Consumer perceptions of organic food in the Lao PDR

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1. Introduction

Laos is a small land-locked country of Southeast Asia with a strong agricultural basis: agriculture represents 27 % of the gross domestic product (GDP) yet employs 61% of the labor force (World Bank, 2014). In Laos, subsistence agriculture has traditionally played a significant role in rural livelihoods, and today still, many rural areas are considered as organic by default as farmers do not have the means to buy/use chemical inputs. However, the country is quickly changing under the growing pressure from commodity-hungry neighboring markets and increasing government support to more intensive forms of agriculture. As a result, rural households are progressively engaging in livelihood strategies that include a diversity of subsistence and income-earning activities (*e.g.* commercial agriculture, off-farm and non-farm activities). As smallholder farmers shift towards commercial agriculture, farming methods intensify: farmers access and increasingly use agricultural inputs that were formerly beyond their knowledge and reach (*e.g.* fertilizers, pesticides, improved varieties, etc.), and that they do not always know how to use. As a result, new risks appear in relation to this more intensive (and not always appropriate) application of chemicals, which include: (a) a greater exposure of farmers to environmental degradation (e.g., contamination of water and soil) and health problems[1]; (b) a greater exposure of consumers to unsafe products (*e.g.,* pesticide residues in food). Finally, in a regional trade perspective there is a risk that the increasing influx of chemical fertilizers and pesticides in Laos could quickly undermine the comparative advantage Laos has in organic agriculture (Wiemann et al., 2009).

Organic agriculture is quite new in Laos. As in several other developing countries, the concept of organic farming was developed by large international NGOs and by private companies willing to access to premium markets. The Lao government has also been involved in these initiatives since the beginning. It is not until the late 2000s that organic farming with market linkage was promoted, when the agriculture authorities, NGOs, international development institutions and donor agencies realized the potential opportunities of organic agriculture in terms of poverty eradication. The first project to explicitly focus on organic agriculture was the Promotion of Organic Farming and Marketing in Lao PDR (PROFIL) project developed in 2004 by the Swiss NGO Helvetas and the Department of Agriculture Ministry of Agriculture and Forestry (MAF), and funded by the Swedish Association for International Cooperation. Under the auspices of this project, the first national organic standards were created (No. 1666/MAF.DOA, December 30, 2005), the first organic farmers' market2 was set up (2006), the Lao Certification Body was created (2008) and the Clean Agriculture Development Center (CADC) was approved by the MAF as an implementation agency (2008). Under the auspices of the CADC, the government has developed three different environmentally friendly, healthy or hygienic labels: the organic label, the clean agriculture label and the Good Agricultural practices (GAP) label. In 2011, in its new national Agricultural Development Strategy, the Ministry of Agriculture (MAF) presented organic farming as part of a "new agriculture" aimed at linking farmers to consumers through high-value products, and recognized organic agriculture as means to improve the environmental and social performance of agriculture while integrating poor farmers into value-adding value chains (Vitoon, 2012). In 2011, the total area devoted to organic production was estimated at 5,989.59 ha and the main crops under organic

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[1] Analyses of fresh vegetables sold in Vientiane markets reveal that over half of the samples contained pesticide residues of which 27% were above accepted safety levels (Helvetas Lao, 2008).

[2] Today, the organic market in Vientiane operates three times per week from several locations while similar markets opened in Luangprabang and Xiengkhuang provinces.

agriculture were: coffee (72% of certified organic land), rice (17%) and fruit & vegetables (7%) (ibidem). Recently, a wide range of initiatives in organic agriculture have emerged, which include: mulberry production in Xiengkhuang Province; coffee farmers on the Boloven plateau (Champassak province); rice producer groups in Vientiane Capital and Xiengkhouang province; vegetable farmer groups in Louangphabang, Oudomxay, and Savannakhet provinces and in Vientiane capital.

Throughout the world, increasing concerns are expressed by the consumers about the intensification of agricultural practices and the origin of the food they eat. This trend is also increasingly perceptible in Laos, where consumption patterns are slowly changing in response to a greater exposure to the market economy (e.g. more purchases of food on the market, increasing distance between the consumer and the producer, new food outlets, etc.). There is a large literature about consumers' attitudes towards organic food, most of which focuses on the developed markets of Europe and North America. In Southeast Asia, some evidence about consumer perceptions of and attitudes towards organic food may be found for Thailand (Roitner-Schobesberger et al., 2008; Posri et al., 2015). Studies on consumer demand for organic food products in the Lao PDR are scarce. The most detailed study (conducted in 2004-05 in Vientiane and Pakse) investigated consumer and trader understanding, perception and experience of organic agriculture. This survey revealed that a high proportion of Lao consumers and traders were aware of the concept of organic agriculture, maybe due to the high publicity given in Thai television and press to organic agriculture. The awareness was markedly higher in Vientiane, for both traders and consumers. For most consumer and traders, organic agriculture meant chemical-free agriculture or referred to traditional farming systems with no external inputs. Some restaurant owners associated organic agriculture with small and bad looking products. Although the question was quite abstract –few consumers knew about the concept of certification and the legal implications of the organic label– most respondents indicated their preference for government certification of organic agriculture. Most respondents were willing to buy organic products if they were not too expensive (no more than 20% above the price for conventional products). In Vientiane, respondents with higher levels of education were ready to pay higher prices. The main reasons cited for buying organic products were related to human health and food safety. More recently, a small consumer survey was conducted at the two organic markets in Vientiane (That Luang, Fa Ngum) but is was too small to be conclusive (JICA, 2014).

The general objective of the study is to understand the current perceptions and attitudes of end-users (e.g. consumers, traders, restaurants) towards organic food in the Lao PDR. More specifically, the study aims:

- to assess the main motives for purchasing organic products –e.g., expected health and environmental benefits; support to local and small farmers; search for healthy food; as a proxy for other valued attributes (fresh and tasty);
- to identify the main barriers to the development of the organic market (awareness, prices, trust, availability, regularity of supply, etc.) in view of providing the project recommendations on how to better promote organic products.

As consumer behaviors are likely to change over time –*e.g.,* with their situation, experience, activities, and level of exposure to various types of information and knowledge – the ultimate objective is to assess how consumer behavior regarding organic products changes over time in response to activities aimed at increasing their awareness of organic agriculture.

2. Materials and Methods

2.1. Survey instruments

The research team developed a questionnaire in English for each type of actor:

- the *consumer survey* was administered to individual consumers on organic and conventional markets throughout the country;
- the *retailer/SME* survey was administered to fruit and vegetable retailers and wholsesalers on the very same markets;
- the *hotel and restaurant survey* was administered to the owners in selected cities where tourism is more prevalent (Champassack, Luang Prabang and Vientiane provinces).

All survey instruments are provided in the Appendixes.

The survey aims to provide information on the level of knowledge, understanding and trust various types of stakeholders have in organic agriculture, but also their level of interest in organic products. Concrete information about the consumers' actual purchasing behavior (amount and frequency of purchases, reasons for buying or not buying organic products) was also provided. Finally, some questions deal with how various stakeholders think the organic sector is/should be organized (regulations, controls, etc.) and on what methods should be used to communicate about organic agriculture. The surveys also covers the demographic, and socio-economics characteristics of the consumers.

Table 1 – Main sections of the surveys

Consumer survey	Retailer, hotel & restaurant survey
▪ consumer profile, ▪ knowledge / perception about organic food & farming, ▪ purchases of fresh food products (organic & convent), ▪ purchases of organic food products, ▪ organic certification & trust, ▪ no purchases of organic food products.	▪ business profile, ▪ knowledge / perception about organic food & farming, ▪ sales strategy, ▪ organic certification & trust.

All surveys were anonymous and the respondents were informed of this prior to each survey.

The questionnaires were initially developed in English and then translated into Lao. Before going out to the field, the questionnaires were pre-tested to ensure their consistency, and a short survey was carried out in order to identify the relevant food markets that should be surveyed, and to check about existing organic markets (location, frequency and day of operation). Prior to each of the field trips, a list of the most important retail markets was provided to the surveyors.

2.2. Survey design

The following populations were eligible to take the survey: individual consumers present on conventional and organic retail markets; fruit and vegetable retailers present on conventional and organic markets; owners of dedicated organic shops; hotel and restaurant owners. A total number of surveys were decided for each of the provinces in which the survey was administered (Table 2). The total number of surveys for each province was calculated, based on: the population of the province; the presence and number of organic retail markets; and the level of development of tourism (hotel and restaurant survey).

Table 2 – Number of consumer surveys

	No. of households*	Planned no. of surveys
Bolikhamsai	43 303	80
Champassack	105 669	120
Khammouane	65 025	80
Luang prabang	72 785	120
Vientiane Capital	131 974	300
Vientiane Province	80 831	120
Xiengkhouang	40 348	100
TOTAL	539 935	920

* *Source*: Agricultural census, 2011 (Lao Decide)

Survey method was random sampling, with surveyors interviewing consumers randomly until the total number of surveys for the given markets was reached.

2.3. Data collection

Lao students from the National University of Laos (Faculty of Agriculture) were trained to administer the questionnaire personally. The data was collected during February and March 2015 in seven provinces in the Lao PDR. Altogether, 952 interviews were carried out throughout the country. The distribution of interviews by province and by type of stakeholder is presented in Table 3. A total number of 105 consumers (14%) were interviewed in organic markets in Vientiane, Xiengkhuang and Luang Prabang.

Table 3 – Allocation of respondents (whole survey)

	Consumers	Traders	Hotels & Restaurants	Total
Borikhamxay	65	16	-	81
Khammouane	68	21	-	89
Champassack	93	25	(5/5)10	128
Vientiane Capital	195	75	(15/15)30	300
Vientiane Province	120	9	-	129
Luang Prabang	100	15	(5/5)10	125
Xiengkhuang	90	10	-	100
Total	731	171	50	952

The data was entered manually into three separate databases using SPSS then merged together before being converted into STATA format for further statistical analysis.

As one of the objectives of the survey was to understand what knowledge consumers had of organic agriculture –namely by comparing the specific knowledge and perceptions of organic consumers with those of people who did not buy organic food– there was an oversampling of organic consumers throughout the country. Therefore the sample is not fully representative of the Lao population and sample statistics may be biased.

2.4. Data analysis

The collected data was summarized using descriptive statistics and mean comparisons using SPSS and STATA software.

3. Results from the consumer survey

3.1. Main characteristics of the respondents

The survey took place on the food markets of the capital cities of seven provinces. The **distribution of respondents by province** is represented in Table 4. The high number of interviews in Vientiane Capital and Vientiane province is voluntary, as most of the country's organic farming activity takes place in and around the capital.

Table 4 – Distribution of consumer surveys by province

Province	No.	Percentage
Bolikhamsai	65	8.89
Champassack	93	12.72
Khammouane	68	9.30
Luang Prabang	95	13.00
Vientiane Province	114	15.60
Vientiane Capital	206	28.18
Xieng Khouang	90	12.31
TOTAL	731	100.00

Source: Authors' survey.

The most represented **age group** is 35-44 years. Overall, the population of respondents is quite young: 37% of the respondents of the survey were under 35 years old and 77% were under 44 years old (Table 5).

Table 5 – Age distribution of interviewed people

Age	No.	Percentage
18-24 years	83	11.35
25-34 years	191	26.13
35-44 years	293	40.08
45-54 years	35	4.79
55-64 years	125	17.10
over 65 years	4	0.55
Total	731	100.00

Source: Authors' survey.

In terms of **gender distribution**, women represented 72% of our respondents, against only 28% for men, which seems consistent with the division of tasks among households, with women being more involved in the purchase of food and the preparation of meals.

The average number of household members was 5 for the whole sample, with no big differences between the provinces. 95% of the respondents had at least one child, and 33% had at least one child aged under 5 years old. Regarding children, there was no difference between the provinces, to the exception of Khammouane province where 68% of the respondents indicated having a child under 5 in their household (difference was significant at $p=0.01$).

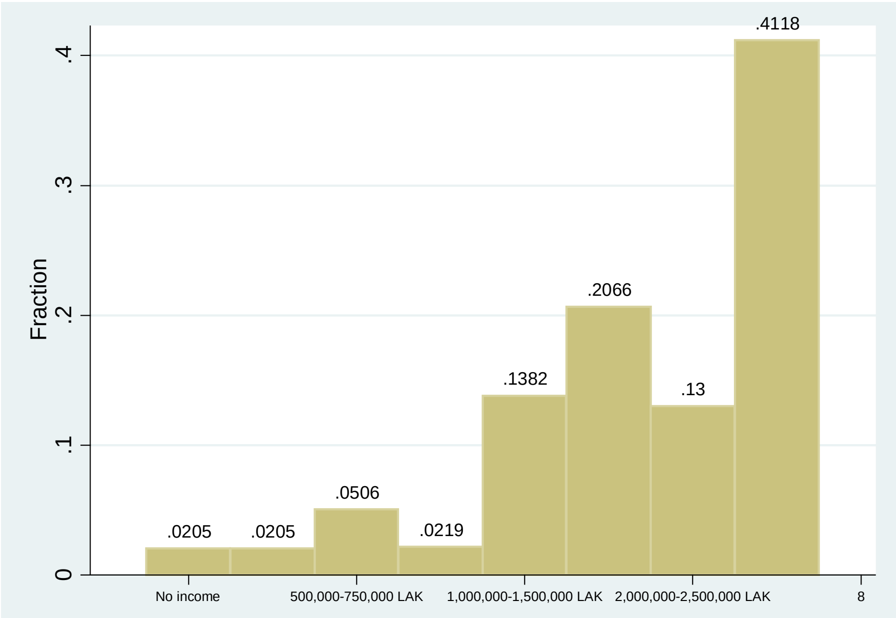
In terms of **income distribution** (Table 6), less than 10% of the respondents earned less than 750,000 LAK per month. At the other end of the spectrum, the monthly income of over 41% of the respondents was higher than 2.5 Mn LAK.

Table 6 – Distribution of the respondents by income

Monthly household income	No.	Percentage
No income	15	2.05
250,000-500,000 LAK	15	2.05
500,000-750,000 LAK	37	5.06
750,000-1,000,000 LAK	16	2.19
1,000,000-1,500,000 LAK	101	13.82
1,500,000-2,000,000 LAK	151	20.66
2,000,000-2,500,000 LAK	95	13.00
Over 2,500,000 LAK	301	41.18
Total	731	100.00

Source: Authors' survey.

