MARKETS FOR MEGHRI

Armenia

Markets 4 Meghri

Inception phase
(January – September 2010)

Consumption Habits and Purchasing Behaviour Survey Report

Bern/Yerevan, June 2010

inter cooperation

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

This project is funded by SDC and implemented by Intercooperation and Shen.

Table of Contents

EXECUTIVE SUMMARY

The Swiss Agency for Development and Cooperation (SDC) launched in 2009 a new rural development project in Meghri region. It is implemented by Intercooperation and Shen. Horticulture is viewed as a key sector to focus on to generate sustainable and broad-based income for farmers/producers in Meghri.

To explore and understand the consumption habits and purchasing behaviours of fresh fruits and vegetables market in the Armenian market, the project commissioned a *Quantitative consumer survey* to 3R Strategy LLC (an Armenian consulting company). *The latter one* used face-to-face interviews with semi-standardised questionnaires covering 1,500 households (HHs) in 5 major urban centres: Yerevan, Gyumri, Vanadzor, Edjmiadzin and Hrazdan.

During the survey various aspects were assessed such as consumption *preferences of fruits and vegetables, seasonality of consumption, household food expenditures, factors affecting decisions to buy, place of purchase, perception of consumers about general development of horticulture sector* etc.

Results of the assessment are introduced by two major consumer groups, namely: HHs in Yerevan and other 4 regional towns to analyse whether there are peculiarities/differences between these two groups in terms of consumption habits, attitude towards fresh fruits and vegetables and other factors. At the same time, income level of the household surveyed was also taken into account.

Three major consumer groups per income level (in accordance with classification of the National Statistic Service/Government of Armenia) were analysed during the assessment:

- **"Extremely poor" HHs,** with income level per capita ***below extreme poverty line*** set at 17,232 AMD per month. Logically, this consumer group prefers to buy cheaper assortment of fruits and vegetables in relatively larger volumes.
- **«Poor» HHs,** with income level per capita ***below the poverty line*** set at 25,188 AMD per month. The picture is more or less the same with this group as in previous one: consumers of this category are sensitive to prices for fruits and vegetables they buy.
- «**Not poor» HHs,** comprise the group with income level per capita ***above the set poverty line***. This consumer group is differing from the above two by both: higher expenditures for buying fruits and vegetables per capita as well as consumption of better quality and wider assortment of fruits and vegetables all year around.

The Income of HHs is the major factor affecting consumers' behaviour towards fruit and vegetable consumption. ***HHs with low income consume more vegetables than fruits***, buying relatively larger volumes of vegetable varieties with higher nutrition value at a relatively lower price. Vegetables, especially during the peak season, appear to be one of the main components in the family daily diet. HHs with higher incomes (above the poverty line), prefer more expensive fruits and vegetables of higher quality and wider assortment being consumed throughout the whole year.

Yerevan based HHs comprise **73%** of those that **buy** fresh fruits from retail chains. At the same time Yerevan population consumes **76%** of fruits in terms of *consumption volumes* and **81%** in terms of *value*.

27% of fruit buying HHs assessed within the survey framework are living in 4 other regional towns. The share of this consumer group in terms of *consumption volumes* and *value* comprise **24%** and **19%** respectively.

The situation in fresh vegetables market is somewhat different. **27%** of HHs consuming fresh vegetables are concentrated in regional towns consuming **23%** and **29%** in terms of *volumes* and *value* of fresh vegetables respectively. **73%** HHs consuming fresh vegetables are based in Yerevan, their share in consumption of fresh vegetables comprise **77%** and **71%** in terms of *volumes* and *value* respectively.

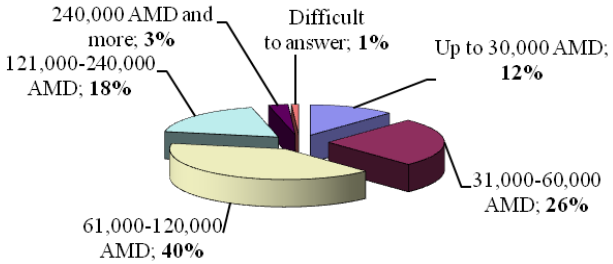
About two thirds of the fruits are bought and consumed during summer and autumn, when *retail chains offer a wide range of locally produced fruits at affordable prices.* Off-season, in winter and spring time, 34% of fruits is bought and consumed. 1/6 (or 16%) of fruits consumption in winter season is the share of Christmas holidays.

Three quarters of vegetable consumption occur in summer and autumn, when a wide assortment of locally produced vegetables is available in the retail chains at affordable prices. Off-season, in winter and spring seasons 12% and 15% of vegetables is consumed respectively.

One of the reasons for such a significant difference in consumption throughout seasons is that traditionally Armenian families buy large volumes of fruits and vegetables also for home-made preserves (both: fruits jams, sweet preserves, vegetable mixes, dried vegetables and fruits, etc.). Armenian cuisine traditionally includes a vast majority of meals with home-made preserved vegetables.

Urban HHs spend in average 89,780 AMD per month on food, though this indicator significantly differs from HH to HH. About **40%** of surveyed HHs allocate between *61,000* and *120,000 AMD* per month for food, **26%** of HHs spend 31,000 – 60,000 AMD and **18%** of HHs 121,000-240,000 AMD. **12%** of surveyed HHs spend up to 30,000 AMD and **3%**[1] only spend more than 240,000 AMD.

Graph 1. Average amount spent on food per month



Logically, food monthly budgets differ significantly amongst social groups: “extremely poor” households in average allocate for food **45,578 AMD** per month (SD 24,256 AMD), which is by 37% less than in the next group of “poor” with **62,598 AMD** (SD 34,951 AMD). Households with higher incomes spend on food in average **111,620 AMD** (SD 65,684 AMD) per month, which is 1.8-2.5 times more than other social groups.

[1] 1% of surveyed could not answer the question

Average monthly expenditures of HHs on fruits and vegetables purchase reach **19,742 AMD** and **16,113 AMD** respectively. The share of expenditures on fruits in the family's food budget in average is 22%, for vegetables it is 18%. In total, average expenditures on fruits and vegetables in the family's food budget comprise **40%**. While expenditures on vegetables through all the social groups comprise 18% of their food budget, the situation with fruits is slightly different: "very poor" group spends 19% and "poor" and "non-poor" groups – 22% of their food budget.

Table 1: Share of expenditures for fruits and vegetables in food budget by income groups

Social groups	Food budget (AMD/ month)	Expenditures on fruits (AMD/ month)	Expenditures on vegetables (AMD/ month)	Share of fruits in food budget	Share of Vegetables in food budget
Very Poor	45 578	8885	8247	19%	18%
Poor	62 598	13476	11262	22%	18%
Not Poor	111 620	24703	20002	22%	18%

The vast majority of Armenian consumers **prefer fruits typical for/grown in Armenia**, the absolute leaders amongst which are *apple (81% of HHs), apricot (63%), peach (44%)* and *grape (43%)*. The above top 4 most popular fruits typical for Armenia are followed by imported varieties such as: *tangerine, orange and banana* as indicated by approximately 1/3 of surveyed HHs.

The most preferred varieties of **vegetables** are *tomato* (indicated by 83% of HHs), *cucumber* (74%) and *potato* (again 74%) that are **grown in/ typical for Armenia**.

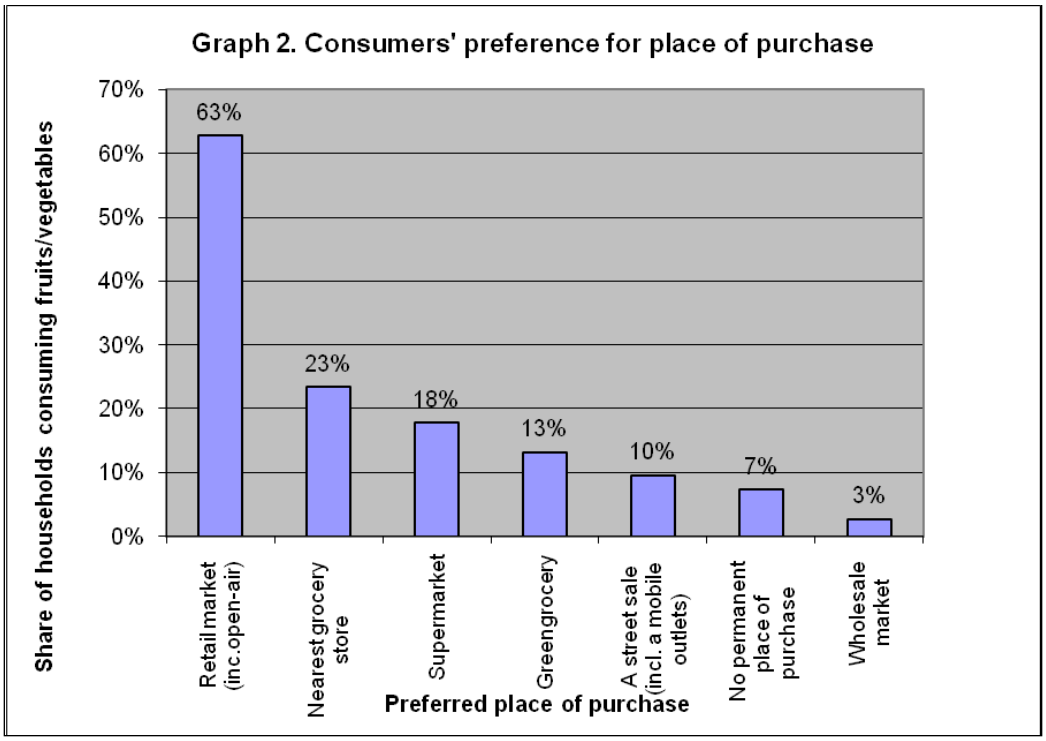
The lion's share of urban population/households in Armenia declared buying and consuming fresh *fruits* and *vegetables* (99.5% and 99.7% respectively). **Two thirds of the households** (66.7% and 69.7% respectively) have *fresh fruits* and *vegetables* in their **everyday** diet.

While the majority of surveyed urban HHs (82%) **buy** fresh fruits for family consumption (including both: buying and getting from own garden), 66% of HHs **only buy** fruits not having own garden and/or relatives/friends to receive fruits from.

In general fruit and vegetable trade in Armenia is performed through:

- Retail markets (including open-air markets);
- Grocery stores and supermarkets (with fruit and vegetable sections);
- Green groceries;
- Street sale outlets (including mobile ones);
- Wholesale markets (which usually have also retail sections).

63% of surveyed HHs mentioned retail markets as the main place of purchase of fruits and vegetables. Though nowadays retail sector is dynamically developing and other retail units appear, the above mentioned retail markets continue playing a significant role due to the following factors: *convenience* (for 49% of HHs), *price* (45% of HHs), *wide assortment* (25% of HHs), *freshness* of fruits and vegetables (13% of HHs).



The second most preferred place for fruit and vegetable purchase was mentioned to be the **nearest grocery store**. Reasons for preferring these stores are as follows: ***convenience*** (88% of HHs), ***price*** (16% of HHs) and ***freshness*** (13% of HHs).

In regional towns 33% of HHs prefer the nearest grocery stores in comparison to the 20% of HHs in Yerevan. This is mostly explained by the existence of a large number of **supermarkets** as an alternative to grocery stores in Yerevan (which is not in place in regional towns). Thus, 23% of Yerevan based HHs visit supermarkets for purchasing fruit and vegetable while in regional towns 2% of HHs only. Amongst reasons of buying fruits and vegetables from supermarkets 50% of HHs mentioned the *convenience* factor; about 20% - *freshness*; 18% - *cleanness and reasonable prices*.

Only 13% of surveyed households prefer to buy fruit and vegetable from specialised **green groceries**, which is mostly explained by the fact that those are not very popular and widely spread. ***Street sale outlets*** *are used by 10% of surveyed HHs*.

Decisions on purchase of fruits and vegetables by **HH**s are generally influenced by the following factors:

- **Freshness of fruit/vegetable**, which is usually interpreted as a synonym to the quality and is prioritised by a large number of HHs (74%);
- **Price** is in the second place amongst the discussed factors as indicated by 67% of HHs;
- **External look/appearance, colour** is also treated by consumers as a quality parameter, therefore, is prioritised by 44-46% of HHs;
- **Taste** is another important factor mentioned by 39-40% of surveyed HHs (and many of them complained that usually it is not possible to taste the product at the site before buying).

Armenian consumers in general are quite positive towards ***locally produced fruits and vegetables***. According to survey respondents, Armenian fruits and vegetables have advantages compared to imported ones such as:

- ***Taste***, 85% of surveyed HHs consider taste of local fruits and vegetables as a significant advantage compared to imported ones;
- ***Freshness***, about 1/3 of HHs freshness of Armenian fruits and vegetables is the obvious advantage compared to imported ones (that pass a longer way from producer to Armenian consumer);
- 29% of **HHs** are sure that locally produced fruits and vegetables are ***ecologically clean*** and safer than imported varieties.

Amongst fruits cultivated in Meghri area, the most known and preferred by surveyed HHs appeared to be ***pomegranate, fig*** and ***persimmon***.

45% of HHs consuming pomegranates prefer those from Meghri, which can be classified as the most known and preferred "brand name" in the local market of fresh fruits. *Figs from Meghri* are also well accepted and preferred by consumers. Thus, over 40% of fig consuming HHs highlighted that.

Except apple, consumption of the other mentioned varieties is rather seasonal (summer-autumn). Consumption of **figs** is taking place mainly during the harvest season (August-September). 44% of surveyed HHs consumes figs in autumn and 16% in winter seasons – in average 5.1-5.4 kg per season/quarter.

Pomegranate and **persimmon** are consumed mainly in autumn and winter (including Christmas holidays), since they cannot be stored for as long time as apples). In season persimmon is highly demanded by urban HHs: more than 2/3 of surveyed HHs buy it during autumn and winter consuming 10-13 kg per quarter. It is noteworthy, that 14% of HHs mentioned persimmon as the most preferred fruit. This group of consumers can be considered as the most loyal, which will assumingly buy persimmon if it is available in retail chain off-season.

Compared to persimmon, **pomegranate** is consumed less. 54% of surveyed HHs buy and consume pomegranate in autumn and 41% in winter, consuming in average 4.2-4.6 kg per quarter/season. There is a small segment of consumers (about 2-3% of HHs) that would buy and consume this fruit all year round if available in the retail chains. Pomegranate as the most preferred fruit was mentioned by 6% of surveyed HHs belonging to the social group with relatively high income that can afford buying this fruit more or less regularly (it is worth to note, that pomegranate is one of the most expensive fruits).

95% of surveyed HHs includes **walnuts** in their diet. If almost 100% of consumers with higher incomes can afford walnuts, in the groups of "poor" and "extremely poor" HHs 9% and 12% respectively had to exclude that from their food ration.

