – Changes in Business Since Last Year by Market

| | Market Name | | | | | | | | | | | | Total | |
|------------------|--------------|--------|-------------------|--------|-------------|--------|---------------|--------|-----------------|--------|--------------|--------|-------|--------|
| | Phsar Dumkor | | Phsar Chbar Ampov | | Phsar Korki | | Phsar Takhmao | | Phsar Boeng Kok | | Phsar Samaki | | Count | Col % |
| | Count | Col % | Count | Col % | Count | Col % | Count | Col % | Count | Col % | Count | Col % | | |
| Big loss | 2 | 8.0% | | | 1 | 5.0% | 2 | 8.0% | | | | | 5 | 3.7% |
| Slight loss | 1 | 4.0% | 1 | 5.0% | 1 | 5.0% | 3 | 12.0% | | | 1 | 4.2% | 7 | 5.2% |
| Breakeven | 9 | 36.0% | | | 10 | 50.0% | 13 | 52.0% | 10 | 47.6% | 11 | 45.8% | 53 | 39.3% |
| Good Profit | 13 | 52.0% | 17 | 85.0% | 8 | 40.0% | 6 | 24.0% | 11 | 52.4% | 12 | 50.0% | 67 | 49.6% |
| Very good profit | | | 2 | 10.0% | | | 1 | 4.0% | | | | | 3 | 2.2% |
| Total | 25 | 100.0% | 20 | 100.0% | 20 | 100.0% | 25 | 100.0% | 21 | 100.0% | 24 | 100.0% | 135 | 100.0% |

Table 32 – Cell Phone Usage by Market

| | Phsar Dumkor | Phsar Chbar Ampov | Phsar Korki | Phsar Takhmao | Phsar Boeng Kok | Phsar Samaki | Total |
|---|-----------------|-------------------------|----------------|------------------|-----------------------|-----------------|--------|
| Use own cell phone | 88.0% | 95.0% | 65.0% | 48.0% | 81.0% | 79.2% | 75.6% |
| Purchase mobile phone services | 12.0% | 5.0% | 30.0% | 48.0% | 0.0% | 12.5% | 18.5% |
| Do not have cell phone or purchase phone services | 0.0% | 0.0% | 5.0% | 4.0% | 19.0% | 8.3% | 5.9% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table 33 – Cell Phone Usage by Type of Trader

| | Retailer | | Wholesaler | | Collector | |
|---|----------|--------|------------|--------|-----------|--------|
| Use own cell phone | 85 | 73.3% | 67 | 81.7% | 28 | 84.8% |
| Purchase mobile phone services | 23 | 19.8% | 13 | 15.9% | 5 | 15.2% |
| Do not have cell phone or purchase phone services | 8 | 6.9% | 2 | 2.4% | 0 | 0.0% |
| Total | 116 | 100.0% | 82 | 100.0% | 33 | 100.0% |