Graph 1 – Distribution of the respondents by income



The picture is of course quite different when the **differences between provinces** are taken into account. Indeed, respondents earning less than 1 Mn LAK per month represented almost 28% of the sample in Khammouane province, but only less than 1% of the respondents in Vientiane Capital. Conversely, 51% of the respondents in Vientiane Capital said that they earned more than 2.5 Mn LAK per month against only 30% in Luang Prabang, 31% in Bolikhamsay, and almost 35% in Vientiane Province (lowland area quite suitable for agriculture, which benefits from the proximity with Vientiane Capital and Vangvieng). This is consistent with overall statistics of wealth distribution between the country's provinces.

In terms of **education**, while roughly 6% of the respondents had no education, 9% went at least a few years to primary school, 11% completed primary school and almost 25% of the respondents completed secondary school (Table 7).

Table 7 – Level of education of the respondents

Level of education	No.	Percentage
No education	43	5.88
Some primary school	63	8.62
Primary school completed	83	11.35
Some secondary school	110	15.05
Secondary school completed	181	24.76
Some graduate school	4	0.55
Graduate school completed	37	5.06
Some university	20	2.74
University completed	52	7.11
Technical school	138	18.88
Total	731	100.00

Source: Authors' survey.

Again, when broken down by region, these figures reveal large inequalities between the provinces. Khammouane province had the highest percentage of respondents with no education at all (16%). Vientiane Capital and Luang Prabang had the highest proportions of university graduates (resp. 14 and 12%). Luang Prabang province also had the highest proportion of graduates from technical schools (31%). The level of education in Vientiane Capital was significantly higher than in the other provinces.

The **employment status** of the respondents (Table 8) is quite interesting: 23% of the respondents were independent workers, 20% were private sector employees, and 15% were government officers. Farmers represented only 5% of our sample (32% in Vientiane Province). Vientiane Capital and Luang Prabang Province had the highest percentage of private company employees (resp. 44% and 25% resp.).

Table 8 – Employment status of the respondents

Employment status	No.	Percentage
Unemployed	68	9.30
Private company employee	147	20.11
Independent worker	165	22.57
Government officer	113	15.46
Farmer	37	5.06
Housewife	75	10.26
Retired	15	2.05
Student	30	4.10
Other	81	11.08
Total	731	100.00

Source: Authors' survey.

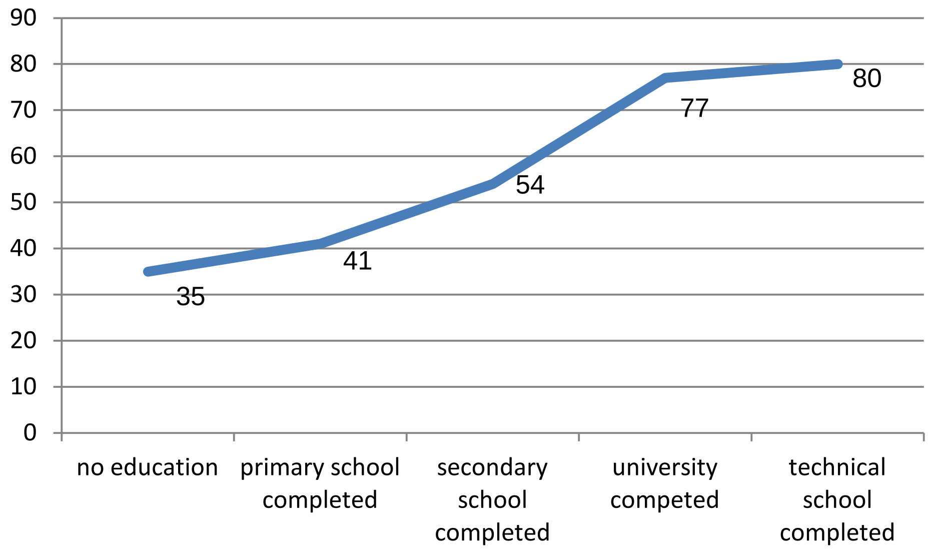
Finally, 46% of the respondents grew food themselves. Again, this proportion varied greatly across provinces with only 25% of the interviewees growing food products themselves in Vientiane Capital against 68% in Vientiane Province. Among this group, 84% declared growing food products mainly for their own consumption although a very small percentage (9%) also sold some of their production on the market.

3.2. *Basic knowledge and perception of organic food and farming*

Over the whole sample, 419 (57%) respondents declared having heard about organic agriculture. A slightly higher yet significant proportion of men heard about organic agriculture than women (61% against 56% resp.).

The **level of knowledge about organic agriculture** seems to increase with the level of education: the percentage of the respondents who declared knowing about organic agriculture rose from 35% for respondents with no education, to nearly 80% for respondents having completed technical school (Graph 2).

Graph 2 – Proportion of respondents having heard of organic agriculture by level of education



Source: Authors' survey.

Table 9 summarizes the profile of the respondents to the interview and provides a profile of organic consumers. This table shows the socio-economic and demographic characteristics of three categories of respondents:

- those who had never heard about organic agriculture (312 respondents),
- those who had heard about organic agriculture but who did not purchase organic products (180 respondents),
- those who had heard about organic agriculture <u>and</u> who purchased organic products (239 respondents).

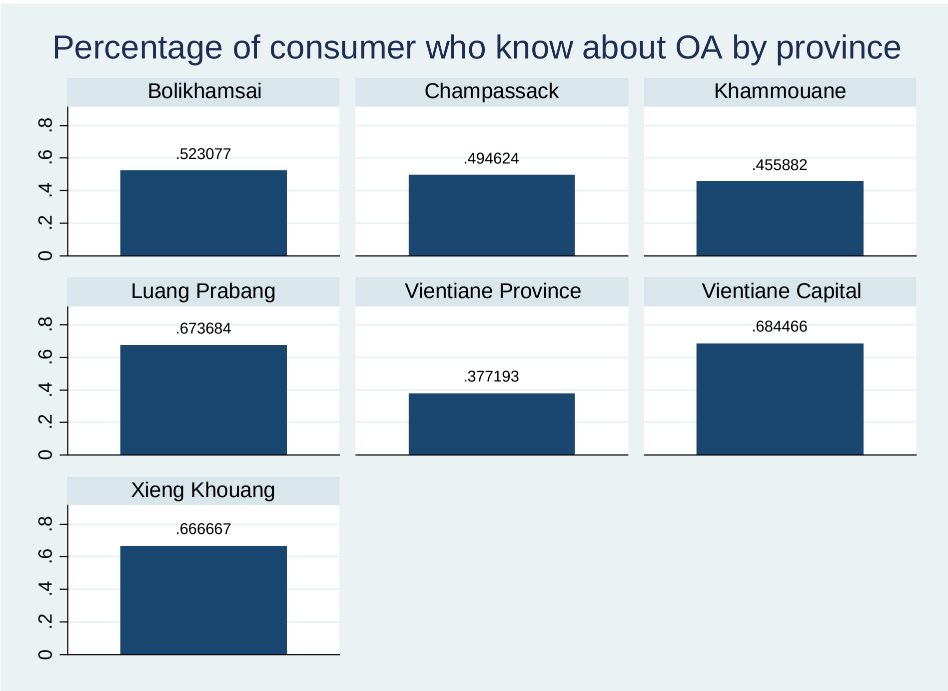
Table 9 shows that consumers with a lower level of education and a lower income were less likely to have heard of organic agriculture. On the other hand, those with a higher level of education and a higher income were more likely to have bought organic products. Surprisingly, gender seems to play a role as the proportion of men was significantly higher in the group of organic buyers than in the other groups (this might be the fact that men tend to be both more educated and wealthier). Age seemed to play a slight role (buyers of organic products tended to be older), but this variable was not highly significant. Finally, respondents with small children (under 5 years old) in their household did not seem more likely to buy organic products than others.

Table 9 – Characteristics of respondents

	Total sample	Never heard of organic agriculture	Non-buyers of organic products	Buyers of organic products
No. of individuals	731	312	180	239
	100%	43%	24%	33%
35 years and over				
No	274	39%	40%	34%
Yes	457	61%	60%	**66%***
Sex				
Male	205	26%	25%	**33%*****
Female	526	74%	75%	66%
Children under 5				
No	486	68%	66%	66%
Yes	245	32%	34%	34%
Higher education				
No	480	83%	70%	40%
Yes	251	**17%*****	30%	**60%*****
Household income > 2.5 Mn LAK/month				
No	430	68%	61%	34%
Yes	301	**32%*****	39%	**55%*****

Notes:
HIGHER equals 1 if the respondent went to the university or to a technical school.
* Rejection of the null hypothesis of equality of means in the two groups at 10% significance level.
*** Rejection of the null hypothesis of equality of means in the two groups at 1% significance level.

Graph 3 –percentage of respondents having heard of organic agriculture by province



Source: Authors' survey.

Again, the proportion of respondents having heard about organic agriculture varied according to the province: from 38% in Vientiane Province to 68% in Vientiane Capital. However, not all differences were significant: statistical tests show that differences are statistically significant for Vientiane Capital (+), Vientiane Province (-), and to a lesser extent Xieng Khouang. The percentages are detailed in Graph 3. These results are consistent with the fact that projects promoting organic farming practices and markets are present in these three provinces.

The main sources of information concerning organic agriculture (Table 10) cited by the respondents were television (mentioned by 28%), followed by discussions with family and friends (25%), posters/banners (12%). Internet was very little cited (5% of the respondents).

Table 10 – Origin of information about organic agriculture

	No.	% responses	% cases
On TV	208	34.04	28.45
Through family and friends	182	29.79	24.90
On a poster/banner	86	14.08	11.76
On the radio	13	2.13	1.78
In the newspaper	12	1.96	1.64
On the internet	40	6.55	5.47
Through my work	11	1.80	1.50
At my child's school	6	0.98	0.82
At the market	15	2.45	2.05
At the farmers' group	6	0.98	0.82
Other	32	5.24	4..38
Total	611	100.00	83.58

Source: Authors' survey. *Valid cases: 731*

According to the survey results, 76% of those who had heard about organic agriculture affirmed that they **understood its meaning**. This figure was only 44% in Bolikhamsai and 48% in Khammouane, but it reached 71% in Champassack, 72% in Vientiane Province, 73% in Luang Prabang, 78% in Xieng Khouang, and 92 % in Vientiane Capital. It is very likely that the high percentage of people who understand the meaning of organic agriculture is biased due to the oversampling of organic consumers. When these people were taken out of the sample, overall only 41% of the respondents understood the meaning of organic agriculture.

When asked about the **benefits of organic agriculture**, 97% of the respondents answered that organic agriculture "is good for health", 52% of the respondents answered that it "is good for the environment", and only 3% answered that it "supports local farmers" (Table 11).

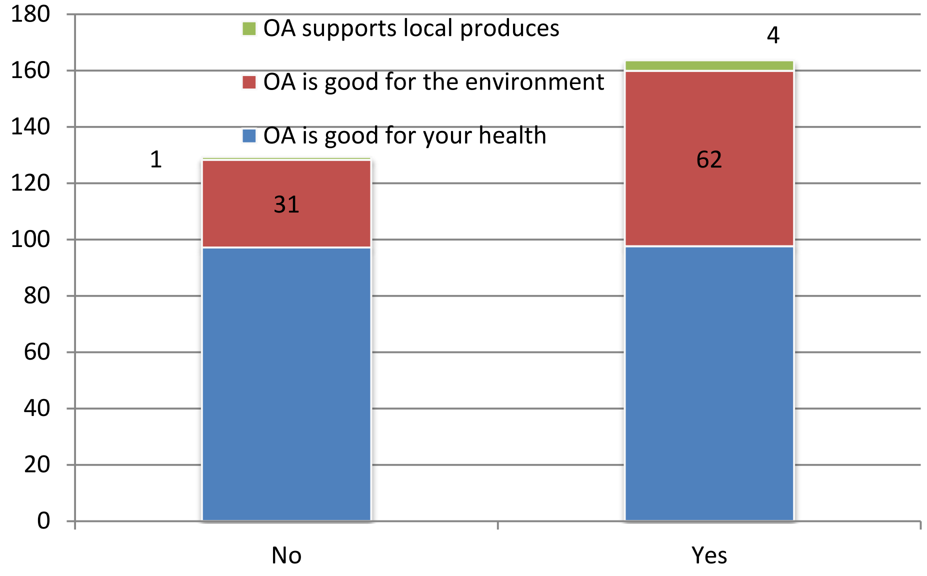
Table 11 – Benefits of organic agriculture (whole sample)

	No.	% responses	% cases
Good for health	308	64.17	97.47
Good for the environment	163	33.96	51.58
Supports local farmers	9	1.88	2.85
Total	480	100.00	151.90

Source: Authors' survey. *Valid cases : 316*

When this results is broken down between those who purchased organic products (Yes) and those who did not (No), the results are roughly the same regarding the benefits for health (Graph 4). The main difference lies in the fact that those who bought organic products were more aware of the other types of benefits (on the environment, for smallholders) of organic agriculture.

Graph 4 – Benefits of organic agriculture for buyers and non-buyers of organic products



Source: Authors' survey.

To add more details to the analysis, respondents were asked whether they agreed or not with a series of **statements related to organic agriculture and organic farming practices**. The results reveal that:

- 95% of the respondents agreed with the statement: "organic farming aims to protect the environment";
- 90% of the respondents disagreed with the statement: "chemical fertilizers are allowed in organic farming";
- 93% of the respondents disagreed with the statement: "chemical pesticides are allowed in organic farming";
- 54% of the respondents agreed with the statement: "organic food is the same as traditional/indigenous food" (this perception reached 65% in Bolikhamsai and 82% in Khammouane, and seemed to be higher for less educated people);
- 51% of the respondents agreed with the statement: "organic food is produced by small farmers".
- 98% of the respondents declared that organic agriculture should be promoted. How this should be done varied among respondents (Table 12), the main answers being: through television programs (43% of answers, 2/3 of interviewees), through school programs (23% of the answers, 36% of the respondents) and through radio programs (18% of the answers, 29% of the respondents).

Table 12 – How should organic agriculture be promoted?

	No.	% responses	% cases
Through television programs	364	42.72	68.29
Through radio programs	155	18.19	29.08
Through school programs	192	22.54	36.02
At the market	17	2.00	3.19
By local authorities	31	3.64	5.82
Through other means	93	10.92	17.45
Total	852	100.00	159.85

Source: Authors' survey. *Valid cases: 533*

Table 13 describes **the type of information that should be communicated about organic agriculture** according to the respondents. Information about the benefits of organic agriculture in terms of health comes first (mentioned by 81% of the respondents), followed by information about the benefits on the environment (mentioned by 30% of the respondents) and information about production methods (mentioned and 32% of the respondents).

Interestingly, the respondents answer significantly differently to this question according to their level of education: for example, 86% of the respondents who went to secondary school and above mentioned health against only 66% of those who had a level of education equal to or below primary education. A similar finding occurs for the benefits in terms of environment (34% against 18%). Differences are not significant for the other answers.