The majority of surveyed HHs (85%) consumes **sweet preserves**, **jams** (77%) and **dried fruits** (71%), which are traditional and very popular food products consumed quite intensively by Armenian families. **Frozen fruits and vegetables** are relatively new products in the Armenian market and only 24% of surveyed HHs mentioned of the consumption of such.

The most popular varieties of fruit preserves consumed by surveyed HHs are: ***cherry, apricot, raspberry*** and ***walnuts*****. Apricot jam** is the most preferred variety amongst jams (over 90%) consumed by HHs followed by *peach, plum* and *apple*. **Apricot** is a leader also amongst consumed dried fruits and

vegetables (over 90%) followed by *plum* (57%), *peach* (50%), *apple* (37%) and *fig* (23%). Amongst frozen fruits and vegetables, vegetables are far ahead, in particular: frozen *green bean, eggplant and pepper*.

Over 90% of surveyed HHs expressed their willingness to buy **organic fruits**. In the meantime, their *readiness to pay a premium* for organic products decreases dramatically with the increase in price. Thus only 11.6% of those 93.4% are ready to pay a **20%** premium and more, 16.1% of this group from **10% to 20%** and almost half (47.7%) **not more than 10%**. About 1/5 of these HHs are not ready to pay any premium for organic products.

Absence of **sorting and grading** was also not acknowledged any serious disadvantage: 66.5% of surveyed HHs is either not willing to pay more and/or has not decided. The rest of the group (33.5%), which is ready to pay extra, mainly consists of 26.5% of those who would pay **not more than 10%**.

About 1/3 of surveyed HHs mentioned that **increased incomes** will *stimulate the consumption of locally produced fruits and vegetables*, followed by 25% of HHs referring to **price reduction**. About 1/5 of HHs consider that consumption will not change (can be assumed that this segment is quite happy with existing situation). About 10% of HHs thinks that there is a potential to increase consumption volumes once the **quality** of local fruits and vegetables improves.

Over 40% of surveyed HHs believes that ***educational events for kids on usefulness of fruits and vegetables in schools*** are likely to influence HH consumption. TV commercials and in store promotion are acknowledged as effective for 26% and 25.1% of the interviewees respectively.

The most trusted source of information on fruits and vegetables is the word of mouth (with an average score of 3.7 rating the quality of information received from friends and relatives). Second come the producers/farmers.

Conducted field assessment, data processing and analysis allowed the research team to generate the following general ***findings/conclusions***, based on which corresponding actions/steps can be developed by the project team to expand market opportunities for products from Meghri:

- Armenian market of fruit and vegetables has a potential to grow. While about 60% of surveyed HHs belong to "not-poor" social group and consume as much fruits and vegetables as found necessary, the rest 40% of HHs can increase both: consumption volumes and varieties (throughout all seasons) once their income increases.
- Armenian consumers are quite ***conservative*** and in general the level of satisfaction with existing varieties and supply/availability of fruit and vegetables is rather high: almost 1/2 (or 44%) considers Armenian fruits as "very good"/with no disadvantages and over 90% of consumers had difficulties to name new varieties not available in the market nowadays.
- Amongst factors influencing purchase of fruit and vegetables the priority is given to ***freshness, price, external look/appearance*** and ***taste***. *Sorting, grading, packaging, labelling* and other factors are of significantly less importance to Armenian consumers.
- Varieties grown in Meghri are generally *known* and *well accepted* by Armenian consumers[2], though for instance ***persimmons*** can be promoted to substitute those imported from Georgia.
- Although in general the "geographic brand name" of Meghri region is known and well accepted, nevertheless proper promotion and actions **to raise visibility** of the source/origin (Meghri

[2] 45% of HHs consuming pomegranate, over 40% of fig consuming HHs and 27% of HHs consuming persimmons prefer those grown in Meghri

region) can help a lot to stimulate the sales of product from Meghri. (Often products from other regions are being promoted under Meghri "brand").

- There is a limited, but still a sizeable ***segment of consumers ready to pay extra price*** for added value of the product (e.g. sorting, grading, packaging, labelling, being organic etc.) At the same time, ***10%*** is the marginal increase in price that can be accepted while paying extra for the mentioned improvements.
- ***Retail chain development*** over the past decade almost eliminated the difficulties of finding and buying the preferred varieties of fruits and vegetables. Supermarkets and grocery stores continue capturing market shares from traditional retail markets (though the latter still remain number one "place of purchase"), greengroceries and street sale outlets.
- Factors valued the most by consumers while choosing "place of purchase" are as follows: ***convenience, assortment, price*** and ***freshness.***
- Most important factors for consuming fruits and vegetables are: ***usefulness, healthiness*** and ***taste***, therefore loyalty of Armenian consumers towards locally produced fruits and vegetables is based on the perception that they are *fresh*, *tasty* and *ecologically clean*.
- While assessing consumers' attitude towards the most effective promotion mechanisms of stimulating the consumption of fruits and vegetables, *"educational events on usefulness/healthiness of fruits and vegetables in schools"* was acknowledged as the leading one, followed at quite a distance by TV commercials and in-store promotion actions. As we can see, ***usefulness/healthiness*** is the key factor cross-cutting and highlighted in all the sections of the report.
- In the meantime mass media, state, internet and sales outlets/personnel are not considered to be such a reliable source of information about food product as ***friends/relatives*** ("word of mouth") and ***producers*** themselves. This is an important fact to consider while designing promotional strategies and related project interventions.

1. INTRODUCTION AND METHODOLOGY

The Swiss Agency for Development and Cooperation (SDC) launched a new rural development project in Meghri region in 2009. It is implemented by Intercooperation and Shen. Horticulture is viewed as a key sector to focus on to generate sustainable and broad-based income for farmers/producers in Meghri.

To explore and understand purchasing behaviour and preferences of final consumers representing the major strata of Armenian fresh fruits and vegetables market desk research/secondary data collection and review was done to gather the basic information on Armenian fresh fruits and vegetables market and used while developing questionnaire for primary research, designing sample as well as further data verification. *Quantitative consumer survey* followed desk research using face-to-face (in-home) interviews with developed and tested semi-standardised questionnaire.

Quantitative survey included 5 largest cities/urban centres of Armenia, namely: Yerevan, Gyumri, Vanadzor, Edjmiadzin and Hrazdan. 1,500 households in total were interviewed. The sample was distributed through the mentioned 5 cities proportionally to assure appropriate level of representativeness. Sampling error for the whole sample comprised 2.53%.

Sampling error of Yerevan random sample comprised 2.92%, while for other 4 cities – 5.1%, which excesses acceptable ratio by 0.1%. To reduce the latter indicator, the whole sample was redistributed by the mentioned 5 cities. Thus, for Yerevan random sample, sampling error comprised 2.95% and for the rest 4 cities – 4.9%. Yerevan random sample was distributed through 12 Yerevan communities proportionally too.

Table 2: Sample distribution through the cities

City	Share (%) in total sample	Number of interviews
Yerevan	73	1100
Gyumri	11	160
Vanadzor	8	120
Edjmiadzin	4	60
Hrazdan	4	60
TOTAL	100	1500

The sample was formed using the random sample method based on the distribution of urban population in Yerevan and 4 major cities, which means that streets were selected through preliminarily developed steps/intervals (3-4 streets in each community), corresponding buildings on each street (step 3) and accordingly apartments in each selected building (in Yerevan the step was 5, in other cities 3). Interviews were conducted with the family/household member responsible for procurement of goods.

During the assessment, industry experts (list is attached in Annex 1) were approached while designing questionnaires, testing and analysing survey findings and conclusions and discussing those. Experts' opinions were taken into account also during the report elaboration stage.

2. HOUSEHOLD TYPOLOGIES AND CHARACTERISTICS OF FRESH FRUIT AND VEGETABLE CONSUMPTION

2.1 Classification of consumer groups by geography and income level of the inhabitants

Fresh fruits market: As mentioned, the survey covered urban population of Yerevan and the 4 largest regional towns of Armenia as a consumer group of fresh fruits and vegetables. 71% of total urban population of Armenia inhabit in those 5 cities, 75% of which lives in Yerevan. The results of the assessment are introduced by two major consumer groups, namely: HHs in Yerevan and those in the remaining 4 regional towns to analyse whether there are peculiarities/differences between these two groups in terms of consumption habits, attitude towards fresh fruits and vegetables and other factors.

It is worthy mentioning, that there is *a clear difference between these two consumer groups in terms of consumption volumes*. Thus, Yerevan based HHs comprise 73% of those that **buy** fresh fruits from retail chain contributing **76%** in terms of *consumption volumes* and **81%** in terms of *value*.

27% of surveyed HHs purchasing fruits lives in the 4 regional towns. The share of this consumer group in terms of *consumption volumes* and *value* comprise **24%** and **19%** respectively.

Survey results show that Yerevan fresh fruit market is significantly bigger than the one of regional towns not only by the size of population but also consumption volumes per capita (see section 2.2). Yerevan based HHs spend more money on fresh fruits preferring wider assortment of fruits and buying those all year around.

Table 3: Fruits Market: Volumes purchased (seasons and city disaggregated)

	Yerevan	Other urban areas	Total
Number of HHs purchasing fruits	1091	398	1489
Share of HHs purchasing fruits	73%	27%	100%
Market share in AMD	81%	19%	100%
Market share in kg.	76%	24%	100%
Spring (kg.)	13,6%	3,3%	17%
Summer (kg.)	26,3%	10,6%	37%
Autumn (kg.)	21,7%	7,5%	29%
Winter (kg.)	11,9%	2,2%	14%
Christmas holidays (kg.)	2,0%	0,7%	3%

Consumer groups per income level are as follows:

- **"Extremely poor" HHs,** with income level per capita below extreme poverty line[3]. **16%** of HHs purchasing fruit belong to this **"extremely poor"** social category, which accounts 11% and 7.3% of fresh fruits consumption volumes and value respectively in total of urban HHs. Logically, this consumer group prefers to buy cheaper assortment of fruits in relatively larger volumes.
- **"Poor" HHs** comprise the group with income level per capita below the poverty line. The picture is more or less the same with this group as in the previous one. **24%** of fruit buying HHs

[3] As extremely poor and poor indicators the ones officially published by the NSS of RA in 2008 were used, according to which extreme poverty and poverty lines were 17,232 AMD and 25,188 AMD per capita respectively.

belonging to this group account **20%** of fruit consumption in terms of volumes and **16%** in terms of value.

- **"Not poor" HHs** comprise the group with income level per capita above the set poverty line. **60%** HHs purchasing fruit are representatives of this group, naturally the largest consumer of fruits: **68%** in terms of volumes and **76%** in terms of value. This consumer group differs from the above two by both: higher expenditures on fruits per capita as well as consumption of better quality and wider assortment of fruits all year around.

Table 4: Fruit Market: Volumes purchased (season and social groups disaggregated)*

	Extremely Poor	Poor	Not poor	Total
Share of consumer group	16%	24%	60%	100%
Market share in AMD	7,3%	16,4%	76,3%	100%
Market share in kg.	11,3%	20,5%	68,2%	100%
Spring (kg.)	1,61%	3,36%	11,76%	17%
Summer (kg.)	4,59%	8,00%	24,59%	37%
Autumn (kg.)	3,63%	6,11%	19,57%	29%
Winter (kg.)	1,17%	2,40%	10,40%	14%
Christmas holidays (kg.)	0,32%	0,59%	1,89%	3%

*Data on 97 households is not available

Fresh vegetables market: The situation in fresh vegetables market is somewhat different. **27%** of HHs purchasing fresh vegetables is concentrated in regional towns consuming **23%** and **29%** in terms of *volumes* and *value* of fresh vegetables respectively. **73%** of HHs purchasing fresh vegetables are based in Yerevan, their share in consumption of fresh vegetables comprise **77%** and **71%** in terms of *volumes* and *value* respectively.

Compared to fruits, the trend here is different: households in regional towns consume more vegetables per capita than in Yerevan, in the meantime preferring relatively cheaper varieties of vegetables.

Table 5: Vegetables market: Purchase volumes by seasons & cities

	Yerevan	Other urban areas	Total
Number of HHs purchasing vegetables	1093	397	1490
Share of HHs purchasing vegetables	73%	27%	100%
Market share in AMD	77%	23%	100%
Market share in kg.	71%	29%	100%
Spring (kg.)	12,5%	3,0%	15%
Summer (kg.)	25,4%	10,3%	36%
Autumn (kg.)	22,8%	14,1%	37%
Winter (kg.)	9,6%	1,6%	11%
Christmas holidays (kg.)	0,6%	0,1%	1%

As mentioned previously in the report, income level of HHs is the major factor affecting consumers' behaviour. Classification of vegetable consumer groups per income level and consumption share is presented in Table 6 below.

In general, the picture is similar here to that of fruits with but one peculiarity: **HHs with low income consume more vegetables than fruits**, buying relatively larger volumes of vegetables varieties with

higher nutrition value at a low price. It is worthy mentioning, that vegetables, especially during the high season, appear to be one of the main food product in the family daily diet.

HHs with higher incomes (above the poverty line) prefers more expensive vegetables of higher quality and wider assortment being consumed throughout the whole year.

Table 6: Vegetables market: Purchase volumes by seasons & social groups*

	Extremely Poor	Poor	Not poor	Total
Share of consumer	16%	24%	60%	100%
Market share in AMD	8%	17%	75%	100%
Market share in kg.	13%	21%	66%	100%
Spring (kg.)	1,5%	3,0%	10,7%	15%
Summer (kg.)	4,6%	7,8%	23,6%	36%
Autumn (kg.)	5,7%	7,8%	23,6%	37%
Winter (kg.)	1,1%	2,1%	7,8%	11%
Christmas holidays (kg.)	0,1%	0,1%	0,5%	1%

*Data on 100 households is not available

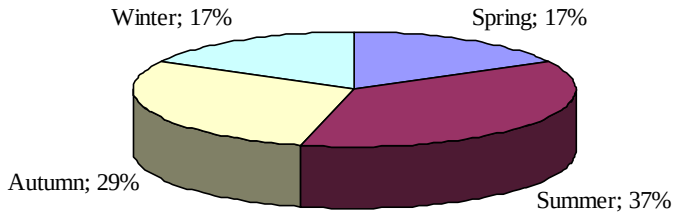
2.2 Average consumption volumes and seasonality

2.2.1 Average volumes of fruits consumption and seasonality

This section of the report discusses seasonality and average consumption volumes[4] of fruits. More than half (or 66%) of fruits is bought and consumed during summer and autumn seasons, when retail chains offer wide varieties of locally produced fruits at affordable prices. Off-season, in winter and spring time, 34% of fruits is bought and consumed. 1/6 (or 16%) of fruits consumption in winter season is the share of Christmas holidays.