Table 13 – What kind of information should be communicated about organic agriculture?

	No.	% answers	% respondents
Information about the benefits in terms of health	428	48.09	80.60
Information about the benefits for the environment	160	17.98	30.13
Information about the production methods	169	18.99	31.83
Information about the general benefits of organic agriculture	98	11.01	18.46
Information about the meaning of organic agriculture	12	1.35	2.26
General information about organic agriculture	1	0.11	0.19
Other information	22	2.47	4.14
Total	890	100.00	167.61

Source: Authors' survey.

3.3. General purchasing habits of the respondents

This section is devoted to the food purchasing habits of the respondents and therefore concerns daily/weekly purchases of food items, regardless of the type of food (vegetables, meat, spices, etc.), its quality (organic/conventional) or origin.

First of all, almost 70% of the respondents considered themselves as the **person in charge of food purchases** within their household –90% of this group of individuals were women. Among the 30% respondents who were not usually in charge of purchasing food, 70% were men and said that this was usually the task of their wife, mother or daughter.

In terms of **frequency of purchases**, 48% of the respondents went to the market to purchase food every day of the week, and 69% went at least three times a week (Table 14).

Table 14 – Frequency of purchases at main market place

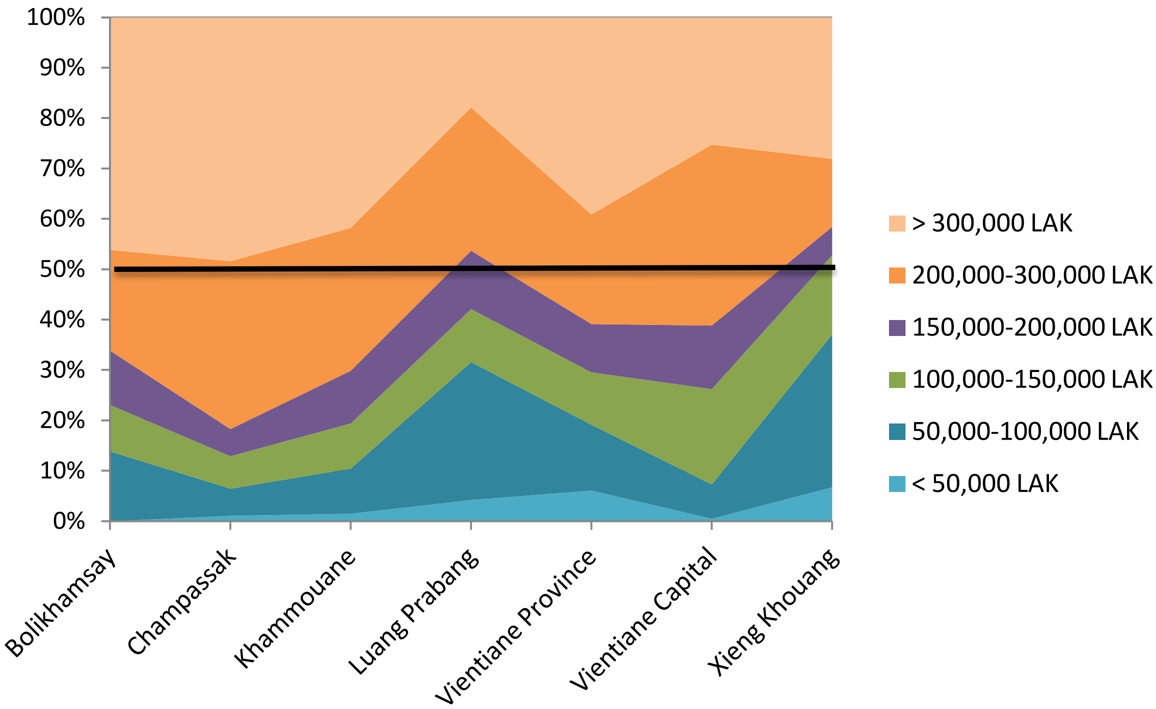
	No.	%	Cum.%
Once a week	78	10.70	
Twice a week	146	20.03	
Three times a week	156	21.40	21.40
Every day	348	47.74	69.14
Other	3	0.14	100.00
Total	729	100.00	

Source: Authors' survey.

This is related to the abundance of small wet markets throughout the country. Indeed, half of the consumers went to purchase their food less than two kilometers away from home and the mean distance to the main purchasing place was 4.5 kilometers. Average distance to the main purchasing place was highest for Champassack (7.5 km) and Khammouane (6.8 km) provinces, and lowest in Luang Prabang (2.7 km).

In terms of **weekly food expenditures**, 39% of all respondents spent less than 200,000 LAK per week, while on third of the respondents spent over 300,000 LAK. Again, important regional differences appear, as shown in Graph 5.

Graph 5 – Weekly food expenditures per province



In Xieng Khouang Province half of the respondents spent less than 150,000 LAK per week for food, while in Bolikhamxay and Champassak Provinces, the median was much closer to 300,000 LAK per week for food expenditures. Luang Prabang was in between, with half of the respondents spending less than 200,000 LAK per week on food.

Table 15 shows that the **type of food purchased at the market**: most of the respondents went to the market to buy vegetables (90%), meat fish and eggs (72%), herbs and spices (64%) and to a much lesser extent fruits (39%) and rice (9% only). Laotians consume very high quantities of rice[3] and are either self-sufficient in rice or secure their supply of rice through specific sources, and only buy rice at the market on specific occasions or for specific qualities.

Table 15 – Type of food purchased at the market

	No.	% answers	% respondents
Vegetables	656	32.82	89.62
Meat, fish & Eggs	523	26.16	71.45
Herbs & spices	471	23.56	64.34
Fruits	284	14.21	38.80
Rice	65	3.25	8.88
Total	1,999	100.00	273.09

Source: Authors' survey.

For the respondents, **top quality attributes for food[4]** include: food safety (62% of respondents), freshness (61%), appearance (37%), and long shelf life (24%), which is a little surprising given the frequency of the visits to the market, but less so given the tropical climate and if relatively few people own a refrigerator. Concerns over how the food was produced (organic agriculture), are only expressed by 7% of the respondents (Table 16).

Table 16 – High quality food should be…

	No.	% answers	% respondents
Safe	456	27.80	62.38
Fresh	447	27.26	61.15
Good looking	274	16.71	37.48
Long shelf life	177	10.79	24.21
Tasty	90	5.49	12.31
Nutritious	83	5.03	11.35
Big	61	3.72	8.35
Organic	48	2.93	6.57
Other	4	0.24	0.55
Total	1,640	100.00	224.35

Source: Authors' survey. *Valid cases: 731*

At this stage, it would be interesting to know a bit more about what the consumers understand by "safe" as this term may be interpreted in a variety of ways (*e.g.,* free of pesticide residues, free of heavy metals, free of bacteria, etc.).

Interestingly, some regional differences appeared in the answers to the question about important quality attributes. In Champassack, a higher percentage of consumers stated that high quality food should *"look good"* (55% against 35% elsewhere, this difference was statistically significant at p=0.001). In Luang Prabang, a higher percentage of consumers stated that high quality food should *"be safe*" (72% against 61% elsewhere, this difference was statistically significant at p=0.01).

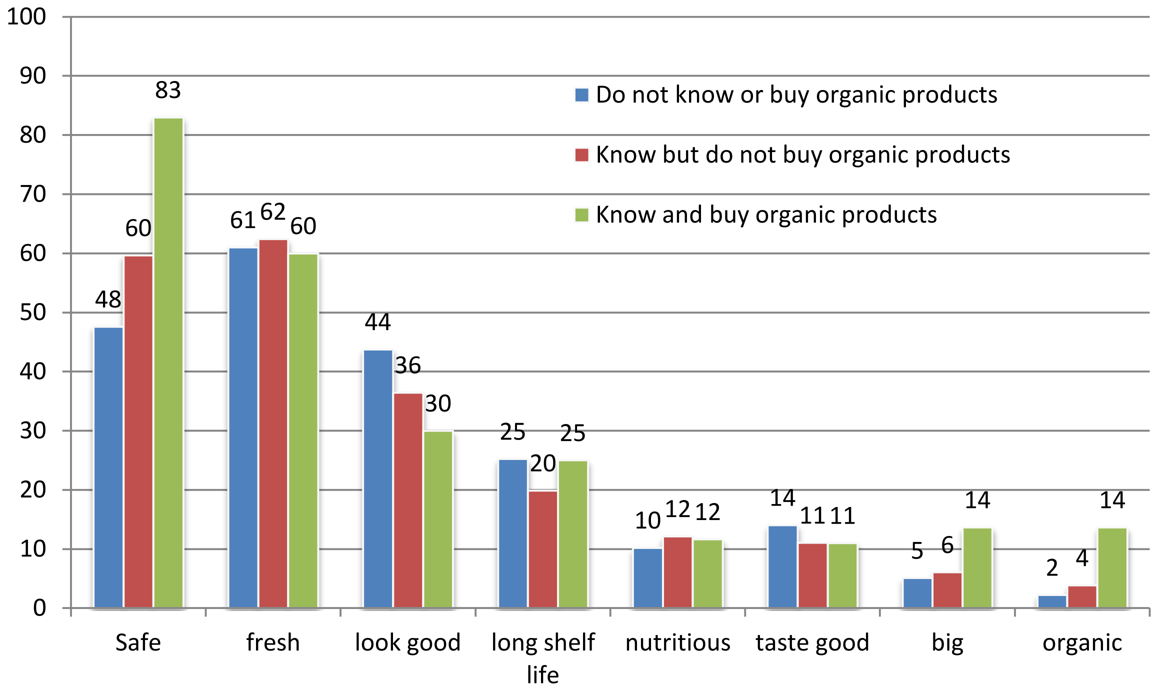
A comparison of the perception of high quality by different groups of consumers (Graph 6) reveals that different type of consumers rank food quality attributes quite differently:

[3] 200 kilograms per capita of milled rice per annum (Workld Bank, 2011).

[4] This question was not limited to organic food, but concerned food in general.

- consumers who did not know about organic agriculture and did not buy organic products mainly cared about freshness (60%), then safety (48%), appearance (44%), long shelf life (25%) and taste (14%);
- consumers who knew about organic agriculture but did not buy organic products cared almost equally about freshness (62%) and food safety (60%), then appearance (36%), long shelf life (20%) and nutritive properties (12%);
- consumers who knew about organic agriculture and bought organic products mainly cared about food safety (83%), then freshness (60%), appearance (36%), long shelf life (25%), organic (14%) and size (14%).

Graph 6 – High quality products for various groups of consumers



Note: differences for safety and appearance were significant at p=0.01.

Source: Authors' survey.

3.4. Purchases of organic products

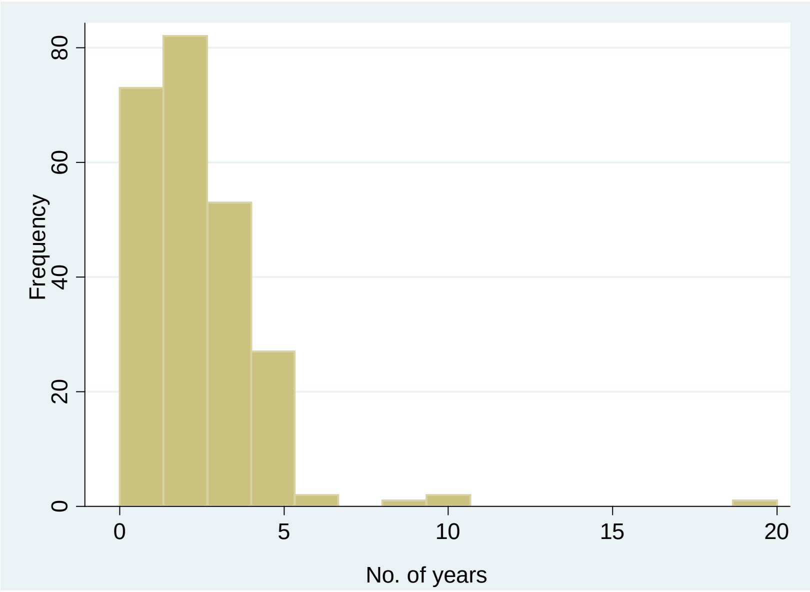
The questions in this section were only asked to those respondents who declared having at least once purchased organic products, *i.e.* to **one third of our initial sample** (239 respondents). In view of better understanding the motivations of this population of consumers, we chose to interview as many consumers as possible at organic markets. In reality, much less than 33% of the total population purchases organic products.

Moreover, those who declared having purchased organic products were mainly located in Vientiane Capital, Luang Prabang and Xieng Khouang provinces, where most of the organic projects (and hence markets) are located, and hence where the supply of organic food products is most important. The percentage of consumers having purchased organic products (resp. 49%, 52% and 50% of the respondents) was therefore significantly higher in these three provinces.

In terms of **social, demographic and economic profile**, there was no significant age difference between those who purchased organic products and those who did not. There was however a statistically significant difference between the proportion of men (39%) and the proportion of women (30%) who declared having purchased organic products (difference was significant at *p=0.02*)[5]. This is a bit puzzling as men are not usually the ones responsible for food purchases (indeed, 79% of the men who declared having purchased organic products also declared not being usually in charge of food purchases), so it seems less likely that they innovate when buying food. On the other hand, this may be explained by the fact that in our sample a significantly higher proportion of men received higher education (*i.e.* at least some university, university completed or technical school) then women. As knowledge about organic agriculture seems much correlated with the level of education, this may be a plausible explanation.

Organic agriculture in Laos is a recent phenomenon. 32% third of those who declared buying organic products have been doing so for less than 1.5 years and 86% have been doing so for less than three years (Graph 7).

Graph 7 – Number of years buying organic products



Source: Authors' survey.

Table 17 reveals that the **main organic products purchased by the respondents** were: vegetables (mentioned by 99% of respondents), herbs and spices (83%) and, far behind, fruits (mentioned by 29% of the respondents). Very little organic rice was purchased, probably for the same reasons as for conventional rice. The absence of a domestic market for organic rice may partly explain the marketing problems encountered by the organic rice growers located in Sangthong district (Vientiane Capital), as they can only rely on exports and local sales to wholesalers, retailers and foreigners/hotels and restaurants.

[5] Among the 205 men of our sample, 49 purchased food at the market on a regular basis. The other 156 were not usually in charge of food purchases and this task was devoted to their spouse (138), their mother (6) or their daughter (6).Interestingly 35% of the men who declared being in charge of buying food bought organic products, whereas this proportion jumped to 40% of the men who declared not usually being in charge of buying food. This is a surprising result.