[4] Considering the fact that share of fruits and vegetables "not purchased" but received from own gardens and/or friends/relatives is rather insignificant in total households consumption, and the market focus of Meghri Rural Development Project, survey team put major emphasis on purchased part.

Graph 3. Fruits purchase volumes (kg.) by season



Tables 7 and 8 below reflect the seasonality aspect of fruits consumption by different social groups through the cities surveyed. Tables 2.1 and 2.2 (presented in Annex 2) show average volumes of fruits per HH bought throughout seasons of the year.

Table 7: Seasonality of fruits purchase/consumption in urban areas of RA

Season	Share of households purchasing fruits,%		
	Yerevan	Other urban areas	Total
Spring	98%	97%	98%
Summer	97%	98%	97%
Autumn	98%	98%	98%
Winter	98%	89%	95%
Christmas Holidays	95%	97%	96%
Total N of households purchasing fruits	**1091**	**398**	**1489**

Table 8: Seasonality of fruits purchase/consumption per social group*

Season	Share of households purchasing fruits,%		
	Extremely Poor	Poor	Not-Poor
Spring	95%	97%	98%
Summer	96%	98%	97%
Autumn	96%	98%	98%
Winter	87%	94%	98%
Christmas Holidays	95%	94%	97%
Total N of households purchasing fruits	228	335	853

*No data on household income is available for 74 cases

The results of the survey show, that fruits are bought by almost 100% of urban population **regardless of the season**. The main season for locally produced fruits in Armenia lasts about 6 months: from May to October. During this period, a wide range of locally produced fruits is available and affordable for all strata of Armenian population. Off-season (November-April), mostly imported fruits and a limited number of Armenian ones (stored in cool storage facilities) are available in the market. During this period of the year, ***apple*** is the most affordable variety amongst locally produced fruits.

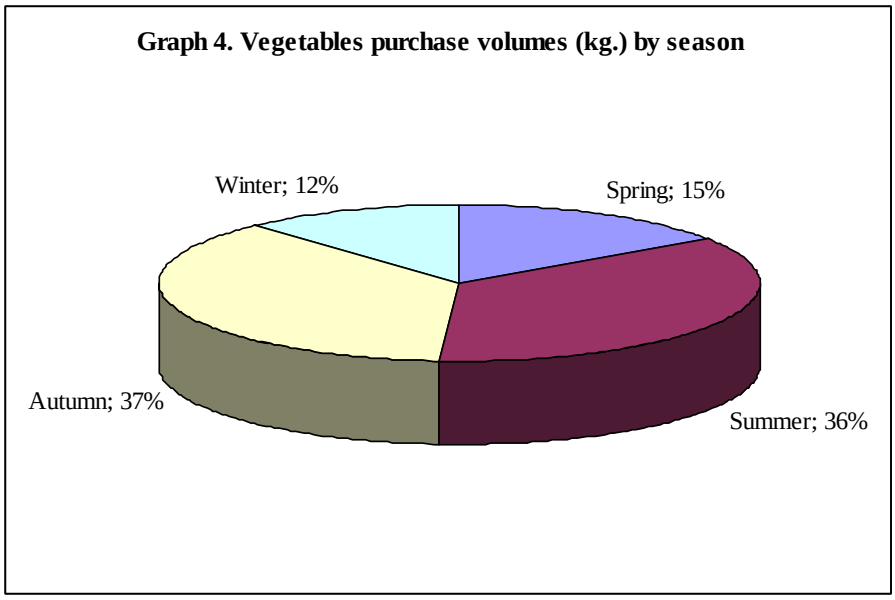
Though a wide assortment of fruits is available in retail chain all year round, ***volumes and assortment of fruits*** bought by HHs are changing significantly mostly dependant on prices. In the meantime, during the survey it became clear, that the majority of surveyed HHs buys and consumes fruits all year round regardless of the level of income. Seasonality does not affect the fact of buying fruits itself but volumes and assortment as mentioned.

Thus, 96-98% of **"poor"** and **"extremely poor"** HHs buy fruits in season and 87-94% continue purchasing even off-season (these figures do not include Christmas holidays purchases, they are discussed separately). Seasonality factor does not affect HHs with **higher income** at all: 97-98% of HHs belonging to this group **buys fruits all year round**. Seasonality is relatively stronger reflected in regional towns, where 98% of HHs buy fruits in season and only 89% - off-season as well.

In the meantime, as mentioned previously, **seasonality affects volumes of fruits purchased** rather significantly. Thus, if in season the average monthly consumption volume is 14-17.5 kg per capita, this figure goes down as low as 6.8-7.8 kg per capita off-season. Consumption per capita depending on season is different in Yerevan and in the regional towns. While average consumption volumes per capita in season in Yerevan and regional towns are almost the same (and in summer consumption is higher by 9% in regional towns), *Yerevan based HHs consume 1.6-1.7 times more than those in regional towns off-season*. There is an obvious interrelation between consumption volumes and the level of income of the HH. *HHs with higher incomes in average buy and consume 2 times more fruits per capita in season and 2.7 times more off-season compared to HHs with low incomes*.

2.2.2 Average volumes of vegetables consumption and seasonality

More than half of vegetables (or 73% of total) is consumed by surveyed HHs during summer and autumn seasons, when a wide assortment of locally produced vegetables is available in the retail chain at affordable prices. Off-season, in winter and spring 12% and 15% is consumed respectively.



Tables 9 and 10 below reflect the seasonality aspect of vegetable consumption through the cities surveyed. Tables 2.3 and 2.4 (presented in Annex 2) show the seasonality of vegetable consumption by HHs and consumption volumes per capita by different groups.

Table 9: Seasonality of vegetables purchase/consumption in urban areas of RA

Season	Share of households purchasing vegetables,%		
	Yerevan	Other urban areas	Total
Spring	98%	97%	98%
Summer	99%	97%	99%
Autumn	99%	98%	99%
Winter	96%	67%	88%
Christmas Holidays	87%	57%	79%
Total N of households purchasing vegetables	**1093**	**397**	**1490**

Table 10: Seasonality of vegetables purchase/consumption per social groups*

Season	Share of households purchasing vegetables,%		
	Extremely Poor	Poor	Not-Poor
Spring	95%	97%	98%
Summer	99%	99%	98%
Autumn	98%	100%	98%
Winter	74%	84%	92%
Christmas Holidays	61%	72%	85%
Total N of households purchasing vegetables	**228**	**335**	**853**

*No data on household income is available for 74 cases

According to the survey results, 98-99% of urban HHs buy and consume vegetables in spring, summer and autumn and 88% - in winter as well. Average monthly consumption of vegetables comprises 12.5 kg

per capita, which goes up as high as 18.5 kg in season (summer-autumn) and down off-season (winter-spring) almost 3 times.

Seasonality is less affecting consumption of vegetables amongst HHs in Yerevan compared to regional towns. *Thus, while 96% of Yerevan based HHs consume vegetables in winter as well, in regional towns the share of those HHs is 67% only.*

At the same time, in season, HHs in regional towns consume more vegetables than those based in Yerevan, which is mostly explained by low prices for vegetables. Low prices of vegetables in season allow HHs with low incomes to replace some other food products (e.g. meat) with vegetables. Off-season, in winter and spring, consumption of vegetables per capita in general goes down: about 2 times in Yerevan and 4 times in regional towns.

Survey results show a direct interrelation between the level of income and consumption volumes and seasonality. Increase in HHs incomes leads to both: increase in consumption of vegetables off-season and volumes in general.

2.2.3 Consumption volumes of preferred fruits by seasons

In table 11 below figures on consumption of preferred fruits are shown such as: the share of HHs preferring particular fruit, consumption volumes through different seasons. Consumers' attitude towards fruit varieties grown in Meghri area, namely: **apples**, **fig**, **persimmon**, **pomegranate,** is introduced in Section 4.2 of this report.

Consumption of different fruits in urban areas of RA is rather seasonal mostly depending on available varieties in retail chain and prices. Survey results show, that *apple* is the only fruit which is consumed by HHs in almost the same quantities all year around. 89% of surveyed HHs consumes apple throughout all seasons of the year and consumption from season to season varies from the lowest 21.0 kg (in summer) to highest 30.7 kg (winter). Relatively stable consumption (less seasonal) was observed also with some imported varieties such as:

- *Banana* is consumed throughout all the seasons by 1/4 of HHs and the average consumption per season varies between 6.7 kg (in summer) and 8.7 kg (in winter).
- *Lemon*, though this fruit was mostly preferred by about 5% of HHs only, the group of consumers of the latter is rather loyal consuming from 3.7 kg to 4.7 kg per HH throughout all the seasons.
- Another, very small but loyal, group of HHs consumes kiwi all year around: from 3.2 kg during summer season to 4.9 kg in autumn.

The rest top preferred fruits, namely: apricot, peach and grape are consumed in season mostly:

- The lion's share of HHs (62%) consumes *apricots* in season (in summer) in rather significant quantities – 54.5 kg in average per season. Before the season (in spring) and after (in autumn), one can find apricots in retail chain at very expensive prices and 5.8% and 4% of HHs respectively still buy apricots that time though in quantities twice less than in season.
- The same picture can be observed in case of *peach*: in summer and autumn seasons 32% and 35% of HHs consume in average 24 kg and 27 kg respectively in season.
- Grape season starts late in summer, when 21% of HHs consume in average 19.5 kg, and reaches its peak in autumn, when 41% of HHs consume grapes the most (27 kg during the whole season). In the meantime, grapes are normally stored and are available in the market in winter season (including Christmas holidays) as well. 15% of HHs continue buying and consuming

grapes in winter though at higher price and in smaller quantities (about 11kg through the season).

Off-season, when most of Armenian fruits are not available, about 1/3 of HHs prefer buying and consuming imported fruits: *banana, orange* and *tangerine*. Normally, these imported varieties are more expensive than traditional Armenian ones therefore average consumption volumes of those are lower: bananas – 8.7 kg, orange – 11.5 kg and tangerine – 17 kg (the most affordable variety of these three).

Table 11: Average consumption of fruits per household through the seasons

Variety of fruit	Spring		Summer		Autumn		Winter	
	% of HHs*	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)	% of HHs *	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)
Apricot	5.8%	15.9	62.2%	54.53	4.0%	24.6	0.1%	10.0
Peach	0.3%	15.2	31.9%	24.23	35.2%	27.4	0.7%	14.6
Quince	0.0%	0.0	0.2%	5.67	1.1%	8.9	0.0%	0.0
Pear	4.4%	10.2	12.0%	10.44	16.4%	12.6	8.0%	10.6
Plum	0.6%	14.4	5.5%	15.68	3.4%	14.4	0.0%	0.0
Cherry	2.5%	9.8	7.4%	14.99	0.3%	20.8	0.1%	6.0
Sweet cherry	4.0%	13.3	10.9%	24.05	0.7%	12.3	0.1%	3.0
Grapes	3.4%	10.0	21.0%	19.43	41.7%	27.2	14.9%	11.8
Bananas	29.5%	7.4	24.4%	6.69	28.9%	7.7	32.6%	8.7
Orange	8.8%	6.5	3.6%	7.50	21.2%	9.3	33.4%	11.5
Tangerine	3.9%	8.4	0.9%	7.92	20.9%	11.5	33.6%	16.9
Lemon	4.8%	4.1	4.7%	3.74	5.0%	4.3	5.3%	4.7
Kiwi	2.4%	3.3	1.7%	3.2	2.9%	4.9	4.2%	4.8
Pineapple	0.3%	9.3	0.2%	18.33	0.5%	11.7	0.6%	7.2
Grapefruit	0.3%	5.3	0.3%	3.75	0.5%	6.1	1.3%	7.0
Other (mulberry, guava, mango, papaya etc.)	0.3%	9.3	0.5%	14.50	0.4%	10.4	0.4%	8.9

* Of households consuming fruits

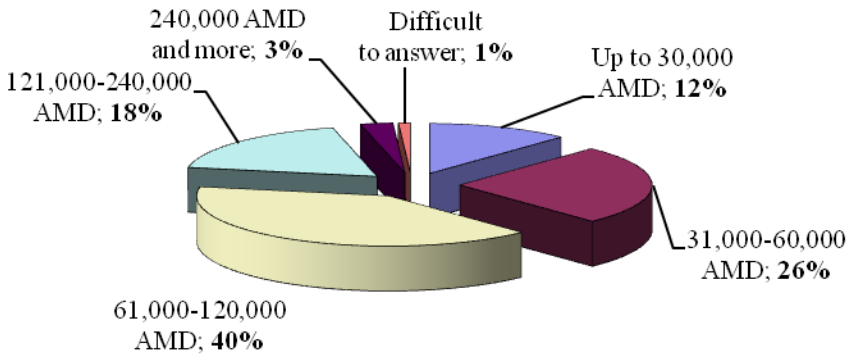
2.3 Average expenditures on fresh fruits and vegetables

2.3.1 HH expenditures on food

Urban HHs spend in average 89,780 AMD per month on food, though this indicator significantly differs from HH to HH (the standard deviation is 62,051 AMD). About 40% of surveyed HHs allocate between 61,000 and 120,000 AMD per month to buy food, 1/4 of HHs spend 31,000 – 60,000 AMD and 1/5 of

HHs spend 121,000-240,000 AMD. 12% of surveyed HHs spend up to 30,000 AMD and 3% only spend more than 240,000 AMD.

Graph 5. Average amount spent on food per month



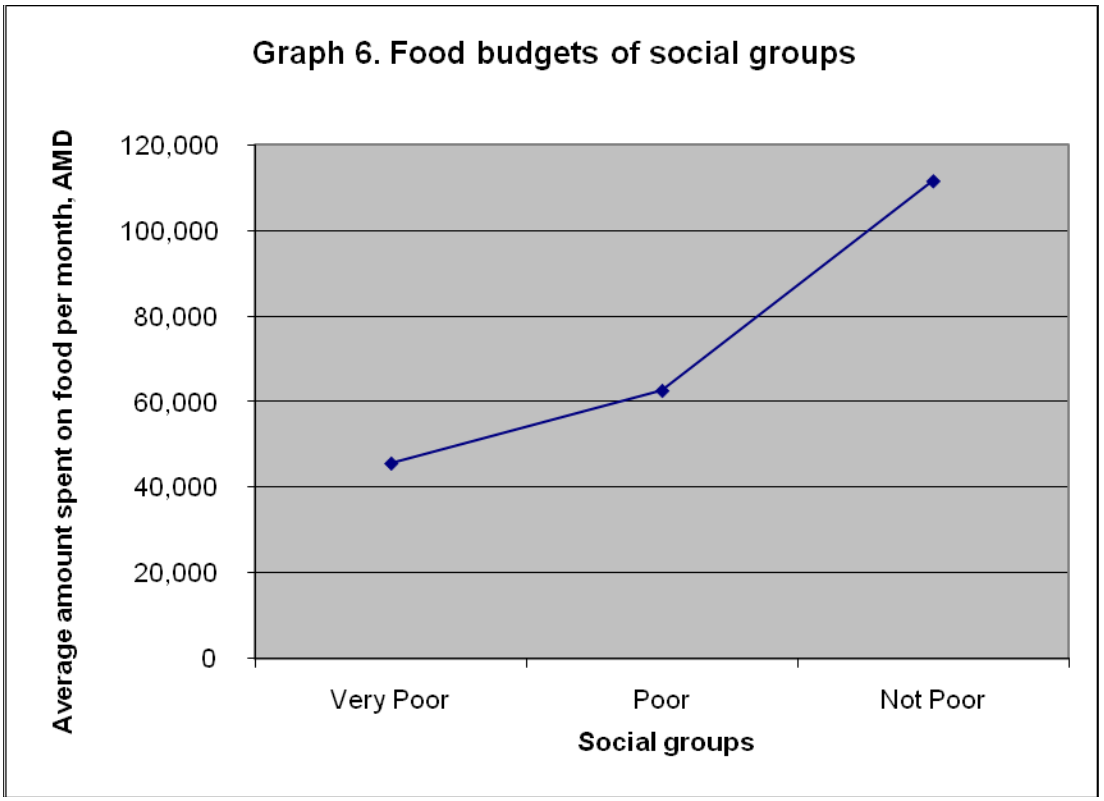
There is a significant difference in budgets allocated for food by HHs based in Yerevan and those in regional towns: 97,652 AMD (SD[5] 64,922 AMD) is the average monthly budget for food in Yerevan and some 30% less - 68,197 AMD (SD 47,131 AMD) in regional towns.

Table 12: Food budgets of urban HHs

AMD/Month		Spring	Summer	Autumn	Winter	All seasons
Yerevan	Mean	96,938	99,667	99,026	94,978	97,652
	Std. Deviation	65,852	66,921	65,800	68,116	64,922
Other Urban areas	Mean	66,028	72,025	74,165	60,571	68,197
	Std. Deviation	47,630	50,350	51,295	46,910	47,131
Total	Mean	88,677	92,280	92,382	85,783	89,780
	Std. Deviation	63,002	64,084	63,204	64,946	62,051

Logically, food monthly budgets differ significantly amongst social groups: “extremely poor” households in average allocate for food 45,578 AMD per month (SD 24,256 AMD), which is by 37% less than in the next group of “poor” with 62,598 AMD (SD 34,951 AMD). Households with higher incomes spend on food in average 111,620 AMD (SD 65,684 AMD) per month, which is 1.8-2.5 times more than other social groups.

[5] standard deviation



In Tables 12 and 13 HHs average monthly expenditures on food through different seasons are discussed. Surveyed HHs spend relatively more on food during summer and autumn seasons compared to winter and spring (when they have to allocate substantial part of their monthly income for utilities: heating, electricity etc).

Table 13: Food budgets of social groups

AMD/Month		Spring	Summer	Autumn	Winter	All seasons
Extremely Poor	Mean	43,987	47,391	49,138	41,797	45,578
	Std. Deviation	24,387	26,503	27,521	29,530	24,256
Poor	Mean	62,036	65,390	65,746	57,220	62,598
	Std. Deviation	35,212	37,934	39,104	34,021	34,951
Not Poor	Mean	110,291	114,364	113,955	107,873	111,620
	Std. Deviation	66,959	67,952	67,179	69,180	65,684

2.3.2 HH expenditures on fruits and vegetables

Tables 14-17 below introduce the average monthly expenditures of surveyed HHs on fruits and vegetables throughout different seasons.

Average monthly expenditures of HHs on fruits and vegetables are 19,742 AMD and 16,113 AMD respectively. The share of expenditures on fruits in the family food budget is 22%, the one for vegetables is 18%. In total, average share of expenditures on fruits and vegetables in the family food budget is 40%.

While HHs based in Yerevan allocate more funds for purchasing fruits (22% of food budget) compared to vegetables (17% of food budget), in other regional towns the picture is different: 21% of food budget is spent on fruits and 20% - on vegetables.

The amounts spent on fruits and vegetables vary amongst HHs belonging to different social groups. Thus, groups with low income ("poor" and "extremely poor") spend in average 8,247-11,262 AMD per month on vegetables and 8,885-13,476 AMD on fruits. HHs with higher income spend on fruits and vegetables twice more (20,000 – 24,700 AMD). While expenditures on vegetables through all the social groups comprise 18% of their food budget, the situation in fruits is slightly different: the "very poor" group spends 19% and "poor" and "non-poor" groups – 22% of their food budget.

Table 14: Expenditures on fresh fruits per household

AMD/Month		Spring	Summer	Autumn	Winter*	All seasons
Yerevan	Mean	15,041	20,001	19,702	13,895	21,764
	Std. Deviation	14,160	16,742	16,733	14,424	20,244
Other Urban areas	Mean	11,337	17,413	20,900	10,078	14,195
	Std. Deviation	12,204	15,915	19,308	11,230	12,496
Total	Mean	14,094	19,321	20,018	13,105	19,742
	Std. Deviation	13,777	16,563	17,450	13,906	18,792

*Expenditures for Christmas holidays are not included.

Table 15: Expenditures on fresh vegetables per household

AMD/Month		Spring	Summer	Autumn	Winter*	All seasons
Yerevan	Mean	20,151	25,131	24,031	19,414	16,910
	Std. Deviation	19,831	22,897	21,223	21,389	14,261
Other Urban areas	Mean	12,281	18,872	16,393	11,391	13,897
	Std. Deviation	12,428	16,098	14,611	12,778	12,729
Total	Mean	18,069	23,451	21,991	17,412	16,113
	Std. Deviation	18,493	21,461	19,959	19,898	13,931

*Expenditures for Christmas holidays are not included.

Table 16: Expenditures on fresh fruits per household by social groups

AMD/Month		Spring	Summer	Autumn	Winter*	All seasons
Extremely Poor	Mean	7,844	11,305	10,828	7,653	8,885
	Std. Deviation	7,274	9,010	9,403	7,235	7,608
Poor	Mean	11,864	16,819	15,466	11,103	13,476
	Std. Deviation	11,186	13,021	12,780	11,537	10,764
Not Poor	Mean	22,686	28,973	27,080	21,668	24,703
	Std. Deviation	19,589	22,711	21,517	20,172	19,700

*Expenditures for Christmas holidays are not included.

Table 17: Expenditures on fresh vegetables per household by social groups

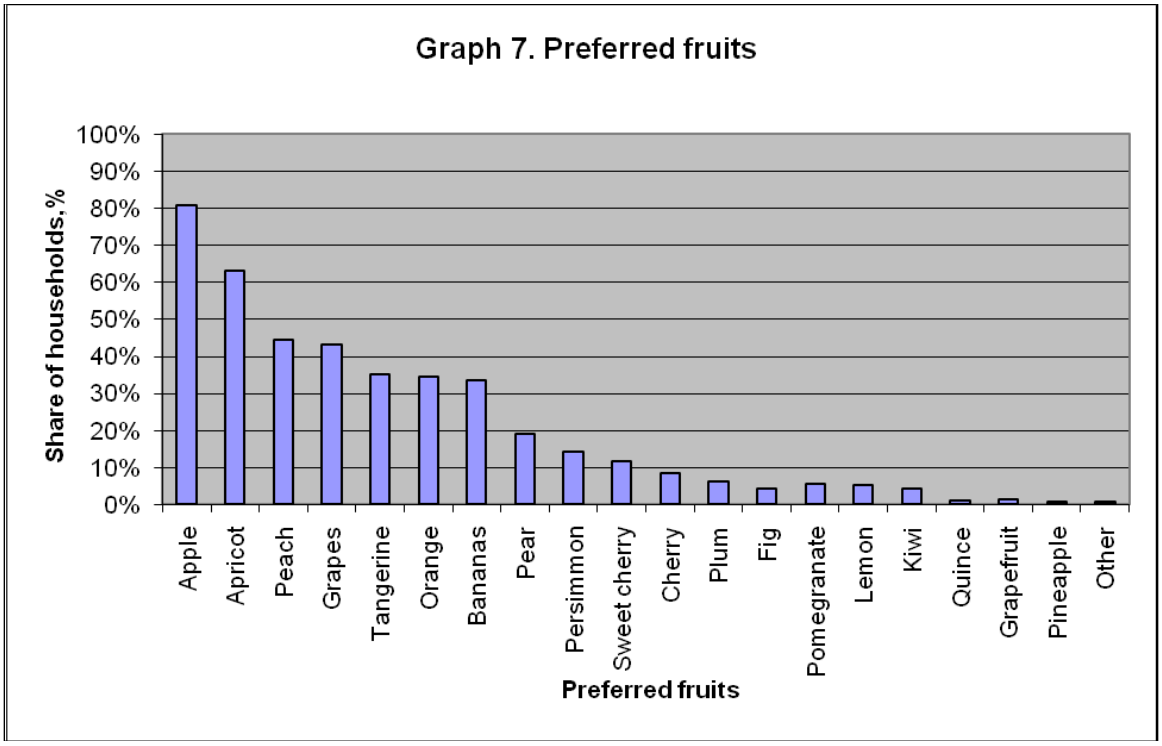
AMD/Month		Spring	Summer	Autumn	Winter*	All seasons
Extremely Poor	Mean	6842	9,824	11,672	6,979	8,247
	Std. Deviation	5,709	7,911	10,122	7,063	6,589

	Mean	9,326	14,212	15,035	8,351	11,262
Poor	Std. Deviation	7,884	10,358	12,382	7,209	7,919
	Mean	17,424	23,841	24,288	15,981	20,002
Not Poor	Std. Deviation	15,296	18,589	19,456	15,747	15,628

*Expenditures for Christmas holidays are not included

2.4 Range of preferred fresh fruits and vegetables

This section discusses the preferences of surveyed households in terms of varieties of fruits and vegetables consumed, as well as volumes and seasonal peculiarities of consumption.



The whole list of most frequently mentioned fruits include 19 varieties, of which 12 are locally grown and 7 are not grown[6] in/not typical for Armenia. The below table 18 gives the list of preferred fruits (both: locally grown and imported/not typical for Armenia) starting with the most preferred down to least preferred ones.

Table 18: List of preferred fruits

Local varieties of fruits	Non-typical for Armenia varieties of fruits
1. Apple	1. Bananas
2. Apricot	2. Orange
3. Peach	3. Tangerine
4. Grapes	4. Lemon

[6] Only commercial volumes are taken into account (experimentally grown kiwi, lemons etc. are not considered)

5. Pear
6. Persimmon
7. Sweet cherry
8. Cherry
9. Plum
10. Fig
11. Pomegranate
12. Quince

5. Kiwi
6. Pineapple
7. Grapefruit

The vast majority of Armenian consumers **prefer fruits typical for Armenia**, the absolute leaders amongst which are: *apple, apricot, peach* and *grape*.

Apple has been mentioned as the first preference by 81% of surveyed households, which is explained by several reasons such as:

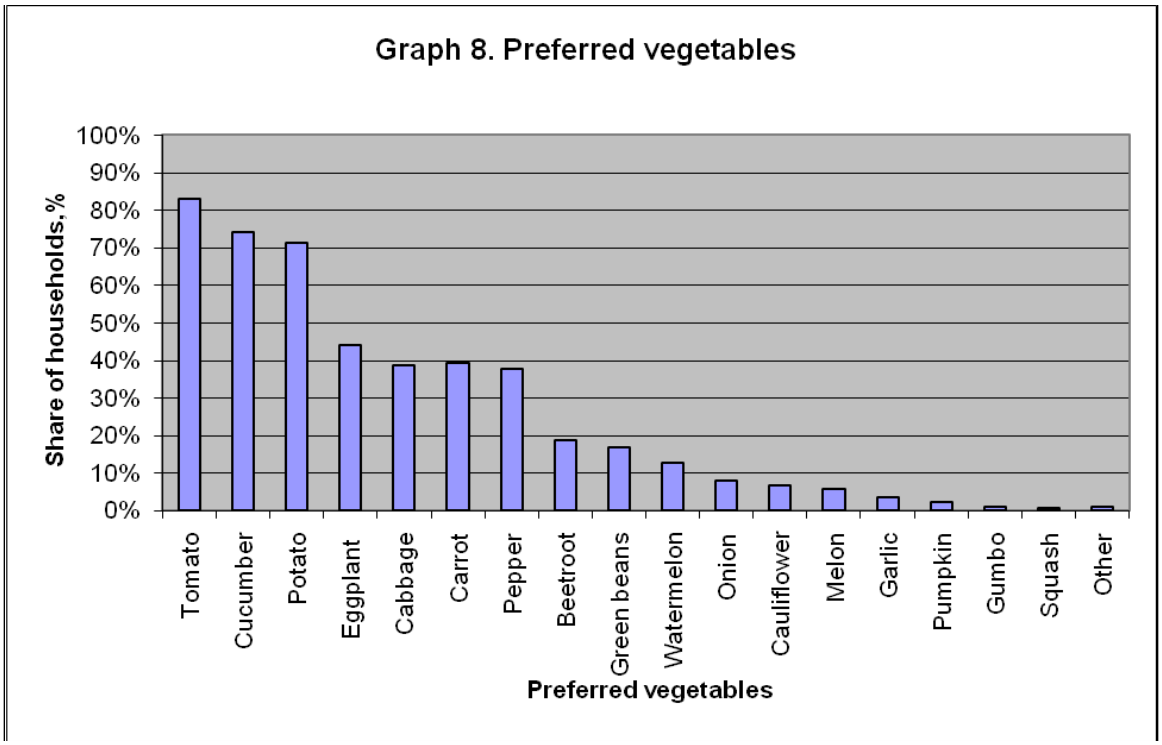
- availability almost all year around
- affordable price
- consumers' conception of it as a useful and healthy fruit.

Second most preferred fruit is ***apricot*** (as mentioned by 63% of HHs), which is traditionally greatly demanded in Armenia. The *third place is shared by peach and grape*, preferred the most by 44% and 43% of surveyed HHs respectively.

It is worth mentioning, that there are *no major differences observed in fruit preferences amongst HHs based in Yerevan and the remaining regional towns (see Annex 2, Graph A1)*.

The above top 4 most popular fruits typical for Armenia are followed by imported varieties such as: *tangerine, orange and banana* as indicated by approximately 1/3 of surveyed HHs. In the meantime these exotic varieties are more popular amongst Yerevan based HHs (36-37% of HHs) in comparison with the ones in regional towns (28-31% of HHs). This peculiarity can be explained by both: relatively lower income of HHs in regional towns compared to Yerevan based ones as well as higher retail prices of imported fruits in the regional towns (compared to Yerevan).