Table 17 – Organic purchases

	No.	% answers	% respondents
Vegetables	238	46.21	99.17
Herbs & Spices	198	38.45	82.50
Fruits	70	13.59	29.17
Rice	6	1.17	2.50
Tea & Coffee	1	0.19	0.42
Meat, Fish & Eggs	2	0.39	0.83
Total	515	100.00	214.58

Source: Authors' survey. *240 Valid cases*

The importance of vegetables and herbs may be explained by: their availability (several projects have been promoting the production of organic vegetables); their importance in Lao cuisine; as well as by the fact that the consumers may be more concerned by the impact of the use of chemical inputs for products that are consumed raw and after very little transformation, than for example for rice (that is de-husked before being used).

The availability and diversity of organic food outlets (*e.g.* organic market, specialized shops, supermarket with a special area for organic products, etc.) are essential as their presence will determine the exposure of the overall population to the concept of organic agriculture, especially if they are located in a dynamic area (That Luang, tourist area, center of the city). Indeed, not only will they attract organic consumers, they are also likely to influence people who did not initially intend to buy organic products, but were curious about the market and the products that were sold there. This may explain my respondents were more aware of organic agriculture in Vientiane Capital, and Luang Prabang and Xiengkhouang provinces.

73% of those who declared buying organic products went to the organic market for their purchases (Table 18). A very small proportion of respondents (less than 5%) declared sourcing their organic products directly from the farmers. This could offer interesting opportunities for direct sales between farmers and consumers.

Table 18 – Location of organic purchases

	No.	% answers	% respondents
Ordinary fresh market	57	23.46	23.75
Organic market	175	72.02	72.92
Organic shop	-	-	-
Supermarket	-	-	-
From the farmers	11	4.53	4.58
Total	243	100.00	101.25

Source: Authors' survey. *240 Valid responses*

In Xieng Khouang Province, all consumers declared buying organic products at the organic market, and nowhere else. In Luang Prabang Province (resp. Vientiane Capital), 76% (resp 87%) of the respondents declared purchasing organic products at the organic market. The remaining 24% (resp. 40%) declared buying organic products at the ordinary fresh market, which seems a little surprising.

Frequency of organic purchases (Table 19) is much lower than the frequency of purchases of conventional food products for the simple reason that wherever they exist, organic markets do not operate on a daily basis. This explains why nearly 90% of the respondents bought organic products only 1-2 times per week.

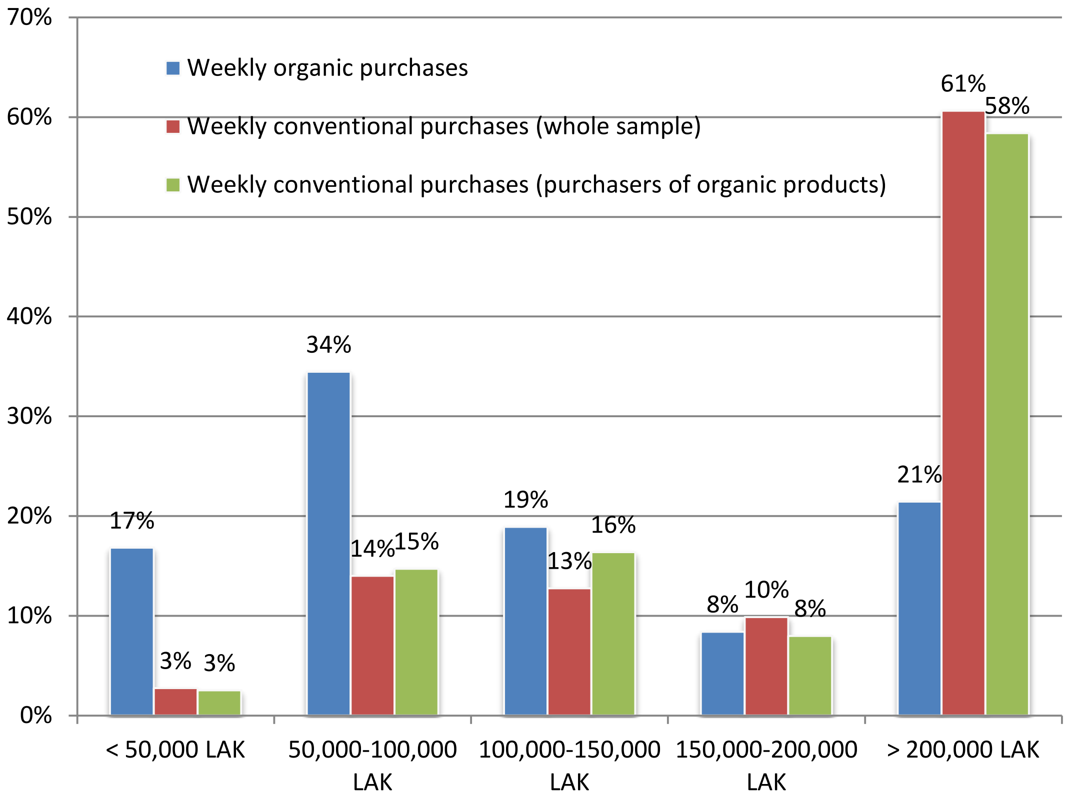
Table 19 – Frequency of organic purchases

	No.	% answers
1-2 times per week	213	89.50
3-4 times per week	8	3.36
5-6 times per week	2	0.84
7 times and more	3	1.26
Other	12	5.04
Total	239	100.00

Source: Authors' survey.

Weekly purchases of organic products by the respondents were not very high: Graph x shows that half of the respondents spent less than 100,000 LAK per week. In comparison, 60% of all respondents mentioned weekly purchases of conventional products above 200,000 LAK. This is explained by the lower frequency of organic purchases and by the smaller range of products available (mainly vegetables, herbs and fruits, no meat or fish).

Graph 8 – Weekly purchases of organic / conventional products



Source: Authors' survey.

The most cited **reasons for purchasing organic** products (Table 20) were that organic products were considered: to be safer (mentioned by 81% of the respondents) and healthier (52%); to have a longer shelf life (37%); and to be tastier (28%). Surprisingly, 22% of the respondents mentioned purchasing organic products to support to local farmers (22%), while caring for the environment was cited by very few people (less than 6%).

Table 20 – Reasons for buying organic products

	No.	% answers	% respondents
Safer	195	34.45	81.25
Healthier	126	22.26	52.50
Longer shelf life	89	15.70	36.93
Better taste	69	12.19	28.75
Support to local farmers	52	9.19	21.67
More nutritive	20	3.53	8.33
Care for the environment	14	2.47	5.83
Other	1	0.18	0.42
Total	566	100.00	235.83

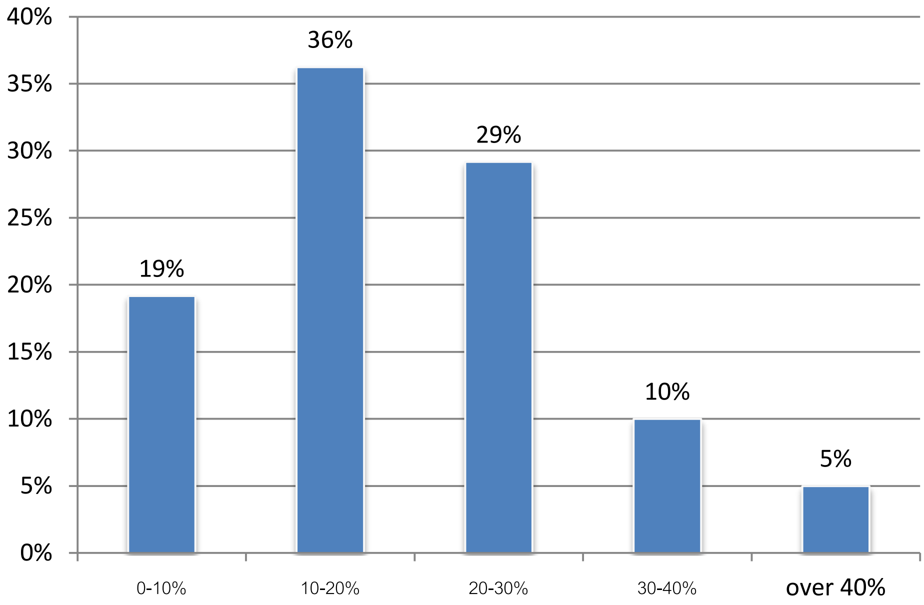
Source: Authors' survey. *240 Valid responses*

Several other studies mention that consumers feel that organic products taste better, although this might not be objectively true.

In terms of **satisfaction**, 88% of those purchasing organic products were satisfied with the range of organic products available. 80% were satisfied by the range of organic food outlets, with significant regional differences: 93% of the respondents were satisfied in Vientiane Capital (where the organic market operates several times per week and where there are a few specialized organic stores), against only 40% in Khammouane, and 50% in Champassak and Bolikhamsai (where there is an informal, irregular organic food stall in the general market). Differences in respondent satisfaction between Vientiane Capital (resp. Bolikhamsai) and the other provinces were statistically significant (at $p=0.01$). Finally, 97% of those purchasing organic products declared that the price of organic products was acceptable. When asked about how much more they would accept to pay for organic products, 55% of the respondents answered that they could accept up to 20% price increase (Graph 9).

This is a very theoretical question that may be contradicted by real purchasing behaviors. However, it gives some idea about consumer perceptions of prices, and sheds more light on the potential constraints/opportunities to the development of the organic market.

Graph 9 – Acceptable price increases for organic products



Source: Authors' survey.

3.5. Organic certification / Trust in organic certification

This section aims to understand what **quality signals** consumers look for and trust when purchasing organic products.

Table 21 – How can you be sure the products sold as organic are really organic?

	No.	% answers	% respondents
Trust in the organic label	126	27.51	52.72
Bad visual appearance	70	15.28	29.29
Trust in the seller	58	12.66	24.27
Trust in organic farmers	56	12.23	23.43
Higher price	46	10.04	19.25
Trust in the organic shop/market	36	7.86	15.06
I know the farmer personally	37	8.08	15.48
I know the seller personally	19	4.15	7.95
Impossible to know	10	2.18	4.18
Total	458	100.00	191.63

Source: Authors' survey. *239 Valid cases*

Table 21 shows that a little over one half of the respondents put their faith in the organic label. This is a little surprising as the logo is not that visible on the market for fresh products (there is no packaging), although it does appear on the premises of the organic market (*e.g.*, vendor T-shirts, banners, etc.). This is nevertheless consistent with the fact that 76% of the organic consumers declared having seen the organic logo before. Consumers also seem to trust their own eyes, as 29% declared that they trusted products with a bad visual appearance to be organic. 24% of the organic consumers declared trusting the seller and another 23% trusted the farmers. Finally, 19% considered a higher price as a trustworthy signal.

11% of those who purchase organic products said that they knew what **organic standards** are. 78% did not know if there were any such standards in Laos, while almost 18% knew that Laos has such a set of standards. Only 8% of the respondents who bought organic products said they knew both what organic standards are and that these standards exist in Laos. 15% of those who bought organic products declared knowing about the existence of a certification body in charge of inspecting the farmers and of certifying their practices against the organic standard. Finally, 7 people knew about local initiatives aimed at promoting organic agriculture.

Two thirds of the consumers were convinced that the government should legitimately be in charge of **checking/ensuring compliance** of organic products/practices with organic standards (Table 22). NGOs and consumer associations were also cited, but to a much lesser extent.

Table 22 – Who should make sure that organic products comply with organic standards?

	No.	% answers
Government	160	67.23
NGO	22	9.24
Consumer association	19	7.98
Farmers/Farmer groups	14	5.88
Private company	9	3.78
Other	6	2.52
Does not know	8	3.36
Total	238	100.00

Source: Authors' survey.

76% of the purchasers of organic products said they had seen the **organic logo** before. 59% of these people did not know what it meant, 25% declared they did and 16% could actually explain its meaning. Table 23 shows that the organic logo was most visible at the organic market (mentioned by 60% of the respondents), in the media (18%) and at the conventional market (12%). Finally, 93% of the purchasers of organic products declared trusting the logo.

Table 23 – Where did you see the organic logo?

	No.	% answers	% respondents
At the organic market	115	63.19	59.59
In the media	34	18.68	17.62
At the conventional market	24	13.19	12.44
At the supermarket	9	4.95	4.66
Total	182	100.00	94.30

Source: Authors' survey. *Valid cases: 193*

Less than 5% of the purchasers of organic products had seen the **GAP logo** (which is more recent and less promoted), and 5% declared they knew what it meant (these were not always the same people).

3.6. Reasons for not purchasing organic products

The **main reasons for not purchasing organic products** mentioned by the respondents were related to a lack of information about: where to find them (68% of respondents) and what organic agriculture is (18%). Other reasons were more related to availability and convenience as 40% of the respondents explained that organic products were not available at their usual market and another 9% said that the organic market was too far away. Trust was an issue for 17% of the respondents –among which 6% did not believe there was a difference between organic and conventional products. Surprisingly, reasons related to prices were provided by only 5% of the respondents (Table 24).

Table 24 – Reasons for not buying organic food products

	No.	% answers	% respondents
I do not know where to find them	332	41.50	67.48
The market where I go does not sell any	196	24.50	39.84
I do not know what organic agriculture means	86	10.75	17.48
I do not trust they are organic	57	7.12	11.59
The organic market is too far	47	5.88	9.55
There is no difference with conventional products	27	3.38	5.49
Conventional products are good enough for me	15	1.88	3.05
They are too expensive	15	1.88	3.05
Organic food is beyond my budget	8	1.00	1.63
There is a limited choice of products	3	0.38	0.62
Other	14	1.75	2.85
Total	800	100.00	162.60

Source: Authors' survey. *Valid cases: 492*

Table 25 confirms the importance of information and availability as those respondents who do not purchase organic products declared that they could change their mind if: they had more information about the farmers and their products (50% of the respondents) and the benefits of organic agriculture (40%); and if organic products were available at the local market (48%). Again, only 5% of the respondents mentioned prices as a decisive element for buying organic products.

Table 25 – Potential reasons for buying organic food products

	No.	% answers	% respondents
If I knew more about the farmer	241	31.26	49.39
If they were available at the local market	234	30.35	47.95
If I knew more about their benefits	197	25.55	40.37
If they were cheaper	25	3.24	5.12
Other	74	9.60	15.16
Total	771	100	157.99

Source: Authors' survey. *Valid cases: 488*

Box 1 – Consumer survey results

The consumer survey carried out on organic and conventional market of seven provinces in Laos provides us with a detailed picture of the **general purchasing habits** of consumers in Laos:

- people went to the market to buy food several times a week (69% went three days a week) and product freshness was an essential attribute of the food they bought, together with food safety and appearance;
- 39% of the respondents spent less than 200,000 LAK per week for food at the market, while 67% spent less than 300,000 LAK;
- the main types of food purchased at the market were: vegetables (89%); meat, fish and eggs (71%) ; herbs and spices (64%); and fruits (39%).