The list of most preferred vegetables is as long as that of fruits: 17 varieties, all of which are grown in Armenia. The most preferred varieties in this group are: *tomato* (indicated by 83% of HHs), *cucumber* (74%) and *potato* (again 74%).



The top 3 most preferred vegetables are followed by *eggplant, cabbage, carrot* and *pepper*, with indicated preference between 38% and 44% of HHs. It is noteworthy, that Armenian consumers are quite conservative in terms of their preferences towards those traditional varieties grown in Armenia (only 1 HH mentioned "non-traditional" broccoli as the most preferred vegetable). In the meantime, limited supply of and low awareness of Armenian consumers on other "non-traditional" varieties is contributing to conservativeness of consumer habits and behaviour.

Except few, there are no major differences in demonstrated preferences amongst HHs based in Yerevan and other regional towns *(see Annex 2, Graph A2)*:

- *tomato* and *cucumbers* are preferred slightly more by Yerevan based HHs compared to those in regional towns (by 3-7% of HHs);
- HHs from regional towns give slightly more preference (by 3-5% of HHs) to *potato*, *cabbage* and *green beans* compared to Yerevan based HHs.

3. PURCHASING HABITS FOR FRESH FRUITS AND VEGETABLES

The main reason for consuming fresh fruits and vegetables, as mentioned by surveyed households, is the perception of HHs of fruits and vegetables being useful and healthy food products. *Useful* and *healthy* characteristics were indicated by 71% and 54% of households respectively. In case of vegetables, the picture is virtually the same (see Annex 3; Tables 3.1 and 3.2).

Taste as a reason for consumption of fresh fruits and vegetables was prioritised by ***1/3*** of surveyed households. ***1/5*** of HHs buys fresh fruits and vegetables for **children**.

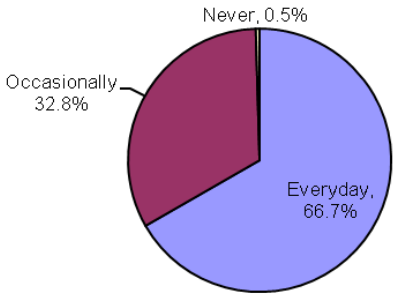
As it can be seen from tables 3.1 and 3.2 (presented in Annex 3), the four main reasons of buying fresh fruits and vegetables are the same. Nevertheless, there have been observed certain peculiarities in reasons for buying fresh fruits and vegetables. Thus, if 10% of HHs considers fresh fruits as *convenient for serving guest,* fresh vegetables are normally bought to diversify family food diet, as mentioned by 9% of HHs.

3.1 Consumer groups according to frequency of consumption

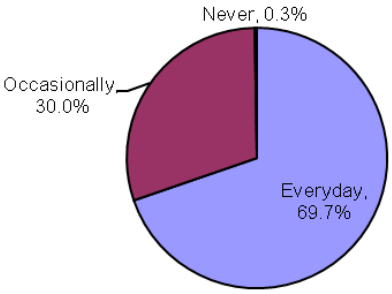
The lion's share of urban population/households in Armenia (99.5% and 99.7% respectively) **consumes fresh fruits and vegetables.** In the meantime, more than half of surveyed households (66.7% and 69.7% respectively) include fresh fruits and vegetables in their **everyday** diet.

It is noteworthy, that consumption of fresh fruits and vegetables amongst households in Yerevan is higher than in other cities (67.7% vs 63.8% in other cities). About 5% of households surveyed outside Yerevan replace fresh fruits with fresh vegetables in their daily diet. Such a situation is mostly explained by a relatively lower level of household income (and relatively lower prices of vegetables) in other surveyed cities vs. Yerevan. Thus, if in Yerevan the share of households with income below poverty line is 32%, outside Yerevan this indicator is as high as 54%.

Graph 9. Fruits consumption in family diet



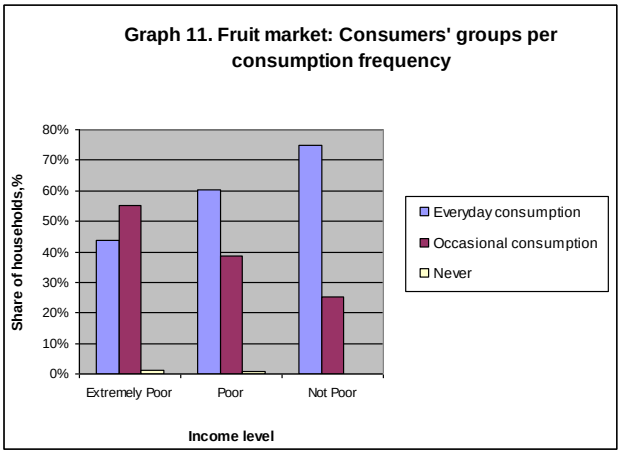
Graph 10. Vegetables consumption in family diet

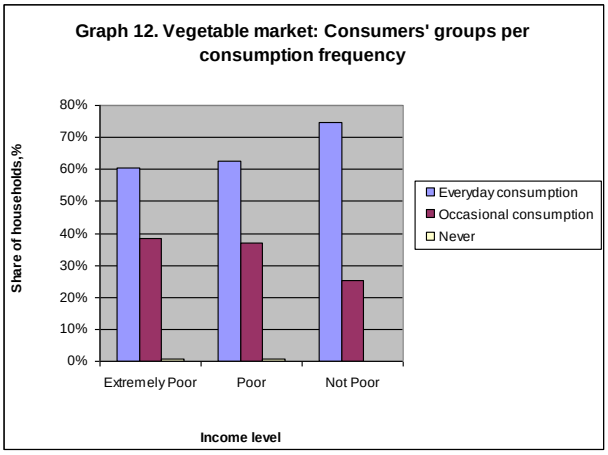


The share of households not consuming fresh fruits and vegetables is rather insignificant in both Yerevan and the remaining regional towns surveyed (0.5% and 0.3% respectively). The main reason for excluding fresh fruits and vegetables from the household diet is low level of family income – absence of money was mentioned as the reason for not buying fruits and vegetables by all those households.

The level of household income is also influencing the frequency of buying fresh fruits and vegetables, especially in case of fruits. Thus, fresh fruits are consumed every day by only 40% of households

considered to be "extremely poor"[7], 60% of "poor" households and 75% of households with relatively higher incomes. It can be assumed (later supported by surveyed HHs feedback) that along with the growth of incomes of urban population, the consumption of fresh fruits will also grow.





The situation is somewhat different in vegetable market segment. Unlike fruits, some varieties of vegetables (for instance potato) are considered to be affordable every day food product for Armenian households. This factor mostly explains the relatively weak interrelation between vegetables consumption frequency and incomes of households. Thus, vegetables are consumed every day by 61% of "extremely poor", 62% of "poor" households and 75% of households with higher incomes.

It can be assumed that increase in households' income will not bring to any significant changes in terms of frequency of buying vegetables, though qualitative changes might take place such as higher value crops consumed by households off season as well.

3.2 Consumer groups according to their preferred source of supply

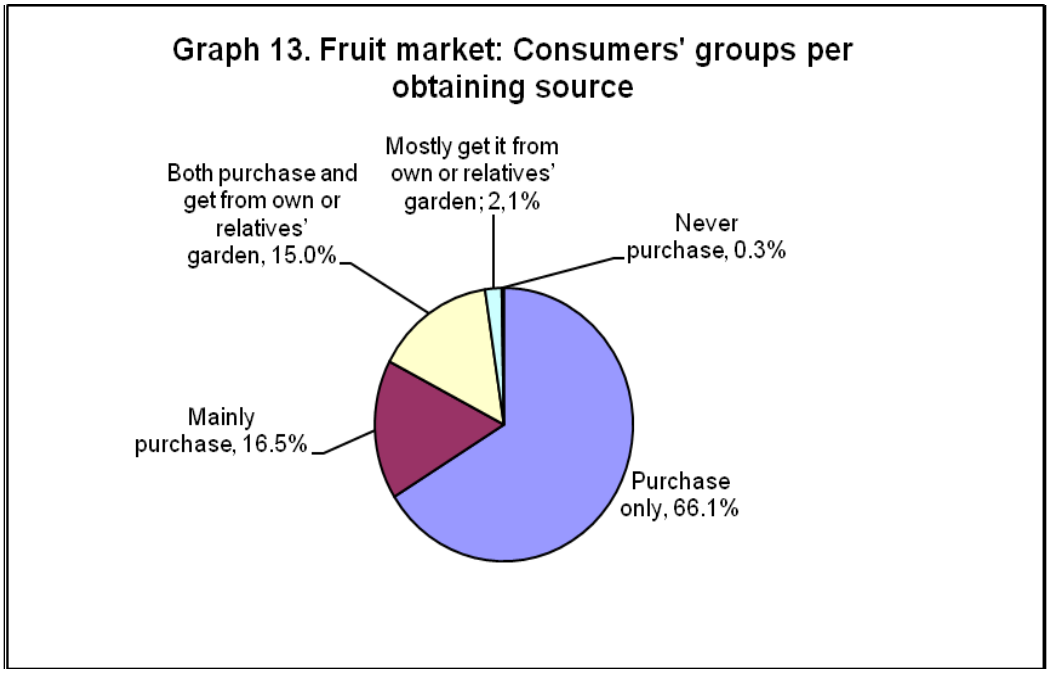
While the majority of surveyed HHs (82.6%) **buys** (both 'only buys' and 'mostly buys') fresh fruits for family consumption, 66.1% of HHs **only buys** fruits not owning a garden and/or relatives/friends to receive fruits from.

About 17.1% of HHs participates in supply chain of fresh fruits partially: also consuming own fruits and/or received from friends/relatives.

It is noteworthy, that outside Yerevan in the four regional towns, the share of HHs partially participating in supply chain is relatively higher (22%) compared to those in Yerevan (16%)[8].

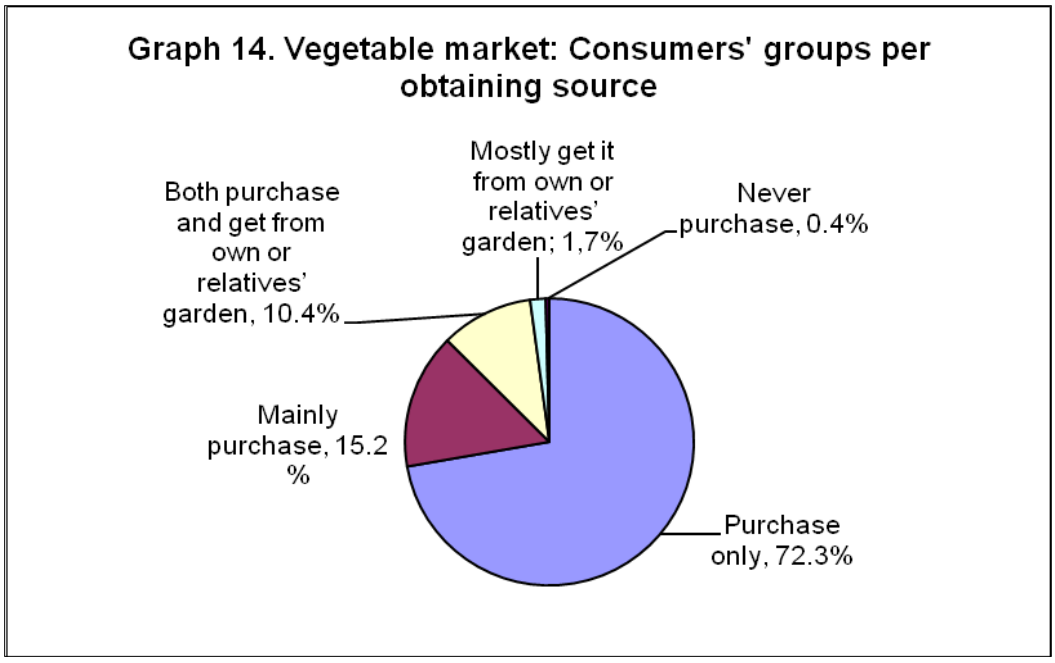
[7] 95% of surveyed households provided data on their incomes, of which 40% are considered to belong to "poor" and "extremely" poor social groups in accordance with classification of RA NSS.

[8] See Annex 1, Tables A1 and A2.



The picture is almost the same in case of vegetables. The lion's share of HHs (about 88%) mostly **buys** fresh vegetables for family consumption. About 10% of HHs do both: buy fresh vegetables and receive from friends/relatives having gardens.

Only **2%** of HHs normally **do not buy** vegetables, but consume their own and/or those received from friends/relatives. The share of such HHs is relatively higher in regional towns compared to Yerevan.



3.3 Place of purchase of fruits and vegetables

Preferred place of purchase: in general fruit and vegetable trade in Armenia is performed through:

- Retail markets (including open-air markets);
- Grocery stores and supermarkets (having fruit and veg sections);
- Green groceries;
- Street sale outlets (including mobile ones);
- Wholesale markets (which usually have also retail sections).

63% of surveyed HHs mentioned retail markets as the main place of purchase of fruits and vegetables. This tradition mostly refers to Soviet times, when retail markets (both: open-air and close) were placed in every municipal district in every city (including Yerevan) and over several decades used to be the main place to buy fruits and vegetables for urban population. Normally, the family used to buy a stock of fruits and/or vegetables for the whole week and those markets were operating mainly on week-ends.

Though nowadays retail sector is dynamically developing and other retail units appear and develop, the above mentioned retail markets continue playing a significant role for urban households due to the following characteristics:

- more than one trade outlets/sellers and a wide variety of fruits and vegetables to choose;
- opportunity to negotiate the price and select price option relevant to the budget;
- product is “unpacked”, therefore visually well displayed and the consumer can select

These peculiarities are reflected in arguments for retail markets expressed by surveyed HHs such as: convenience (for 49% of HHs), price (45% of HHs), wide assortment (25% of HHs), freshness of fruits and vegetables (13% of HHs).