57% of the consumers surveyed knew about organic agriculture. This percentage overestimates consumer awareness of organic agriculture in the whole population as we surveyed several organic markets throughout the country.

Knowledge about organic agriculture was highly correlated with the respondents' level of **education and income**. There were also significant **regional differences** in the level of knowledge: Vientiane Capital, Xieng Khouang and Luang Prabang were the provinces were awareness of organic agriculture was the highest.

The **main sources of information** about organic agriculture were television (28%), and family and friends (25%). According to the respondents, the best channels to promote organic agriculture were television (68%), school (36%) and radio (29%) programs.

In terms of **message**, 97% of those who know about organic agriculture said it was "good for the health", while 52% said it was good for the environment. When asked about the **kind of information should be communicated about organic agriculture**, 81% of the respondents mentioned the benefits in terms of health, 31% mentioned information about the production methods, and 30% mentioned the benefits for the environment.

Consumers visited organic markets once or twice per week, and purchased mainly vegetables (99%) and herbs and spices (83%). Half of the consumers spent less than 100,000 LAK per week for organic purchases. Food safety (81%) and product freshness (53%) were the main reasons for going to the organic market.

Finally the survey provides some valuable information about those **who did not buy organic products**. The main reasons for not buying organic products were related to the availability of organic products (40%) and to a lack of information about what is organic agriculture (17%), and where to find its products (67%). Prices did not seem to be a limiting factor (mentioned by only 3% of the respondents).

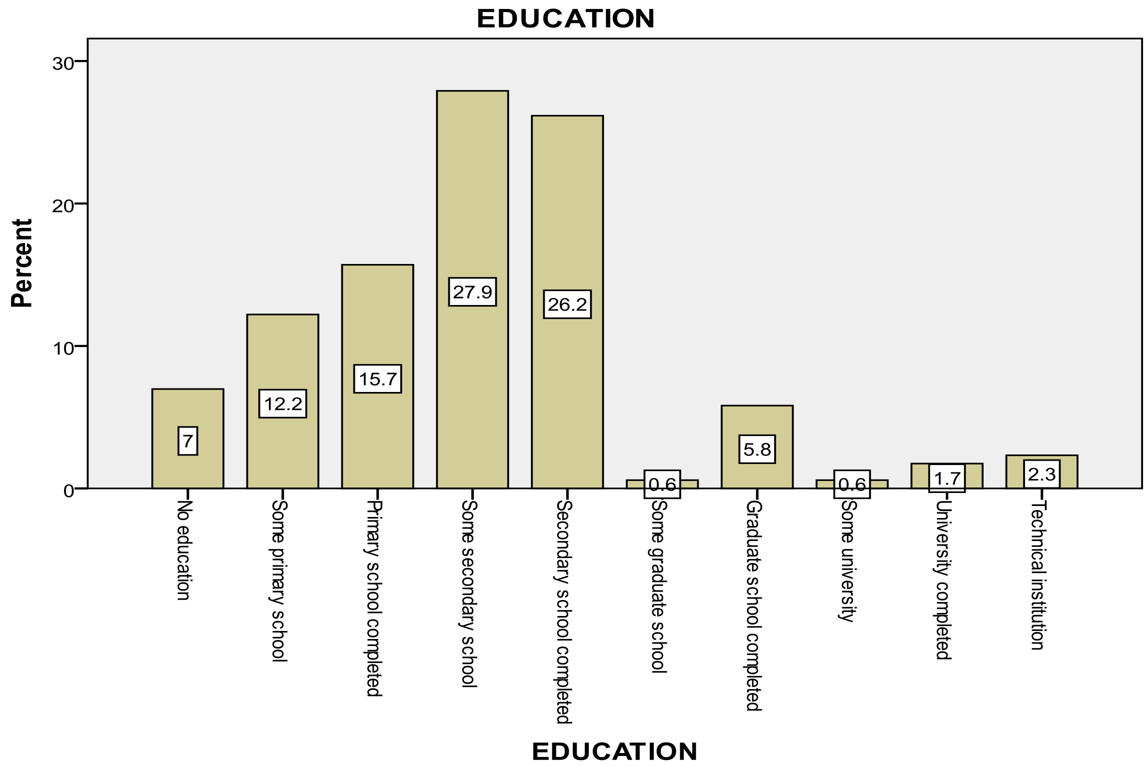
4. Results from the trader survey

4.1. Main characteristics of the respondents

The retail survey was conducted along with the consumer survey and the targeted groups were wholesalers, fruit and vegetable retailers, and rice millers. 90% of the respondents were female, and 10% were male. 44% of the respondents were aged between 35-44 years old.

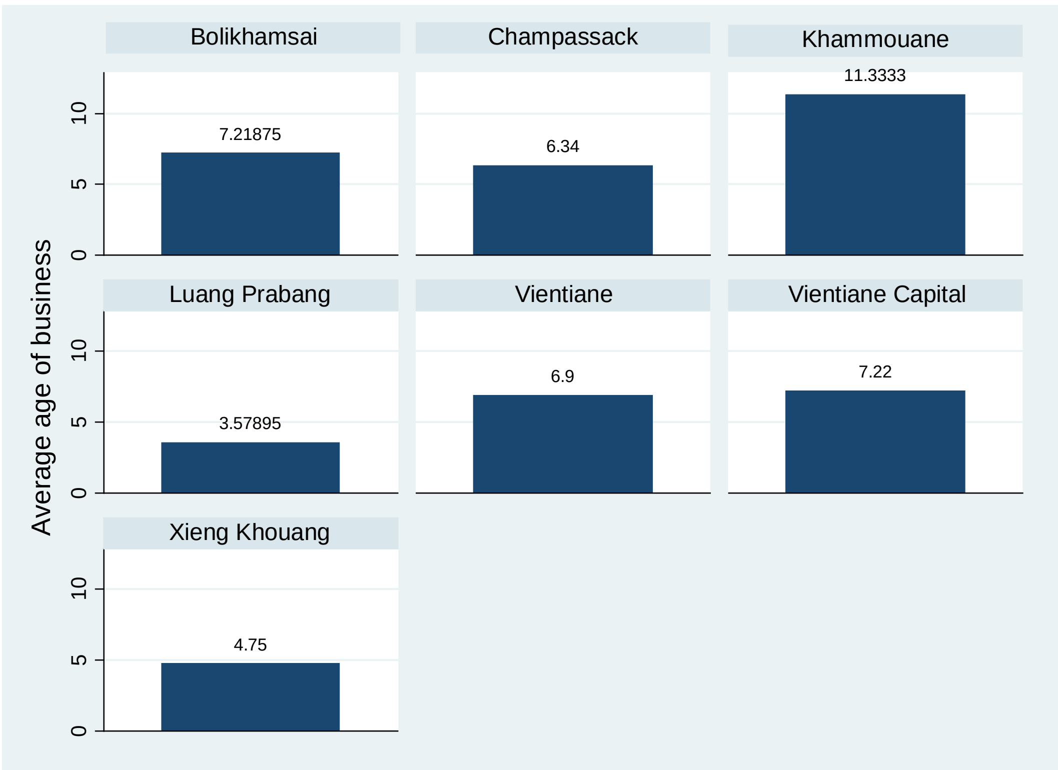
12% of the respondents had been to primary school, 16% completed primary school, 28% had some secondary school experience, and 26% completed secondary school (Graph 10)

Graph 10 – Level of education of respondents



The average age of the business for the whole sample was 7 years, with some statistically significant geographic differences –*e.g.*,Luang Prabang and Khamouane (Graph 11).

Graph 11 – Average age of business by province



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Source: Authors' survey

Over the whole sample, one quarter of the respondents had been in business for less than three years, half of the sample less than five years, and 27% over ten years.

Over 98% of the traders owned their shop, while less than 2% were employees.

As shown in Table 26, most of the traders surveyed were vegetable and fruit retailers (resp. 68% and 17% of the sample).

Table 26 – Types of traders interviewed

	No.	Percentage
Vegetable retail	122	70.93
Fruit retail	31	18.02
Fruit and vegetable retail	4	4.65
Rice retail	6	3.49
Vegetable wholesale	2	1.16
Fruit wholesale	1	0.58
Miller	1	0.58
Total	172	100.00

Source: Authors' survey.

80% of the traders sold conventional products, and only 16% sold organic products. The latter were mainly vegetable retailers. 52% of these retail outlets had a monthly business turnover between 1-5 Mn LAK per month, 23% earned more than 5-10 Mn LAK per month, and 27% earned over 10 Mn LAK per month.

Retailer outlets in Dao Hueng market, Champasack

Retailer outlets in Luk 3 market, Khammouane province

Graph 12 – Type of products traded

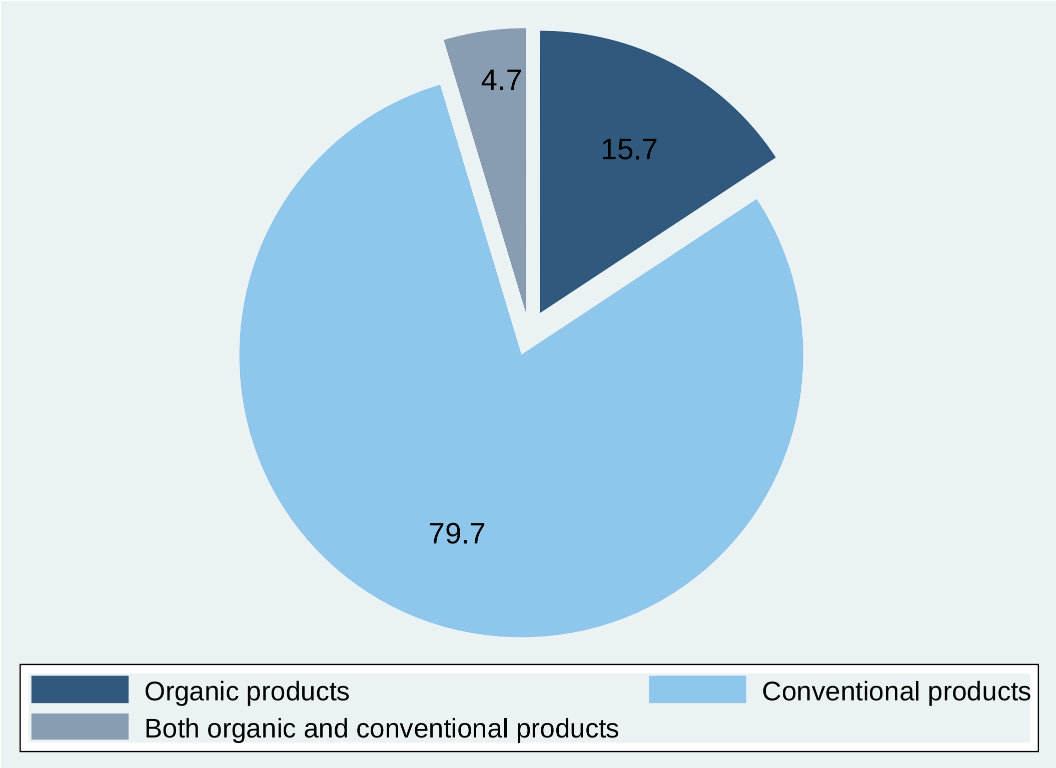


Table 27 – Source of fruit and vegetables (retailers)

	No.	% responses	% cases
From the wholesale market	83	42.6	56.1
From own farm	30	15.4	20.2
From the retail market	26	13.3	17.6
From farmer groups	14	7.2	9.5
From abroad	9	4.6	6.1
From other sources	33	16.9	22.3
Total	195	100.0	131.8

Source: Authors' survey. *No. of valid cases: 148*

Table 27 shows that in terms of origin, the vegetables and fruits sold by the retailers came from a variety of sources. The main sources were: the wholesale market (56%), the retailer's own farm 20% and the retail market (18%). Some retailers also sourced their products directly from farmer groups (9.5%) or from neighboring countries like China, Thailand and Vietnam (6%). Finally, some retailers had their own suppliers who are responsible for sourcing the products directly from the farmers.

Interestingly, 80% of all traders practiced agriculture for their own consumption: 90% grew vegetables, 36% grew rice and 33% grew fruits. Among those who grew rice, 41% (resp.14%) applied chemical fertilizers (resp. pesticides). Among those who grew vegetables, 19% (resp.10%) applied chemical fertilizers (resp. pesticides).

The main criteria used by the retailers to select their products (Table 28) were: (1) freshness, mentioned by 53% of the respondents, (2) prices, mentioned by 44%; (3) product quality mentioned by 37%, and (4) regularity of supply mentioned by 15% of the retailers. Other factors influencing purchasing decision of the retailers, included the appearance (products should look good) and consumer demand, which is of course a very important factor for retailers when they chose what products they will sell at their shop.

Table 28 – Important criteria for sourcing food

	No.	% answers	% respondents
Freshness	90	31.8	52.6
Price	76	26.9	44.4
Product quality	63	22.3	36.8
Regularity of supply	25	8.9	14.6
Volumes	8	2.8	4.7
Other	21	7.4	12.3
Total	283	100.0	165.5

Source: Authors' survey *No. of valid cases: 171*

Interestingly, price was mentioned as important factor for choosing the products by only 8% of the retailers selling organic products.

When asked about their understanding of high quality, 54% of the retailers ranked freshness of the product first, saying it was the first criterion they took into account when choosing products to sell at their shop. The second criterion was food safety (53% of the respondents), although it is unclear at this stage how they can ensure that the products they select are safe or not. Long shelf life is another criterion, mentioned by 34% of the respondents, and the product should look attractive to eat 34%. Other criteria revealed by the respondents during the field survey to express the meaning of high quality included a bad appearance (high quality products should not look so nice and have some evidence of insect damage).

4.2. Basic knowledge of organic agriculture of the respondents

According to the field survey, 55% of the retailers had heard about organic agriculture, while 45% of the respondents were not familiar with the concept. Table 29 shows that among those who knew what about organic agriculture, the majority of the respondents (64%) had heard about organic agriculture through family and friends, 20% from television, 15% from posters and banners, and 12% from extension workers. None of the respondents had heard about agriculture production from the radio, Internet or newspapers. Besides having heard about organic agriculture from the mass media, retailers also learned about organic agriculture from other sources (*e.g.,* the market, organic agriculture projects).

Table 29 – Origin of information about organic agriculture

	No.	% responses	% cases
Through family and friends	56	51.85	64.37
On TV	17	15.74	19.54
On a poster/banner	13	12.04	14.94
Through extension officers	10	9.26	11.49
On the radio	0	0.00	0.00
In the newspaper	0	0.00	0.00
On the internet	0	0.00	0.00
Through my work	3	2.78	3.45
At my child's school	2	1.85	2.30
Other	7	6.48	8.05
Total	108	100.00	124.14

Source: Authors' survey. *Valid cases: 87*

42% of those who had heard about organic agriculture said that they understood its meaning, while 23% informed that they did not.

Meaning of organic agriculture. Again, organic agriculture means different things to different people. According to the field survey, 16% of the respondent who had heard about organic agriculture mentioned the use of chemical substances, using such expressions as "chemical free", or "without chemicals". Among the traders who said that they understood what organic agriculture is, 99% declared that it was good for the health, 15% declared that it was good for the environment and less than 3% said that it supported smell farmers. 88% of these informed farmers said that organic food is the same as traditional/indigenous food. This shows that there might be some confusion for the respondents between "organic products" and "natural products".

OA and GAP logos. During the field survey, the interviewers showed two the organic agriculture logo and the GAP logo to the respondents. 17% (29/172) of the traders had seen the organic logo, mostly at the organic market (27/172) or in the media (11/172). All of the traders who knew the logo declared trusting it. However, only 12% (21/172) knew what it meant. Only 6% of the traders had seen the GAP logo before.

Standards. 22% of the retailers who said they had heard about organic agriculture declared knowing about the organic standard, 14% knew about the existence of Lao PDR organic standards, and 13% knew about the existence of a certify body in Laos. 13 traders with experience in handling/trading organic products were able to give examples of organic initiatives: five mentioned the PROFIL project of the Ministry of Agriculture and Forestry, and three traders from Luang Prabang mentioned SEADA projects, other initiatives mentioned by the traders involved PAFO, the Lao extension center, Lao Women's Union, etc.

Trust. When asked about what/who they trusted when dealing with organic products, 18% of the traders who responded to this question (33 traders) said that they knew the farmers personally; 15% trusted the logo; 15% trusted the organic producers and 15% were traders were at the same time organic producers who followed the standards

94% of the traders who sold organic products agreed that these products were really organic, 94% also agreed that organic products had to comply with strict rules. 84% believed that the organic logo guarantees that organic products are really organic, and 81% trusted the control system behind the logo. 13% believed that organic agriculture is only about marketing. When asked about who should make sure that organic products comply with organic standards, 65% of the respondents designated the government and 15% mentioned the farmer groups and 9% the consumer associations

76% of the respondents who had heard and who understood organic agriculture declared that they wanted organic agriculture to be promoted. The promotion of organic agriculture should be carried out through: television (45%); radio promotion (28%) and 14% saying that the promotion should be done via local authority, and 12% promote via school program. Some respondent also suggest promoting directly in the villages, at the market, and through the newspapers. The information that should be communicated when promoting organic agriculture includes: the benefits for health of organic product (62%); how organic products are produced (27%), and the general benefits beyond health (12%).

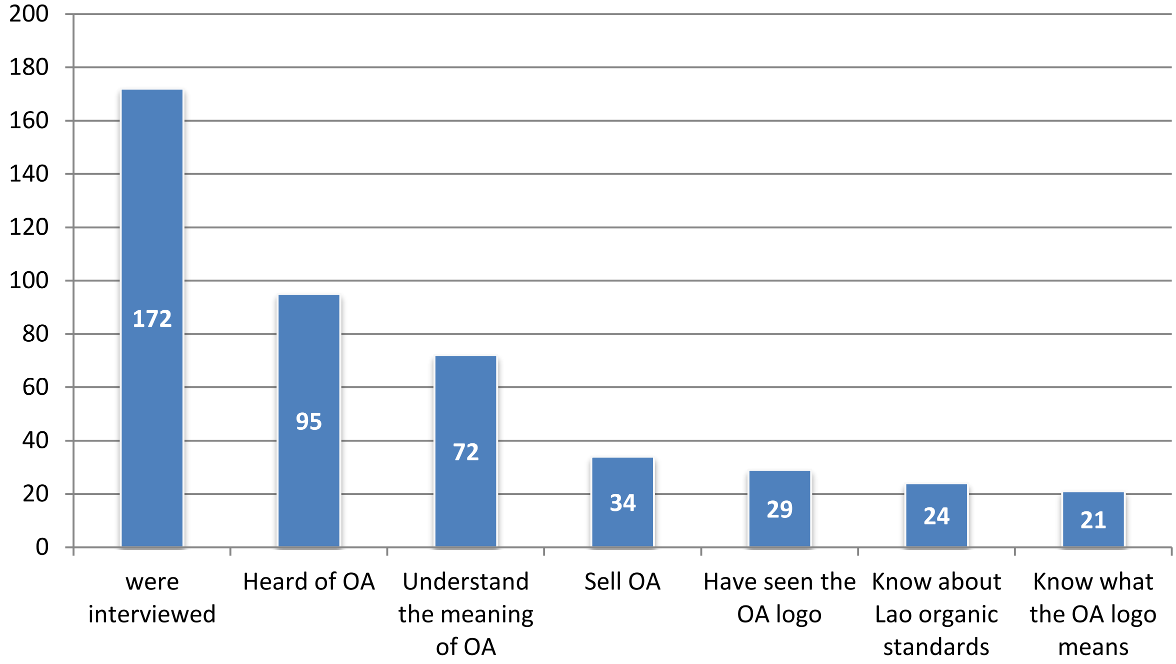
20% of the traders had an experience trading organic products, mostly vegetables (18%), herbs and spices (11%) and fruits (5%). Retailers had 2-5 year experience in selling organic products. Their main reasons for selling organic products (Table 30) were that: they cared about consumer health (58% of the respondents); organic products taste better (15%); they care about the environment (15%). Other reasons include: willing to avoid being in contact with chemicals, caring about their own health, consumer demand and longer shelf life.

Table 30 – Reasons for traders to sell organic products

	No.	% answers	% respondents
Better taste	5	10.10	15.15
Caring about consumer health	19	38.75	57.58
Support to local farmers	1	2.04	3.03
Higher profits	3	6.12	9.09
Caring about the environment	5	10.20	15.15
Other reasons	16	32.65	48.48
Total	49	100.00	148.48

Source: Authors' survey. *Valid cases: 33*

Graph 13 – Number of traders who…



Source: Authors' survey.

4.3. Reasons for not trading organic products

Table 31 shows the main reasons why traders did not sell organic products. The main reason was that they did not know where to find organic products (52% of the respondents). The second main reason related to the market demand: 36% of the traders said that conventional products were more demanded, while 16% said that there was no demand for organic products. 15% of the traders considered organic products to be too expensive and 14% did not think that there was any difference between organic and conventional products.

Table 31 – Reasons for not trading organic food products

	No.	% answers	% respondents
I do not know where to find them	64	34.22	52.46
Conventional products are more demanded	44	23.53	36.07
There is no demand from the consumers	19	10.16	15.57
They are too expensive	18	9.63	14.75
There is no difference with organic products	17	9.09	13.93
The organic market is too far	8	4.28	6.56
Low profits from organic trade	4	2.14	3.28
I do not trust that they are organic	12	6.42	9.84
Other	1	0.53	0.82
Total	187	100.00	153.28

Source: Authors' survey. *Valid cases: 122*

When asked what could make them start trading organic products, 47% of the traders said that they could change their mind if there was a demand for organic products; 32% said that knowing more about organic farmers would encourage them to trade organic products; 21%

said they could start selling organic products if they knew more about the benefits of organic agriculture; 17% said if they were cheaper, and 16% said if they were more easily available.

Box 2 – Trader survey results

The trader survey was conducted simultaneously to the consumer survey on conventional and organic markets in the seven provinces. The survey shows that:

- over half of the traders had a business turnover between 1-5 Mn LAK/month, 23% earned 5-10 Mn LAK/month, and 27% earned over 10 Mn LAK/month;
- 71% of the respondents were vegetable retailers, 18% were retailers, and the remaining were fruit and vegetable wholesalers, rice retailers, millers;
- most of the traders sold conventional products (80%), 18% sold organic products, and some 2% sold both conventional and organic products;
- traders sourced their products from: the wholesale market (56%), their own farm (20%), retail markets (18%), farmer groups and neighboring countries (especially during shortage of domestic supply);

Among the criteria used to select the products for their shop, the most important factor was freshness (52%), followed by the price (44%), quality (36%), and regularity of supply (14 %).

Knowledge about organic agriculture: over half of the respondents declared that they knew about organic agriculture while 45% were not familiar with the concept. 64% of the respondents who knew about OA heard about it from friends and family, 20% from TV, 15% from poster and banner and 12% heard from extension workers.

The ***meaning of organic agriculture*** was very much related to the use of chemical substances: 16% of those who understood what organic agriculture meant mentioned "chemical free products", over 99% said was good for the health, and ***88% of traders said the organic food was the same as traditional/indigenous food.*** This shows confusion about the meaning of organic agriculture that should be clarified in the future.

OA and GAP logo: 17% of respondents had seen the logo, mainly at the organic market where logos are visible. All of those who knew about the logo trusted it. Only 6% of respondents had seen the GAP logo before.

Reasons for not trading organic products. Over half of those who did not sell any organic products (52%) did not know where to buy them, 36% said conventional products were more demanded by consumers, 16% said there was no consumer demand for organic products, 16% said that organic products were too expensive and 14% believed that organic products were no different from conventional products. When asked about what could make them change their mind and start trading organic products, 42% of the traders said if there was a demand for such products, they would sell them (and hence find out where to buy them).

5. Hotel and restaurant survey

5.1. Characteristic of the respondents in the hotel and restaurant sector

The hotel and restaurant survey was conducted in well-known hotels and restaurants in the main tourist areas of Lao PDR –*i.e.* Luang Prabang, Vientiane Capital and Champassack. The hotels selected for the interviews were those providing food for their clients and/or organizing receptions. According to the interviews, most of the respondents were female (55%). More than 60% were employees –especially in the hotels, where we interviewed the hotel manager or the person in charge of food procurement. The remaining 40% were the owners, mainly in restaurants. 38% were aged 25-34 years old and 23% were aged 35-44 years old. 45% of the respondents had completed university (highest education level of the respondent), 25% completed graduated school and 20% completed secondary school.

Most of the restaurants were rated as ordinary businesses (no stars). Regarding the hotels, 60% were rated as ordinary, 20% were 3-stars hotels and 20% had over 3 stars. 77% of the hotels and restaurants had a monthly turnover over 10 Mn LAK and the remaining 23% had a monthly income between 5-10 Mn LAK. 18% of the hotels and restaurants had been operating for 10 years, 10% for 18 years and 10% for 5 years, few of them had been running the business for more 35 years.

Over 70% of the respondent declared using conventional ingredients to prepare food for their customers, while 30% said they used a mix of organic and conventional products. None of the respondents used exclusively organic products to prepare food for their customers, mostly because organic products are more expensive, less easily available and less diverse than conventional ones.

5.2. Knowledge about organic agriculture

In terms of the knowledge about organic agriculture, 90% of the respondents declared that they knew about organic agriculture. The main sources of information are listed in Table 32.

Table 32 – Origin of information about organic agriculture

	No.	% responses	% cases
On TV	4	9.09	11.11
Through family and friends	11	25.00	30.56
On a poster/banner	3	6.82	8.33
On the radio	1	2.27	2.78
In the newspaper	3	6.82	8.33
On the internet	0	0.00	0.00
Through my work	0	0.00	0.00
At my child's school	0	0.00	0.00
Through extension officers	13	29.55	36.11
Other	9	20.45	25.00
Total	44	100.00	122.22

Source: Authors' survey. *Valid cases: 36*

The main sources of knowledge where: extension officers from the PAFO (36%), followed by friends and family (31%), and television (11%). Over 80% of the respondents who said that they had heard about organic agriculture declared that they understood its meaning.

The most significant understanding about OA was that it is "chemical free" and that "natural fertilizers are used" (53% and 15% respectively). This is in line with the answers concerning the benefits of organic agriculture (29 respondents): all of those who answered this question said that organic agriculture is good for the health; while 32% said that organic agriculture is good for the environment. 90% of these respondents agreed with the statement that organic agriculture helps protect the environment, and 90% (resp. 93%) knew that pesticides (resp. chemical fertilizers) are not allowed in organic agriculture. Finally, 83% of the respondents agreed with the statement that organic agriculture is grown by small farmers and 80% thought that organic products were the same as indigenous/traditional products. These results are in line with the results of the consumer and trader surveys.

It is worth noting that 97% of the respondents would like organic agriculture to be promoted. According to the respondents, the promotion of organic agriculture should be done through television (56%) and radio (36%) programs. 39% thought that the promotion should be carried out through local authorities, which already seems to be the case (cf. Table 32).

5.3. General purchasing habits

60% of the hotels spent over 5 Mn LAK per week for food, against 39% of the restaurants.

Tables 33 and 34 show that half of the respondents bought their fruits and vegetables from the wholesale market, and another 28% from the retail market. Rice was most often sourced from the retail market. There seems to be no direct links between hotels/restaurants and farmer groups in the case of rice, and a little more in the case of fruits and vegetables. This could be an interesting avenue for the development of organic agriculture.

Table 33 – Place where fruit and vegetables were purchased

	No.	% responses	% cases
Retail market	11	18.03	27.50
Wholesale market	21	34.43	52.50
Farmer groups	8	13.11	20.00
Own farm	0	0.00	0.00
Imported	3	4.92	7.50
Other	18	29.51	45.00
Total	61	100.00	152.50

Source: Authors' survey. *Valid cases: 40*

Table 34 – Place where rice was purchased

	No.	% responses	% cases
Retail market	17	38.64	45.95
Wholesale market	11	25.00	29.73
Farmer groups	0	0.00	0.00
Own farm	1	2.27	2.70
Imported	2	4.55	5.41
Other	13	29.55	35.14
Total	44	100.00	118.92

Source: Authors' survey. *Valid cases: 37*

Three criteria were very important when purchasing food (Table 35): (1) product quality (mentioned by 80% of the respondents); (2) product freshness (55%); and (3) price (40%).

Table 35 – Important criteria for sourcing food

	No.	% responses	% cases
Price	16	19.75	40.00
Regularity of supply	4	4.94	10.00
Product quality	32	39.51	80.00
Freshness	22	27.16	55.00
Volumes	2	2.47	5.00
Origin of product	0	0.00	0.00
Other	5	6.17	12.50
Total	81	100.00	202.50

Source: Authors' survey. *Valid cases: 40*

According to the respondents, high quality food should be fresh (83% of the respondents), safe (63%), and good looking (48%).