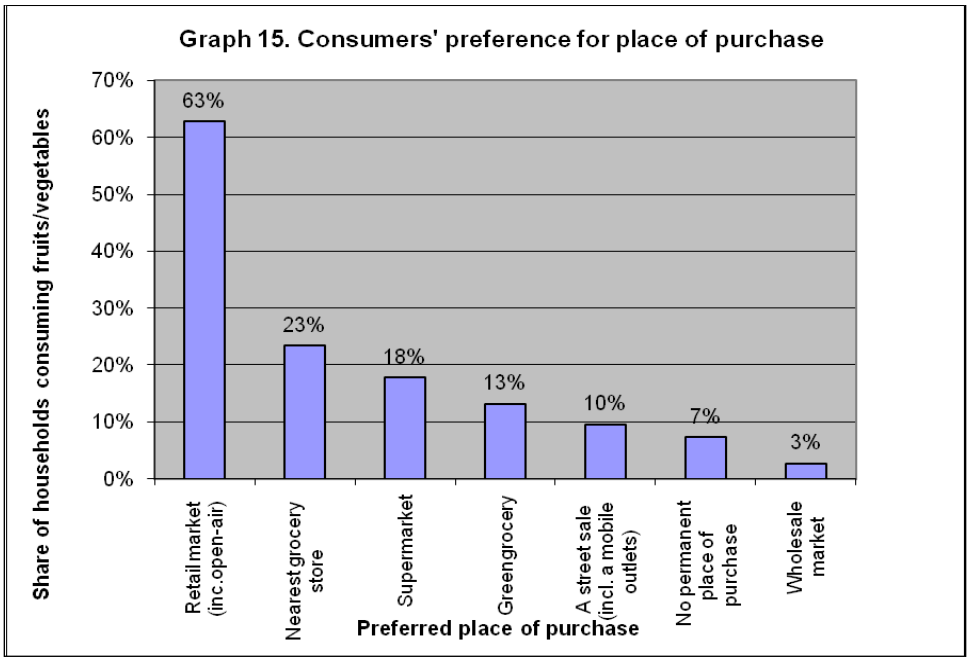
The second most preferred place for fruits and vegetables purchase was mentioned to be **the nearest grocery store**. Reasons for preferring these stores are as follows: convenience (88% of HHs), price (16% of HHs) and freshness (13% of HHs). Convenience is the number one reason indicated by surveyed households with a somewhat different meaning than in case of retail market. Here, the nearest grocery store provides an opportunity for the housewife (or other family member) to buy all the necessary goods (including food and non-food products, fruits and vegetables etc.) from one place in smaller quantities and more frequently. In case of retail markets, convenience is interpreted as a wide variety of products and options. Freshness is considered to be important in both the cases.

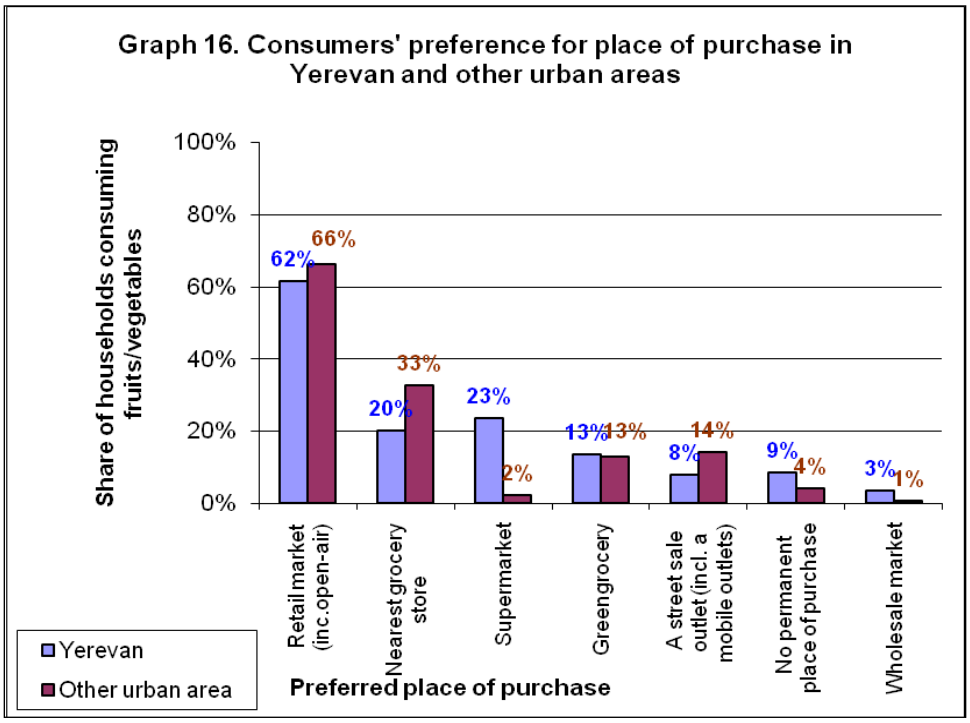
It is worth mentioning, that in regional towns 33% of HHs prefer nearest grocery stores vs. 20% of HHs in Yerevan. This is mostly explained by the existence of a large number of **supermarkets** as an alternative to grocery stores in Yerevan (which is not in place in regional towns). Thus, 23% of Yerevan based HHs visit supermarkets to buy fruits and vegetables while in regional towns 2% of HHs only. Amongst reasons of buying fruits and vegetables from supermarkets 50% of HHs mentioned the convenience factor; about 20% - freshness; 18% - cleanness and reasonable prices.

Only 13% of surveyed households prefer buying fruits and vegetables from specialized **green groceries**, which is mostly explained by the fact that those are not very popular and widely spread (not everywhere). Amongst disadvantages for this category of retail outlets the following can be mentioned: limited assortment, no obvious price advantage, no negotiation/bargain opportunity etc. Compared to retail markets (the main competitor for this group) the only advantage of grocery stores is closeness to home for HHs.

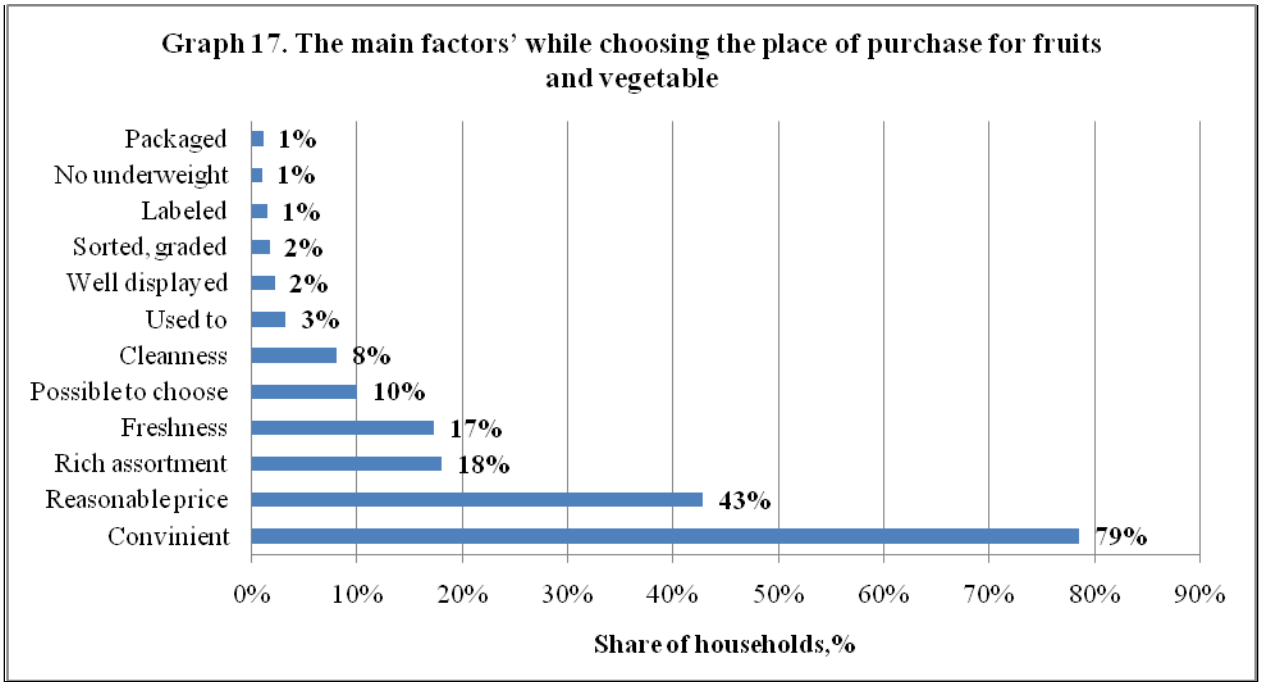
Street sale outlets *are used by 10% of surveyed HHs*. While some 10-15 years ago this type of trade was more popular and common, alongside with development of retail chain sector (e.g. supermarkets, grocery stores etc.) this category continuously lost its market share and significance. The only advantage

of street sale outlets acknowledged was the relatively low price, which anyway does not play any significant role during occasional and/or limited purchase of fruits and vegetables.





As it can be concluded, major factors affecting selection of place for buying fruits and vegetables are as follows (descending by importance): convenience, price, freshness, choice and cleanness.



3.4 Consumer groups according to frequency of purchase

Fruits and vegetables, being an important part of a family daily diet, are bought by most of surveyed HHs at least once a week. These results of the survey serve as an indirect evidence of the changes/developments that have taken place in retail sector over the past decade and expanded opportunities for households to buy fresh fruits and vegetables in smaller quantities (avoiding "stocks" as it used to be before) more regularly.

Table 19: Frequency of buying fruits through seasons

Frequency of purchase	Spring		Summer		Autumn		Winter	
	N of HH	% of HH	N of HH	% of HH	N of HH	% of HH	N of HH	% of HH
Every day	125	8,4%	467	31,4%	286	19,2%	87	5,8%
Several times a week	660	44,3%	694	46,6%	775	52,0%	485	32,6%
Once a week	419	28,1%	201	13,5%	262	17,6%	453	30,4%
Several times a month	169	11,4%	59	4,0%	97	6,5%	253	17,0%
Once a month	62	4,2%	20	1,3%	30	2,0%	106	7,1%
More seldom than once a month	22	1,5%	7	0,5%	9	0,6%	42	2,8%
Do not buy	32	2,1%	41	2,8%	30	2,0%	63	4,2%
Number of households purchasing fruits	**1489**	**100,0%**	**1489**	**100,0%**	**1489**	**100,0%**	**1489**	**100,0%**

Purchase of fruits and vegetables has seasonal fluctuations. While in season (summer and autumn), only 6%-11% of HHs buy fruits and vegetables more rarely than once a week, off-season (winter and spring)

the share of these HHs increases (19-39%). This is quite natural given that though varieties of fruits and vegetables remain almost unchanged[9] in retail sector off-season, prices increase drastically.

Table 20: Frequency of buying vegetables through seasons

Frequency of purchase	Spring		Summer		Autumn		Winter	
	N of HH	% of HH	N of HH	% of HH	N of HH	% of HH	N of HH	% of HH
Every day	104	7,0%	423	28,4%	252	16,9%	54	3,6%
Several times a week	664	44,6%	777	52,1%	788	52,9%	424	28,5%
Once a week	442	29,7%	206	13,8%	293	19,7%	435	29,2%
Several times a month	163	10,9%	50	3,4%	88	5,9%	257	17,2%
Once a month	53	3,5%	10	0,7%	38	2,6%	98	6,6%
More seldom than once a month	10	0,7%	3	0,2%	14	0,9%	47	3,2%
Do not buy	54	3,6%	21	1,4%	17	1,1%	175	11,7%
Number of households purchasing vegetables	**1490**	**100,0%**	**1490**	**100,0%**	**1490**	**100,0%**	**1490**	**100,0%**

3.5. Criteria for decision on purchase

Decisions on purchase of fruits and vegetables by HHs are generally influenced by the following factors:

- **Freshness of fruit/vegetable**, which is usually interpreted as a synonym to quality as prioritised by the highest number of HHs (74%);
- **Price** is in second place amongst discussed factors indicated by 67% of HHs;
- **External look/appearance, colour** is also treated by consumers as a quality parameter, therefore prioritised by 44-46% of HHs;
- **Taste** is another important factor mentioned by 39-40% of surveyed HHs (and many of them complained that usually it is not possible to taste the product at the site before buying).

Table 21: The most important factors considered by consumers while purchasing fruits

Factors	1-st		2-nd		3-nd	
	N of HH	% of HH	N of HH	% of HH	N of HH	% of HH
Price	381	26%	306	21%	314	21%
Freshness	552	37%	390	26%	154	10%
Appearance, colour	302	20%	240	16%	137	9%
Taste	118	8%	284	19%	196	13%
Ecologically clean origin and safety	33	2%	61	4%	109	7%
Cleanness	25	2%	54	4%	76	5%
Quality	24	2%	16	1%	2	0%
Origin	17	1%	26	2%	61	4%
Healthy fruit	15	1%	8	1%	4	0%

[9] Locally produced fruits and vegetables are replaced by imported ones

Usefulness	9	1%	6	0%	4	0%
Packaging	1	0%	4	0%	4	0%
Sort	7	0%	9	1%	4	0%
Size	2	0%	2	0%	1	0%
Maturity	2	0%	3	0%	3	0%
Juicy	1	0%		0%	1	0%
Good service, no underweight		0%	2	0%	3	0%
Smell		0%	2	0%		0%
Classification		0%	1	0%	1	0%
Seasonality (in season)		0%	1	0%		0%
Labelling		0%		0%	3	0%
Difficult to answer	0	0%	74	5%	412	28%
Number of households purchasing fruits	**1489**	**100,0%**	**1489**	**100%**	**1489**	**100%**

At the same time, during the survey it was found out that there is a group of consumers who give an importance to safety and ecological cleanness of fruits and vegetables purchased. This group consists of 14% of HHs, who "try" to consider safety and ecological cleanness of fruits and vegetables purchased. (Since there are no fruits and vegetables in Armenian market labelled and acknowledged as "safe and ecologically clean" it can be assumed that these responses reflect rather subjective judgments of HHs). Nevertheless, this perception of consumers can be considered while designing project interventions to promote fruit and vegetable consumption.