Table 36 – High quality food should be…

	No.	% answers	% respondents
Safe	25	25.25	62.50
Fresh	33	33.33	82.50
Good looking	19	19.19	47.50
Long shelf life	2	2.02	5.00
Tasty	5	5.05	12.50
Nutritious	3	3.03	7.50
Big	1	1.01	2.50
Organic	3	3.03	7.50
Other	8	8.08	20.00
Total	99	100.00	247.50

Source: Authors' survey. *Valid cases: 40*

5.4. Reasons for consuming organic products

All the results under this section should be taken with considerable caution as the number of respondents was very low (between 8 and 12, depending on the question).

Only 30% of the respondents ever bought organic products. 58% of those who bought organic products had been doing so for 3 years or less. The most commonly consumed organic products were vegetables (all respondents), herbs and spices (66% of the respondents) and fruits (42%). As in the case of individual consumers, there seemed to be little consumption of organic rice (25%). As for individual consumers, two thirds of the respondents declared going to the organic market 1-2 times per week. Half of them spent more than 3 Mn LAK per week. Most of the people interviewed in the hotels and restaurants declared purchasing organic product because they cared about consumer health 67%.

While overall 58% of the respondents were satisfied with the range of organic products available, none of the people interviewed in luxury hotels declared they were satisfied, which means that there could be an untapped demand for such products. Overall, 58% of the respondents were satisfied with the organic product outlets and 75% were happy with the current prices of organic products.

17% of the respondents were willing to pay less than 10% more for organic products, 25% were ready to pay 10-20% more than the current price, 25% would be ready to pay 30-40% more and 25% were ready to pay 40% more than the current price.

Irregularity of supply and low volumes were the most difficult things to deal with concerning organic products. Knowing the farmers personally and poor products appearance were the trusted by the respondents as good signals of the organic nature of the products. Finally, almost all of the respondents believed that the government is the best body to make sure that the organic production complies with organic production standards.

5.5. Reasons for not consuming organic product (non-buyers of organic products)

There are several reasons why the respondents did not purchase/ use organic products in their business: 43% of those who answered the question mentioned the price; another 32% said that they did not know where to buy them. The main organic markets are located in Vientiane Capital, Xiengkhuang, Luang Prabang and Savannakhet, the biggest one being the one in Vientiane capital. 18% said that there is no demand from their customers. Finally, 82% gave other reasons, such as: organic products are too nice; they are sure that the products are really organic or not; they cannot identify the difference between organic and conventional products; conventional products look nicer; they already have a steady relationship with their suppliers; they have no information about organic products; supply of organic products is limited (both in quantity and in terms of diversity).

Table 37 – Reasons for not buying organic food products

	No.	% answers	% respondents
They are too expensive	12	21.82	42.86
I do not know where to find them	9	16.36	32.14
There is no demand from my customers	5	9.09	17.86
There is no difference with conventional products	2	3.64	7.14
I do not trust they are organic	2	3.64	7.14
I do not know what organic agriculture means	1	1.82	3.57
The organic market is too far	0	0.00	0.00
Low profit from organic agriculture	0	0.00	0.00
There is a limited choice of products			
Other	23	41.82	82.14
Total	55	100.00	196.43

Source: Authors' survey. *Valid cases: 28*

Table 38 – Potential reasons for buying organic food products

	No.	% answers	% respondents
If they were available	25	50 .00	89.29
If they were cheaper	11	22.00	39.29
If I knew more about the farmer	4	8.00	14.29
If there was a demand from the consumers	1	2.00	3.57
Other	0	0.00	0.00
Total	50	100.00	178.57

Source: Authors' survey. *Valid cases: 28*

The people interviewed in hotels and restaurants would be ready to change their mind and offer organic products to their clients, if the organic product were available (89%), and if their price was cheaper than now (39%). Knowing more about the benefits of organic product was also mentioned.

Box 3 – Hotel & restaurant survey results

Conducted in touristic areas of the Lao PDR (Luang Prabang, Vientiane Capital and Champassack provinces), this survey provides us with a detailed picture of the general purchasing and serving habits of hotel and restaurant owners in Laos.

Respondents went to the market to buy food every day; half of the respondents bought their fruits and vegetables from the wholesale market; and **product quality** was an essential attribute of the food they bought, together with product **freshness** and **price**. 60% of the hotels spent over 5 Mn LAK per week for food, against 39% of the restaurants;

90% of the respondents declared knowing about organic agriculture. The main sources of information were PAFO extension officers (36%), friends and family (31%), and television (11%). Knowledge about organic agriculture was highly correlated with the respondents' level of education. 97% of the respondents wanted organic agriculture to be promoted, preferably through television (56%) and radio (36%) programs. 39% thought that the promotion should be carried out through local authorities. All of the respondents said that organic agriculture is good for the health; **only 32% said that organic agriculture is good for the environment**.

Over 70% of the respondents declared using conventional ingredients to prepare food for their customers, while **30% used a mix of organic and conventional products**. None of the respondents used exclusively organic products, mostly because organic products were more expensive, less easily available and less diverse than conventional ones

30% of the respondents bought organic products at least once. Buyers visited organic markets once to twice per week, some hotels in Vientiane bought organic products every day through a regular supplier. Buyers of organic products purchased mainly vegetables (all respondents), herbs and spices (66%) and fruits (42%). Half of them spent more than 3 Mn LAK per week. 67% bought organic products because they cared for their health. 25% of those who bought organic products were ready to pay 40% more than the current price.

43% of those who did not buy organic products explained that it was because the **price was too high**. 32% said that they **did not know where to find these products**, and 18% said that there was **no demand from their customers**. Other reasons included not being sure whether organic products were really organic or not; not being able to make the difference between organic and conventional products; conventional products look nicer; having a steady relationship with their suppliers; the lack of information about organic products; and limited supply of organic products (both in quantity and in terms of diversity)

6. Conclusion and discussion

In this study, we aimed to unveil the knowledge, perception and attitudes of consumers, traders and hotel/restaurant owners towards organic products in seven provinces of the Lao PDR. We showed that consumers of organic products were wealthier and more educated than those who did not –this result is in line with Roitner-Schobesberger *et al.* (2008) for Thailand. 76% of those who had heard of organic agriculture declared understanding its meaning. These respondents overwhelmingly praised organic agriculture for it benefits in terms of health, and believed that more information should be disseminated about this aspect should organic agriculture be promoted. The benefits for the environment were much less mentioned, and very few respondents were willing to obtain information about farming methods. Similarly, the main motives for consumers to buy (and for traders to sell) organic products were that they expected them to be safer and healthier. Better taste and long shelf-life were other attributes valued by the buyers of organic products.

These results highlighting the importance of health in the perception of organic agriculture simultaneously stress how incomplete/focused knowledge was: much fewer people mentioned the environment and only a handful established a link between farming methods, the environment and health. In our view, this link is an important aspect to focus in further promoting organic agriculture: while the most obvious entry point to convince consumers is health, it is also essential to promote a holistic understanding of organic agriculture – *i.e.* one that links together consumer and farmer health, the environment and the methods of production–, especially at a moment when several competing labels (*e.g.* GAP, clean, safe) promoting food safety and consumer health are being simultaneously supported by the government. The focus on production methods is especially important now as people are increasingly aware of the rapid changes occurring in the agriculture sector: traditional farming (that used to be practiced by a majority of household) is receding, and is progressively replaced by modern and more productive forms of agriculture that rely more heavily on chemical inputs and tend to disrupt the traditional link between the farmer and the consumer. In this perspective, focusing on the organic farmer (and on his practices) could be an important way to promote and to develop trust in organic agriculture, especially in urban areas where the link between food consumption and production is quickly fading away.

Finally, the main barriers to the purchase of organic products highlighted by the study were: (a) the *lack of information* about organic agriculture (definition, benefits, production methods, etc.); (b) the *limited availability* of organic products; and (c) *the lack of demand* (for traders and hotel and restaurant owners) for such products.

In terms of *information*, the low level of awareness revealed by the study stresses the need to inform the population more precisely about the meaning and benefits (for the farmer, the consumer, and the environment) of organic agriculture. In this process, an essential aspect to take into account is vocabulary. Indeed, there seems to be a great need to clarify and homogenize how “organic agriculture” can/should be referred to in Lao, as several expressions coexist (*bot san pit, insii*), which are not totally equivalent and were not all are equally understood by the respondents. The terms used to designate organic agriculture should therefore be further investigated and stabilized. In this process, it is quite important to make sure that people understand the difference between “organic” and “natural” products, as this confusion was quite frequently observed during the interviews –*e.g.,* the respondents often called organic products the same way as natural products (*pak ka dao, pak ka don*). It is equally important to make sure that people understand the difference between “organic” and other terms that may be used by competing labels –*e.g*., “clean”, “safe”, “chemical-free”, etc. Before launching any kind of campaign, it would be essential to organize few focus groups with consumers to understand better what people understand (or not) about the different expressions that are currently used for organic products (*insii, bot san pit*): what they mean, how different they are, how they are used and by who, etc.

The *lack of availability* of organic products at their usual market was a major reason why consumers and hotel/restaurant owners (especially luxury hotels) did not buy any organic products. This calls for a multiplication of organic food outlets, and to build and strengthen the link between hotels/restaurants willing to buy organic products and groups of farmers able to supply large volumes of organic products throughout the year. While the organic market in Vientiane now operates several times per week from two main locations, this finding suggests that it might be more efficient to open organic booths (selling only organic certified products) inside the most popular food markets to attract a wider clientele. Of course, this would require important investment in terms of logistics and organization from the farmers to enable them to sell on these other markets every day of the week.

Interestingly*, the price* was not a barrier to the purchase of organic products by individual consumers. The situation was different for traders and hotel/restaurant owners, as they were not convinced that there was a real demand for organic products, were sometimes discouraged by the price of organic products, and were doubtful (realistic?) about the willingness of consumers to pay more for organic products.

Finally, although a small percentage of respondents were aware of Lao organic standards, label and certification body, they seemed to trust the existing institutions. Overall, a majority of respondents were willing the government to be play an important role in guaranteeing the organic standard.

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8. Appendixes

8.1. Appendix 1 – Field Survey Report, (Chitpasong Kousonsavath, Maiyer Xong)

1. Southern Laos (Borikhamxay, Khammouane and Champassack)

1.1. Borikhamxay Province

Borikhamxay province is well known for corn, cassava production, and tobacco (Lao Tobacco Company has been promoting tobacco production in Borikhamxay for many years and as soil conditions are good for tobacco production). Two markets were selected in Bolikhamxay: the old market and the new market or Indo China market

The old market is located in the town of Borikhamxay. It is relatively smaller than the new market. This market is called an evening market, as it is open from 16.00 pm onwards. The products sold in this market are quite diverse (clothes, conventional fruits and vegetables, natural food products, cooked food and other household consumption goods). This market is famous for natural products and fish.

The new market or the Indo China market is bigger than the old market. Because the bus station is inside the market, it is a very busy market. The market opens all day, and the largest part of this market is the clothing and non-food product section. Very few shops (5) sell fruits and vegetables, in a section located at the back of the market. There are some natural food products sold in the evening but less than in the old market.

Nabo market was dropped due to its small size and location (on the road to Vientiane capital).

Table 1 – Allocation of respondents in Bolikhamxay Province

Name of the market	Type market	No. of Consumer	No. of retailers
New market	retail	35	10
Old market	retail	30	6
Total		65	16

Organic agriculture production in Borikhamxay province

Organic agriculture production has emerged in Borikhamxay province due to the promotion of the provincial authority. However, organic agriculture is still relatively small:

- the Syvilay group (Pakxam district)with around 20 families has started organic production over seven production plots;
- in Sysavath village (Borikan district), organic production is also still at an early stage (greenhouse construction);
- in Phamueng village another organic production group counts 50 households.

Due to the small volumes of organic products available, there is only one both for organic products at the Indo China market and none in the old market. Vegetables that are sold in Borikhamxay markets mainly come from the south and from Vientiane capital.

1.2. Khammouane province

Interviews were carried out in three markets: Lak 3 market, Lak 2 market and Nabo markets.

Lak 3 market is the largest market in Khammouane province. The market is divided into various sections such as: bus station, food court, agriculture section and non-agriculture section. The fresh fruit and vegetable section opens in the early morning (from 5.00 am to

11.00 am). The number of customers starts decreasing at around at around ten and sellers start packing up.

Lak 2 market is located not very far from Lak 3 market, people call this market the evening market because people come here to shop in the evening (4.00pm onwards). Many fresh food products are sold in this market –*e.g.,* fruits, vegetables, meat, fish, poultry and pork, traditional cooked food, clothes, jewelry.

Nabo market is a small market open in the evening. The products sold in this market are similar to those sold in Lak 2 (vegetables, fruits, meat, fish, pork, and clothes). Most consumers are people living around the market.

Table 2 – Allocation of respondents in Khammouane Province

Name of the market	Type of market	No of Consumer	No of retailers
Lak 3 market	wholesale and retail	30	12
Lak 2 market	retail	20	6
Nabo market	retail	18	3
Total		68	21

Organic agriculture production in Khammouane province

There is no organic vegetable production in Khammouane province (*Interview with agriculture office*). Most of the vegetables sold in the market come from various locations *e.g.*, from the south, from within the province (Huamuen village, Hangmueng, village, Nhongbok village) and from Thailand, Vietnam and China, especially when there is a shortage of supply within the province.

1.3. Champasack province

Three markets were covered by the survey: Daohueng market, Lak 8 market, Lak 14 market

Daohueng market is the largest market in Champasack province. The owner of the market is the well-known business woman, Mrs Daohueng the owner of DH coffee company. It is a whole day market but there are a lot more vegetables in the evening time. The market is located in city center and is divided into several sections such as: food court, meet section, vegetable, fruit, clothes, and jewelry.

Lak 8 market is located 7 km from city. Initially, it is a bus station but people turned some parts of the bus station into a fresh market. This is a very small market compared to DH and only people nearby come to shop at this market.

Lak 14 market was not initially on the list, but due to the small size of Lak 8 market, it was decided to add another market. Lak 14 market is located 14Km from city and a little bit bigger then Lak 8 market and has more products sold as well. The market is well known for wild food product such as: wild vegetables, frog, and fresh water fish.

Table 3 – Allocation of respondents in Champassack Province

Name of the market	Type of market	No of Consumers	No of retailers
Daohueng market	retail, whole sale	60	25
Lak 8 market	retail	15	
Lak 14 market	retail	18	
Total		93	25

Organic agricultural production in Champasack province

Champassack province is very well known for a specific place call Pakxong. Pakxong has very good soil conditions as it is a volcanic area. Due to the location and cool whether all year around, Pakxong produces a very good coffee, which is the major product of Champassack, is consumed within the country and exported to several international markets. The coffee has a reputation of the uniquely tasty coffee that makes it famous for many coffee drinkers.