Table 22: The most important factors considered by consumers while purchasing vegetables

Factors	1-st		2-nd		3-nd	
	N of HH	% of HH	N of HH	% of HH	N of HH	% of HH
Freshness	576	39%	390	26%	142	10%
Price	364	24%	321	22%	306	21%
Appearance, colour	296	20%	222	15%	140	9%
Taste	107	7%	268	18%	204	14%
Ecologically clean origin and safety	45	3%	70	5%	89	6%
Cleanness	35	2%	53	4%	82	6%
Quality	23	2%	15	1%	2	0%
Origin	17	1%	27	2%	45	3%
Healthy fruit	10	1%	9	1%	6	0%
Usefulness	6	0%	5	0%	4	0%
Sort	4	0%	2	0%		0%
Packaging	2	0%	2	0%	3	0%
Good service, no underweight	2	0%	5	0%	3	0%
Maturity	1	0%	1	0%	0	0%
Size	1	0%	1	0%	0	0%
Labelling, sorting	0	0%	2	0%	4	0%
Other (being seasonal, smell)	0	0%	2	0%	4	0%

Difficult to answer	1	0%	95	6%	456	31%
Number of households purchasing vegetables	1490	100%	1490	100%	1490	100%

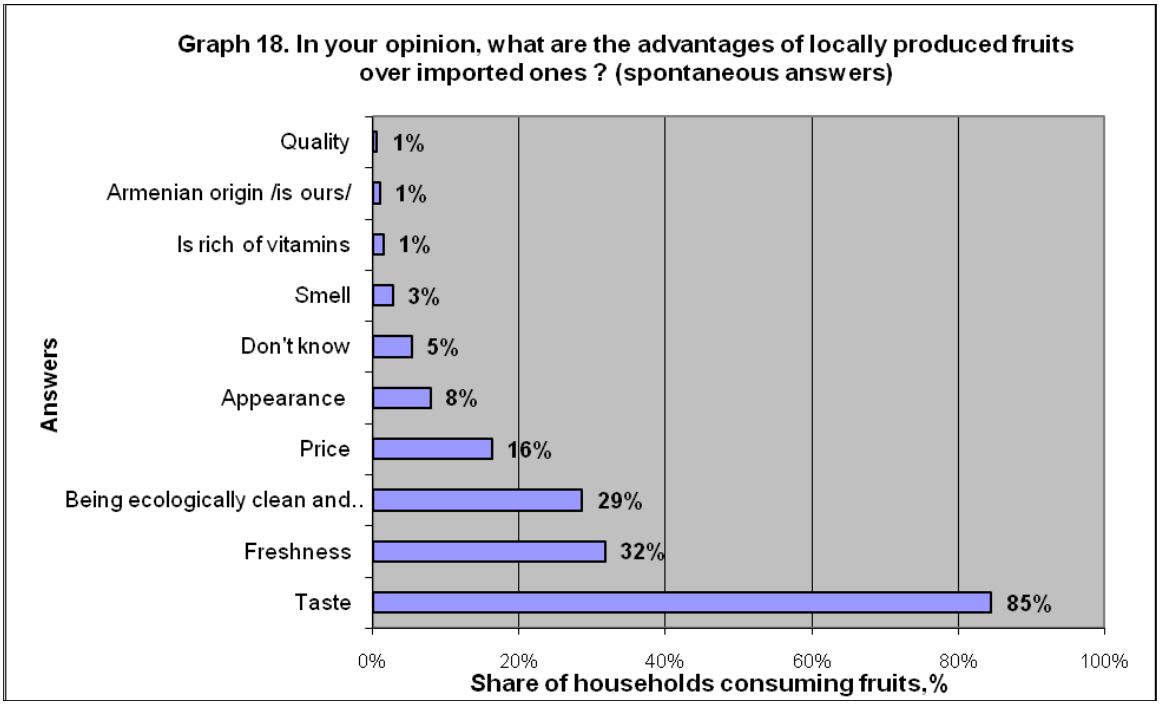
4. TRENDS AND OPPORTUNITIES IN FRESH FRUIT AND VEGETABLES MARKETS

4.1 Consumers' attitude towards locally grown fruits/vegetables compared to the imported ones

As survey results show, Armenian consumers in general are quite positive towards locally produced fruits and vegetables. According to survey respondents, Armenian fruits and vegetables have advantages over the imported ones such as:

- *Taste*, 85% of surveyed HHs consider the taste of local fruits and vegetables as a significant advantage compared to the imported ones;
- *Freshness*, about 1/3 of HHs consider the freshness of Armenian fruits and vegetables as an obvious advantage compared to the imported ones (which pass a longer way from producer to Armenian consumer);
- 29% of HHs is sure that locally produced fruits and vegetables are *ecologically cleaner and safer* than the imported varieties.

It is worth mentioning, that the above feedback of surveyed HHs was received spontaneously through open-ended questions without offering any options, which helped to capture their primary reaction/perception of advantages of the Armenian fruits and vegetables.



After listing possible answers, 83% of HHs highlighted also **price** as an advantage of locally produced crops over the imported ones. The fact of acknowledging price as an advantage after providing the options shows, that the Armenian consumers perceive advantage more as a qualitative category.

Advantages of Armenian fruits and vegetables indicated by consumers – i.e. taste, freshness, ecological cleanness and safety – are rather subjective and reflect more positive emotions and loyalty towards

Armenian products. Price as an advantage of local crops is an objective characteristic and reflects the existing situation in the market.

In the meantime, surveyed HHs are sure that the following characteristics cannot be viewed as advantages of local fruits and vegetables:

- being sorted and graded,
- packaging,
- labelling:

As it can be observed in the local market, indeed, the above mentioned characteristics cannot be attributed to the advantages of local fruits and vegetables. Only supermarkets offer limited volumes and varieties of properly sorted, graded, packaged and labelled fruits and vegetables. At the same time, it is interesting to discuss the disadvantages of locally produced crops as perceived by surveyed households.

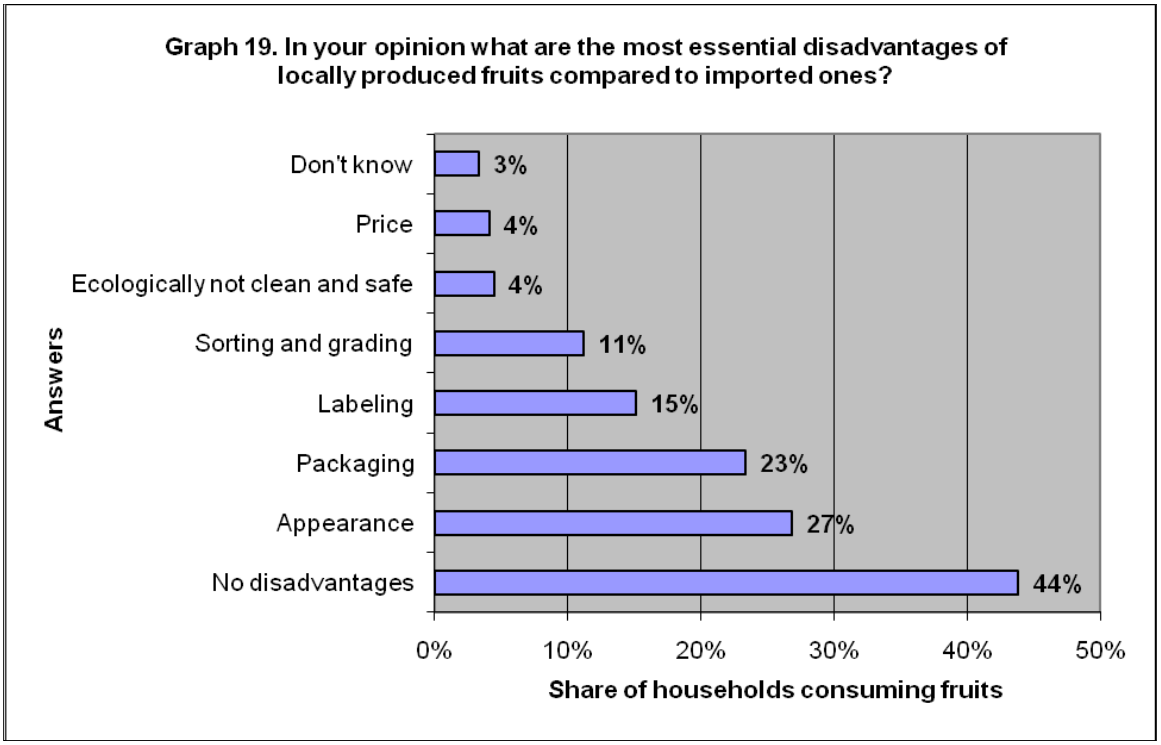
Table 23: Consumers' attitude towards advantages of local fruits

Characteristics	Answers	Yerevan		Other urban areas		All HH	
		N of HH	% of HH	N of HH	% of HH	N of HH	% of HH
Taste	Yes	1059	97%	391	98%	1450	97%
	No	17	2%	1	0%	18	1%
	Don't know	19	2%	6	2%	25	2%
Freshness	Yes	1021	93%	370	93%	1391	93%
	No	41	4%	19	5%	60	4%
	Don't know	33	3%	9	2%	42	3%
Being ecologically clean and safe	Yes	888	81%	326	82%	1214	81%
	No	80	7%	25	6%	105	7%
	Don't know	127	12%	47	12%	174	12%
Price	Yes	830	76%	332	83%	1162	78%
	No	129	12%	34	9%	163	11%
	Don't know	136	12%	32	8%	168	11%
Appearance	Yes	436	40%	138	35%	574	38%
	No	585	53%	246	62%	831	56%
	Don't know	74	7%	14	4%	88	6%
Sorting and grading	Yes	289	26%	75	19%	364	24%
	No	607	55%	272	68%	879	59%
	Don't know	199	18%	51	13%	250	17%
Packaging	Yes	122	11%	28	7%	150	10%
	No	865	79%	347	87%	1212	81%
	Don't know	108	10%	23	6%	131	9%
Labelling	Yes	103	9%	22	6%	125	8%
	No	863	79%	345	87%	1208	81%
	Don't know	129	12%	31	8%	160	11%
Total N of HHs consuming fruits		1095	100%	398	100%	1493	100%

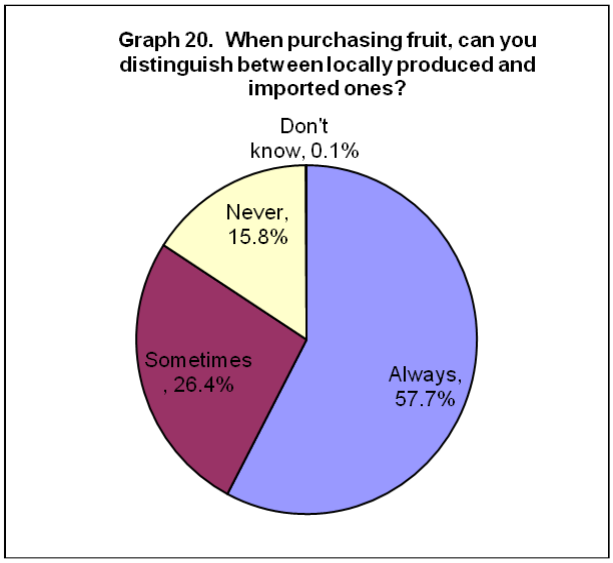
44% of surveyed HHs is sure that Armenian fruits do not have any disadvantages. It should be noted here, that only some segment of consumers perceive absence of sorting, grading, packaging and labelling as disadvantages (see graph 19). However, this segment can be considered as a potential group of consumers of sorted, graded, packaged and labelled fruits if offered and promoted accordingly. While 23% of surveyed HHs expressed willingness to buy packaged local fruits, only 15% reacted so in regard to labelling and even less, 11% for sorting and grading.

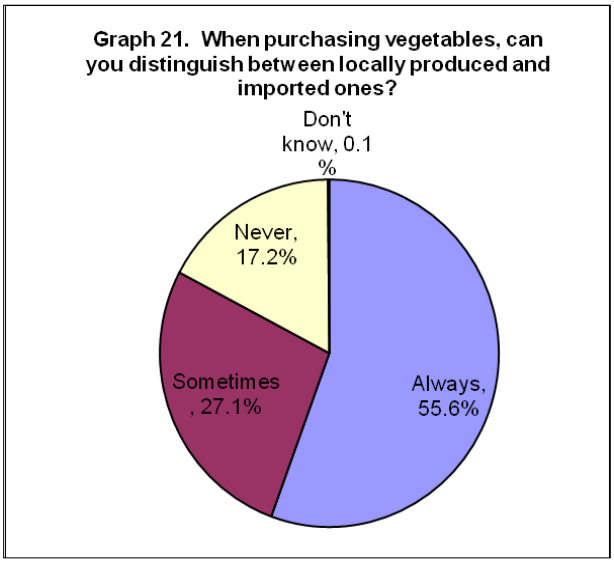
External look/appearance of local fruits was most frequently mentioned as a disadvantage – i.e. by 23% of HHs. In the meantime, twice more HHs (56%) think that external look/appearance of local fruits cannot be considered as an advantage compared to the imported ones.

Graph 19. In your opinion what are the most essential disadvantages of locally produced fruits compared to imported ones?



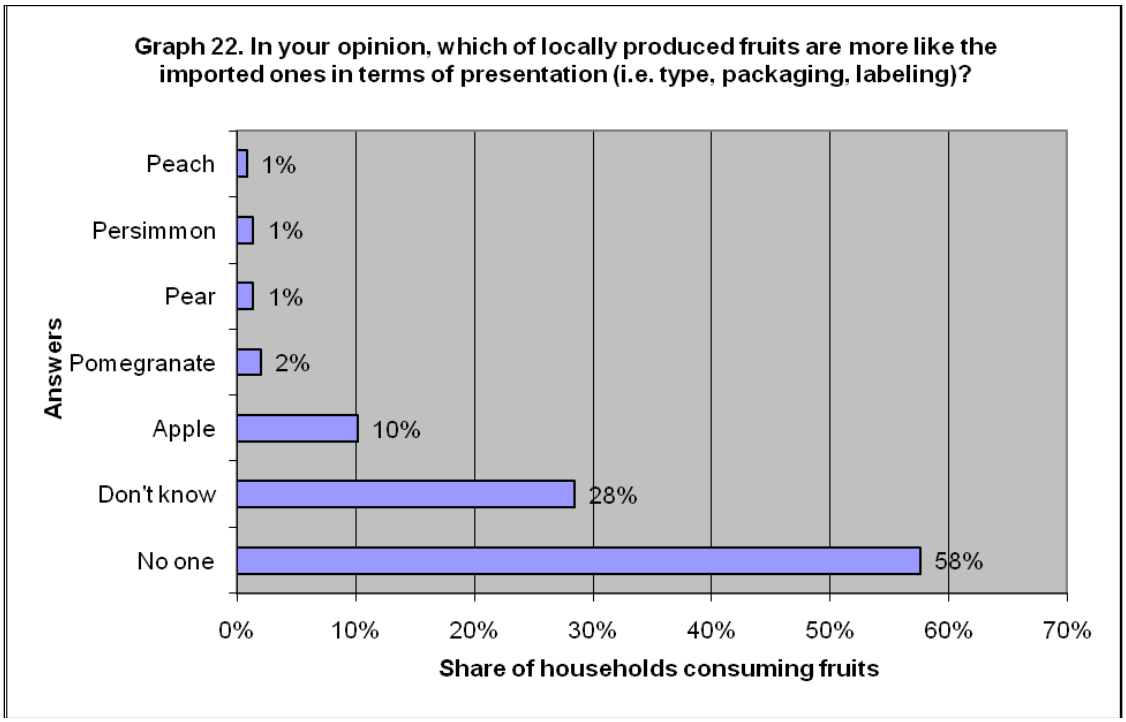
While discussing advantages and disadvantages of local fruits over the imported ones, it was interesting to understand whether Armenian consumers distinguish locally produce and imported fruits and vegetables. Thus, more than half of respondents mentioned that they can do that and about 27% of HHs stated that it is not always possible.