Besides coffee, the province also produces and exports vegetables to overseas markets (Thailand, Germany, Sweden and France). Although export volumes are not significant, the province aims to increase production for overseas markets. There are is some organic agriculture in the province. Soil conditions in Pakxong are good for vegetable production.

The Laos-China vegetable production center aims to produce vegetables for markets within and outside the province. The center has over 20 greenhouses that are used to produce all year round. This center is also the main supplier during the raining season when other farmers cannot produce. According to the PAFO, the center received organic certification from the Ministry of Agriculture in Vientiane capital but some questions remain regarding for example the seeds used as they come from China where seed companies use chemicals to coat the seeds to protect them from insects.

The Adam seed company is a Thai company that has come to invest in Lao PDR. This company produces organic vegetables for the four-star hotels in Champasack such as the Aravanh Hotel. The company has received organic certification from the Ministry of Agriculture for tomatoes. The smallholder project is another project working on organic agriculture, with production sites in Nhongphai, Nhongsung and had village, but only Nhongphai group has received OA certification.

2. Vientiane capital

Vientiane capital is the last place for the field survey and the targeted respondents is 300 respondents.

There are many markets in Vientiane capital that are selling vegetables and there are also organic markets. The major sources of fruits and vegetable in Vientiane markets are coming from the southern part of Laos, Vientiane province, within the province and from neighboring countries such as: Thailand, Vietnam and China. The importation of fruits and vegetable is mainly for some types of fruits and vegetable that could not sources within the country and during the shortage of production and during high demand season like Lao New Year.

Table 4 – Allocation of respondents in Vientiane capital

Name of the market	Type of market	No of consumers	No of retailers
Huakhua	Retail	32	12
Vientiane organic market	Retail, specialty market	35	15
Kuadin	Retail	32	12
Thatluang	Wholesale and retail	32	12
105 market (Phonesavang)	Retail	32	12
Lao-Aussie market	Wholesale and retail	32	12
Total		195	75

3. Northern Laos (Vientiane Province, Luang Prabang, Xiengkhouang)

3.1. Vientiane Province

As an important part of Vientiane Province is mountainous, the province has four districts with flat land and seven districts with mostly mountainous land. Therefore, the cropping systems and animal husbandry vary according to the geography. The Province produces mainly maize, job's tears, sesame, cassava, rubber trees, vegetables and orangesn. Nevertheless, rice still remains the main crop grown by the farmers. Maize is an important commercial crop for the province, especially sweet corn which is promoted and purchased by the Lao Food Processing Company. Maize and vegetable are grown in the flat areas and along the rivers where irrigation is available. Rubber is dominant in the mountainous areas. Furthermore, Vientiane province is also well known for the oranges grown in Vangvieng and Kasy districts. The vegetable and herbs that are sold on the markets are produced mainly by local farmers, except some vegetables which are imported from Vientiane. Most fruits come from Vientiane and Thailand, and only some local fruits and oranges are produced by local farmers.

In Vientiane Province, four markets were surveyed: Thalad market, Phonhong market, Pongxong market and Vangvieng market.

The Thalad market is located in Keo-Oudom district near to Namgnum dam, this market also consists of a bus station. The market is relatively smaller than Phonghong and Vangvieng martkets. It is open all day but consumers prefer to shop mostly in the morning and evening. The market owner tried to extend the market place by constructing a huge building, unfortunately the construction was stopped due to a family problem. A variety of products are sold in this market –*e.g*., clothes, conventional fruits and vegetables, rice (raw and cooked), natural food products, cooked food and other household consumption goods. In addition, several restaurants serve food for passengers of the bus station.

The Phonhong market is located in Phonhong district, along the 13th northern road. The market opens all day, and a large part of this market is devoted to clothes and non-food products. However, the fresh market selling food products is bigger than the Thalad market. The same products as those sold in the Thalad market are sold here.

The Pongxong market is a very small market within around ten traders. It is located in Pongxong village, Hinhurt district (on the way to Vangvieng). Most of the consumers of this market are not local people, but people on their way between Vientiane and the north. This market sells only fruits and vegetables. Most of the vegetable sold here are gathered from the forests and the fields and are sold as natural products. This market also sells cassava chips which are a famous product from this village.

The Vangvieng market is located in Vangvieng district, on the 13th northern road. The market opens all day but most of the fresh vegetables are sold in the early morning, and a large part of this market is devoted to clothing and non-food products. The fresh market where food products are sold is bigger than the three other markets. A variety of products are sold in this market –***e.g***., clothes, conventional fruits and vegetables, rice (raw and cooked), natural food products, cooked food and other household consumption goods. This market is also well known for its oranges (product from Vangvieng and Kasy districts) sold between November and February.

Table 5 – Allocation of respondents in Vientiane Province

Name of the market	Type of the market	No of Consumers	No of retailers
Thalad market	retail	30	3
Phonhong market	retail	40	3
Pongxong market	retail	10	0
Vang vieng market	retail	40	3
Total		120	9

Note: 1 interview conducted with Mr. Phouva, the deputy director of Phonsung center (SME).

Organic agricultural production in Vientiane province

Organic production emerged in Vientiane province under the promotion of the provincial authorities. Vientiane province started with two projects promoting the organic rice production: Laos Grain Company limited (Hong Kong) and the Lao extension project (government project). Both projects are located in Thoulakhom district and cover a total of 11 hectares. They promote farmers to grow rice by using organic fertilizers. Organic rice production is still in a pilot phase, as this activity started in 2014, but aims to export organic rice to China after ASEAN Economic Community opens the border.

A few government projects support Good Agricultural Practices (GAP) such as one smallholder project and the Phonsoung development project. These projects initially started in Phonhong and Thoulakhom districts and were extended to Kasy and Sanakhame districts in 2014. They encourage farmers to produce GAPs by providing training and some necessary tools such as plastic covers. Most of the GAP products are sold at the local market and people know them as non-chemical food products (*pod sane phit*). Most of the surveyed markets however sell conventional products.

Phonsoung development project also started to encourage some families to grow organic food products, especially vegetables and local fruit trees. But they are not certified yet certify. In the future, this project aims to produce more organic food.

According to discussions with the provincial commerce and industrial department, the provincial agriculture and forestry office, and Phonsoung development project, the production of organic food product in the province has the following constraints and opportunities:

Constraints:

- lack of awareness of the producers and lack of concern about health issues,
- farmers have limit of knowledge and education,
- organic food production requires high investments,
- organic food production requires to comply to a specific standard (process and inspection),
- information transformation system still limited,
- consumer awareness on organic food is still limit, lack of understanding about the meaning and benefits of organic food,
- organic food price are equal to conventional food price (lack of incentives for farmers).

Opportunities:

- land is suitable for vegetables and fruits trees,
- markets are available, just how to make the consumers understand about organic,
- government takes into account and makes policies to support organic farming,
- natural resources are still abundant,
- farmers are almost organic by default (use little chemicals).

3.2. Luang Prabang Province

Luang Prabang is mostly mountainous and the commercial crops from this region are: job's tears, maize, Inca peanut stars, rubber, and non-timber-products such as broom grass, wild palm seeds, and wild tea. Job's tears is grown particularly in Nane district, in 2015 this crop cover over 8,000 hectares. Job's tears are lainly exported to China. Hard corn grown for animal feed is produced in Viengkham district on a total area of over 1,000 hectares. It is mainly exported to Vietnam and China.

Markets

The markets surveyed are: Thaheu me market, Naviengkham market and Organic market

Thaheu me is a small market locate near the night market of Luang Prabang. The name of the market (Tha heu) means port, because this market is near to the port for river ferries. It opens in the early morning (open from 5.00 am to 13.00 am). The market consists of small retailers along a walk path. The market sells mainly vegetables from local producers. Only two shops sell fruits.

Vaviengkham market is not very far from Thaheu me market (2 km). This market is much bigger and opens mainly in the evening (4.00pm onwards). A large part of this market is for clothes and non-food products. Nevertheless, many fresh food products are sold in this market (fruits, vegetables, meat, fish, poultry and pork, traditional cooked food, natural food products).

Organic market: there are two organic markets. The survey took place in the temporary organic market hosted by the Department of Agriculture and Forestry of Luang Prabang. This market opens on Wednesday and Saturday mornings only. Another organic market is located in Naluang village (near the southern bus station) 3-4 km away from the first one. The organic market is relatively small with around 15-20 retailers who mainly sell vegetables, herbs and some local fruit (banana, papaya and mango), according to the season.

Hotels

Five three-star hotels were chosen for interviews by the touristic service center of Luang Prabang: the Luang prabang In hotel, Manolak hotel, Jidchaleun hotel, Meuangthong hotel and Sada hotel.

Table 6 – Allocation of respondents in Luang prabang Province

Name of the market	Type of market	No of Consumers	No of retailers
Thaheu me market	retail	30	5
Naviengkham market	wholesale and retail	30	5
Organic market	retail	40	5
Total		100	15

Organic agricultural production in Luang Prabang Province

According to the discussion with the Provincial Agriculture and Forestry Office, organic production has been promoted by an extension project of the extension unit of the Provincial Agriculture and Forestry Department for 3 years. The project started with 230 families (in 5 districts) and a total area of 147 hectares. Today, 184 families participate to the project and use organic methods and 50 families are certified (half of them produce for the market and the rest still produce only for their own consumption). The organic food products that have been promoted are mainly local vegetables, herbs, beans and some local fruits.

The Department of Industry and Commerce agreed to fix a price for organic food products that is 50-60% higher than the price of conventional food products. However, as most consumers complain about the price, some products still sell at the same price as conventional products.

Constraints and opportunities to develop of organic food products

According to the discussion with the Department of Industry and Commerce and the Department of Agriculture and Forestry, organic food production in the province has good opportunities to develop, as well as several limitations.

Constraints:

- lack of collaboration between the Department of Agriculture and Forestry, which is responsible for extension and the Department of Industry and Commerce, which is responsible for marketing promotion,
- information about organic production is still limited,

- the capacity of organic food supply is still low (1,2 tons/day) compared to the demand of consumers (7 tons/day),
- awareness of organic agriculture by consumers is limited narrow.

Opportunities:

- Luang Prabang is a touristic town with many visitors who recognize organic agriculture and might be interesting by it,
- growing number of organic food producers (whom produce for trade),
- growing demand,
- existing demand for organic products by hotels/restaurants.

3.3. Xiengkhouang province

Xiengkhouang is a plateau high above the level of the sea. A large part of the province is grassland, which is suitable for ruminant husbandry. Therefore, the main agricultural activity of the province is cattle production, followed by maize plantation, rice, coffee, tea and vegetable production. The small chicken rice is a very famous variety of glutinous rice that comes from Xiengkhouang Province. It covers 11,500 hectares (total rice area is 20,000 hectares).

Markets

In this province, the following markets were surveyed: Phonsavanh (kaxikam) market, Namgnum market, Organic market (close to Chinese market)

Phonsavanh market: Phnosavanh market is one of the largest market in Xiengkhouang province, the market also well known as Kaxikam (agriculture) market as this market is very famous for agricultural food products. The market is located in city center and has divided into several sections such as: food court, meet section, vegetable, fruit, clothes, kitchen material and jewelry. The market opened whole day, the food products sold are very diverse as vegetable (especially local vegetable), herb, rice noodle, meat, fruits, and non-timber products. In addition, they sell animal living for food as well such as chicken and pig.

Namgnum market: the market is located 3 Km from city to the south west. The market divided into several sections as other market as well. But for the fresh food products court they opened only in the early morning from 5:00am to 9:00am and after that only a few retail inside the building continue to sell food products with more expensive. The food products sold are very diverse as vegetable (especially local vegetable), herb, rice noodle, rice, meat, fruits, and non-timber products. In addition, they sell animal living for food as well such as chicken and pig.

The organic market is locate in the city, less than one km from Phonsavanh market. The market used part of the Chinese market to sell organic products. The market is very small within 10 to 15 traders. The market opened since 6 years already and now it opened twice a week (Wednesday morning and Saturday morning). The food products sold are mostly local vegetable with some local fruits.

Table 7 – Allocation of respondents in Xieng Khouang Province

Name of the market	Type of the market	No of Consumers	No of retailers
Phonsavanh market	Wholesale and retail	30	3
Namgnum market	Wholesale and retail	30	3
Organic market	Retail	30	4
Total		90	10

The vegetables and herbs sold on the markets are produced mainly by local farmers, except some vegetables which come from Vientiane. Most fruits come from Vientiane and Thailand, and only some local fruits are produce by local farmers.

Organic production

The organic agriculture production has developed in Xiengkhuang province due to the promotion by the provincial authorities. Xiengkhouang started to promote organic food production since 2008. Nowadays, the number of organic producers is about 40-50 families and they produce mostly vegetable with some local fruits.

The small chicken rice of Xiengkhouang is almost organic. However, it is not certify and does not sell at a higher price. This kind of rice is exported to Vietnam at a conventional price but can increase its price through packaging and labeling (*Interview with head of agricultural extension section*).

Constraints and opportunities to the development of organic food products

According to the discussion with the provincial commerce and industrial department, the provincial agriculture and forestry, the production of organic food product in the province has many limitation and opportunities as well.

Constraints:

- Awareness of the producers, lack of understanding on organic food
- Farmers have limit of knowledge and education
- Organic food production request high investment, therefore farmers cannot produce in off season (raining season) which request the system of green house.
- Organic food production request a specific standard (process and inspection)
- Information transformation system still limit
- Consumers awareness on organic food still limit, they still not yet understand about the meaning and benefit of organic food.
- Organic food price remain same as conventional product, this make a lack of incentive for producers
- The land in Xiengkhouang is clay with a PH quiet low (4-4,2) which is need a high investment for soil improvement.

Opportunities:

- Most of the farmer used to farm with their traditional method which is based on nature (non or less use of chemical input)
- Local people has a basic tradition of vegetable farming
- The trend of demand has increased, numbers of consumers increase each year
- There is row material available, especially the manure from livestock
- Government also take into account and make policy to support the organic food products

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Altogether, 952 interviews were carried out throughout the country. The distribution of these interviews by province and by type of stakeholder is presented in Table 8. A total number of 105 consumers (14%) were interviewed in organic markets in Vientiane, Xiengkhuang and Luang Prabang.

Table 8– Allocation of respondents (whole survey)

	Consumers	Markets	Hotels & Restaurants	Total

Borikhamxay	65	16	-	81
Khammouane	68	21	-	89
Champassack	93	25	(5/5)10	128
Vientiane Capital	195	75	(15/15)30	300
Vientiane Province	120	9	-	129
Luang Prabang	100	15	(5/5)10	125
Xiengkhuang	90	10	-	100
Total	731	171	50	**952**

The data were entered manually into three separate databases using SPSS and further analyzed using SPSS and STATA (consumer survey).