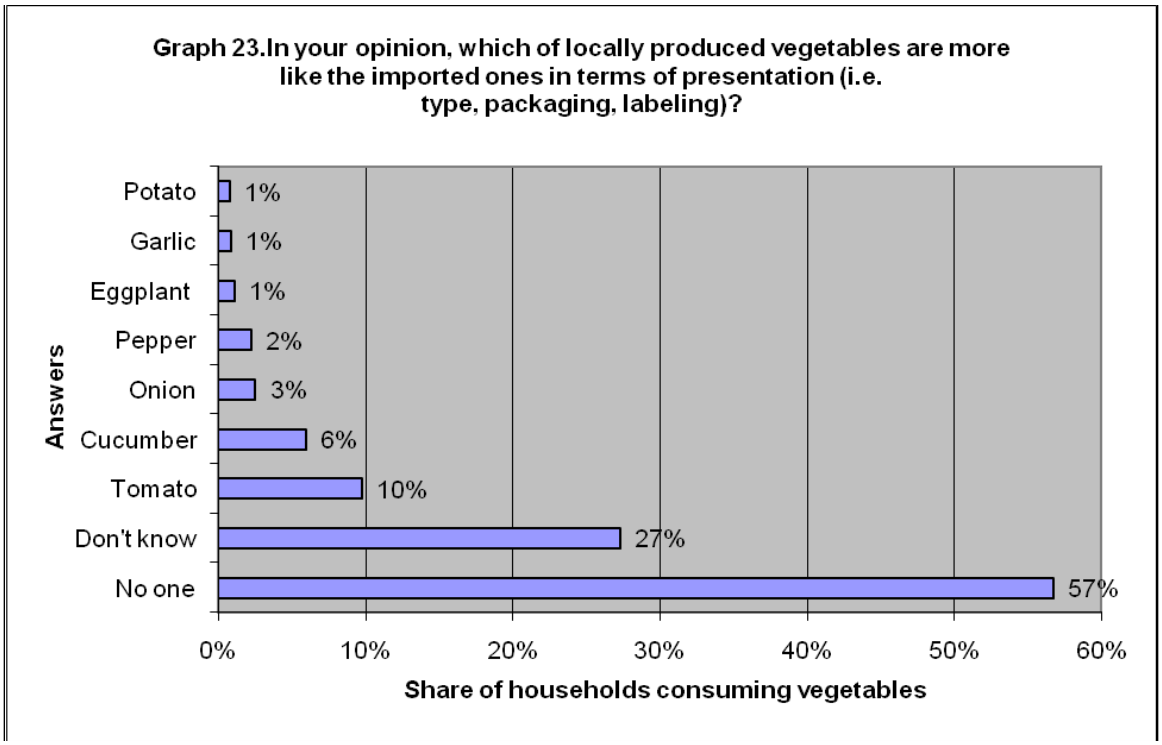




Consumers' perception that they can distinguish for sure local fruits and vegetables from imported ones is based on the assumption that Armenian fruits and vegetables are not like the imported ones (more than 50% of HHs). Only 18% of HHs mentioned one variety of fruits similar to the imported and the most frequently mentioned was apple.

25% of HHs considers locally produced tomatoes (the most frequently mentioned), cucumbers, onions, pepper and few other varieties looking similar to the imported ones.




Graph 23.In your opinion, which of locally produced vegetables are more like the imported ones in terms of presentation (i.e. type, packaging, labeling)?
Answers
Potato
Garlic
Eggplant
Pepper
Onion
Cucumber
Tomato
Don't know
No one
1%
1%
1%
2%
3%
6%
10%
27%
57%
0%
10%
20%
30%
40%
50%
60%
Share of households consuming vegetables

4.2 Consumers' preferences and attitude towards fruits and walnuts grown in Meghri area

4.2.1 Average consumption volumes per HH and seasonality of fruits grown in Meghri area

This section of the report reflects results of the assessment on fruit varieties and nuts grown in Meghri area, namely: **apples**, **fig**, **persimmon**, **pomegranate** and **walnuts**.

Given the importance of varieties grown in Meghri area, data on *fig, persimmon, pomegranate* and *apple* in the Table 24 is covering those surveyed HHs that in general consume these fruits regardless of fact whether they prefer those the most or not. (In other words, if above fruits were not indicated amongst most preferred during the survey, additional question on consumption of those by the HHs in general was asked).

Table 24: Average consumption of fruits (grown in Meghri) per household through the seasons

Variety of fruit	Spring		Summer		Autumn		Winter	
	% of HHs*	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)	% of HHs *	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)
Fig	0.5%	2.6	16.3%	5.07	44.1%	5.4	1.6%	3.7
Persimmon	7.8%	1.1	2.5%	1.76	73.5%	13.0	61.2%	10.0
Pomegranate	2.1%	5.9	2.9%	3.91	41.1%	4.6	59.4%	4.2
Apple	93.1%	26.6	88.8%	21.0	96.4%	29.6	94.9%	30.7

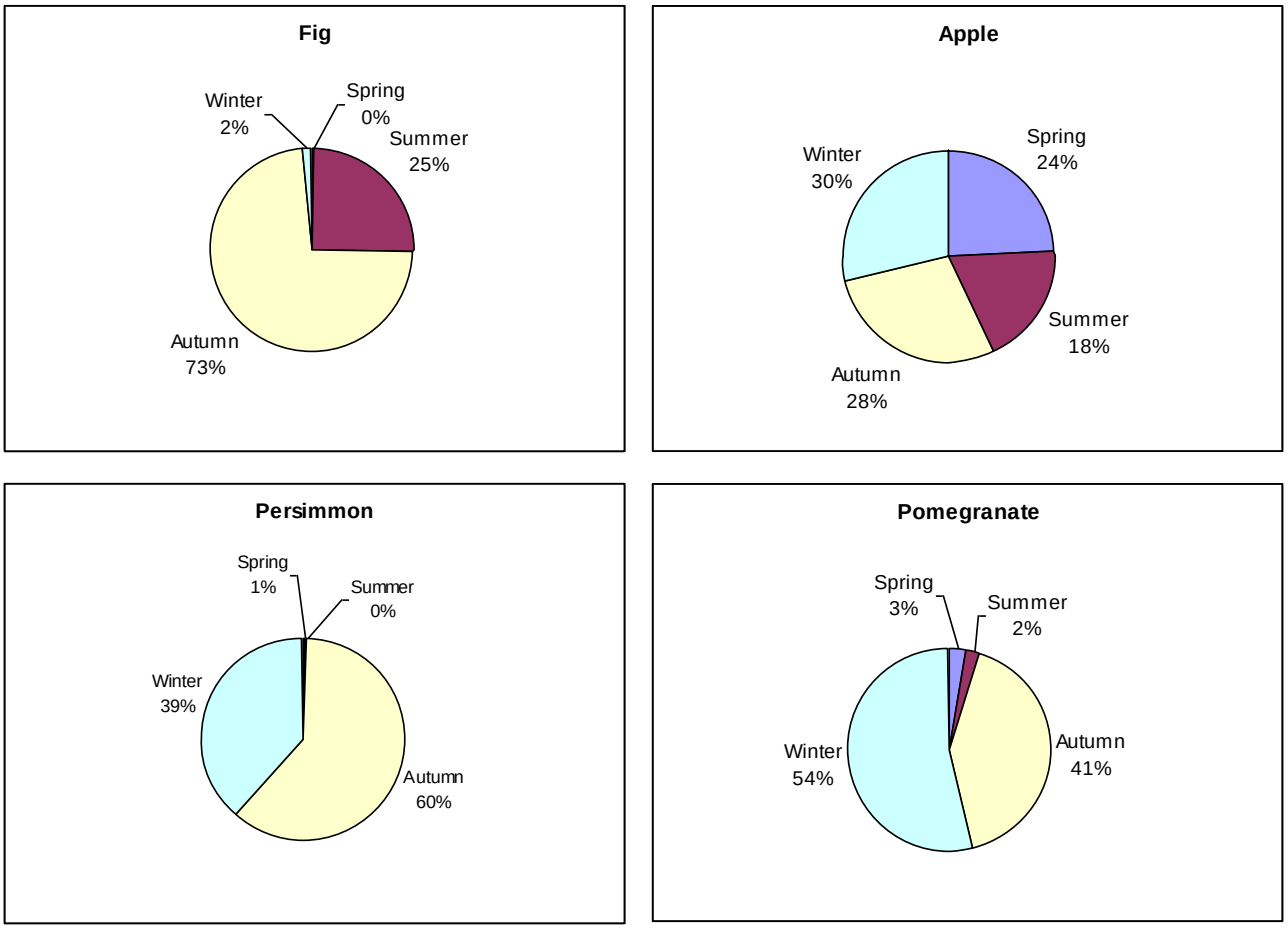
* Of households consuming fruits

Except apple, consumption of the rest mentioned varieties is rather seasonal. As it is seen from the table below, consumption of **figs** is taking place mainly during the harvest season. 44% of surveyed HHs consumes figs in autumn and 16% in winter seasons – in average 5.1-5.4 kg per season/quarter.

Fruit	Harvest season	Consumption during harvest season (%)	Consumption after harvest season (%)
Apple	August-September	46%	54%
Fig	August-September	88%	2%
Persimmon	September-October	60%	40%
Pomegranate	September-October	40%	60%

Pomegranate and **persimmon** are consumed in autumn and winter (including Christmas holidays), since they cannot be stored for a long time (e.g. like apples). In season persimmon is highly demanded by urban HHs: more than 2/3 of surveyed HHs buy it during autumn and winter seasons consuming 10-13 kg per quarter. It is noteworthy, that 14% of HHs mentioned persimmon as the most preferred fruit. This group of consumers can be considered as the most loyal, which will assumingly buy persimmon if it is available in retail chains off-season.

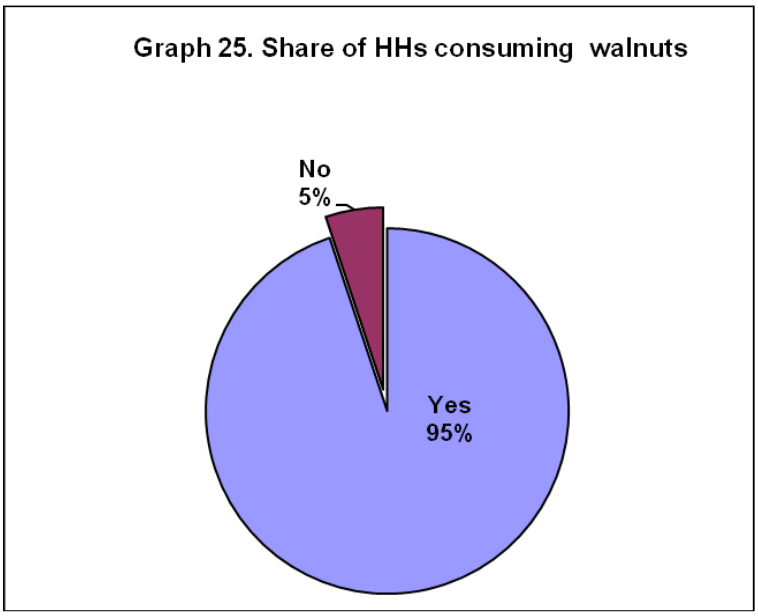
Graph 24. Seasonality of consumption of fruits cultivated in Meghri region by surveyed HHs



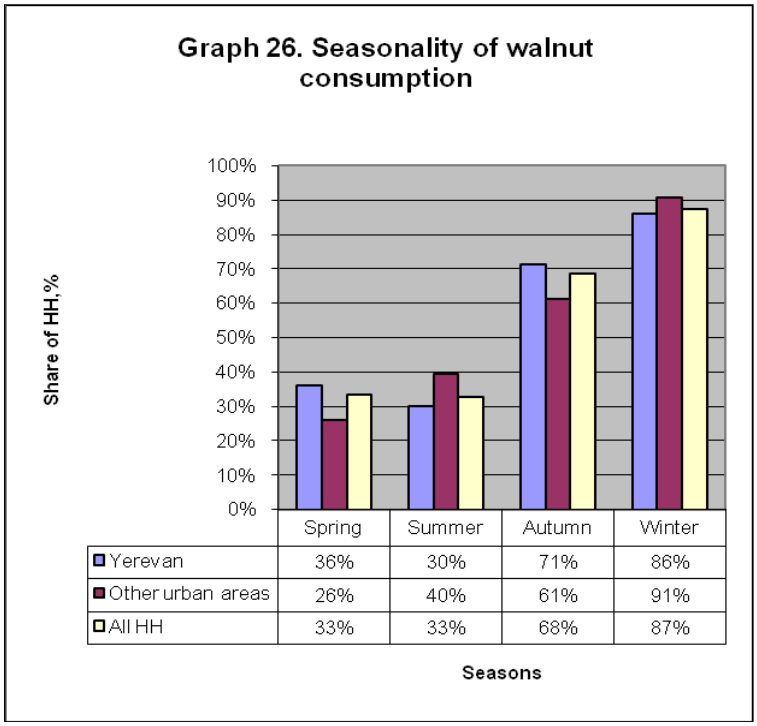
Compared to persimmon, **pomegranate** is less consumed by HHs. 54% of surveyed HHs buy and consume pomegranate in autumn season and 41% - in winter, consuming in average 4.2-4.6 kg per quarter/season. There is a small segment of consumers (about 2-3% of HHs) that would buy and consume this fruit all year around once found in the retail chain. Pomegranate was mentioned as the most preferred fruit by 6% of surveyed HHs belonging to the social group with relatively higher incomes that can afford buying it more or less regularly (it is worth mentioning, that pomegranate is one of the most expensive fruits).

4.2.2 Consumption of walnuts

Walnuts are traditionally popular amongst Armenian households widely used in different ways: fresh, in cuisine, processed (preserves) etc.



95% of surveyed HHs includes walnuts in their diet. In the meantime, consumption of walnuts is directly related to income level of the household. Thus, if almost 100% of consumers with higher incomes can afford and buy/consume walnuts, in the groups of "poor" and "extremely poor" HHs 9% and 12% respectively had to exclude that from their food ration.



Consumption of walnuts is highly seasonal with its peak on Christmas holiday period. As it is sees from the Graph 26, 87% of HHs consumes walnuts during winter season: in average 3.8kg in season/quarter.

In autumn, during the harvest season, 68% of HHs consumes in average 5.4 kg of walnuts. Relatively higher consumption figure is explained by relatively lower prices compared to winter.

In spring and summer, only 33% of HHs continues consuming walnuts – 2.6-3.3 kg in average.

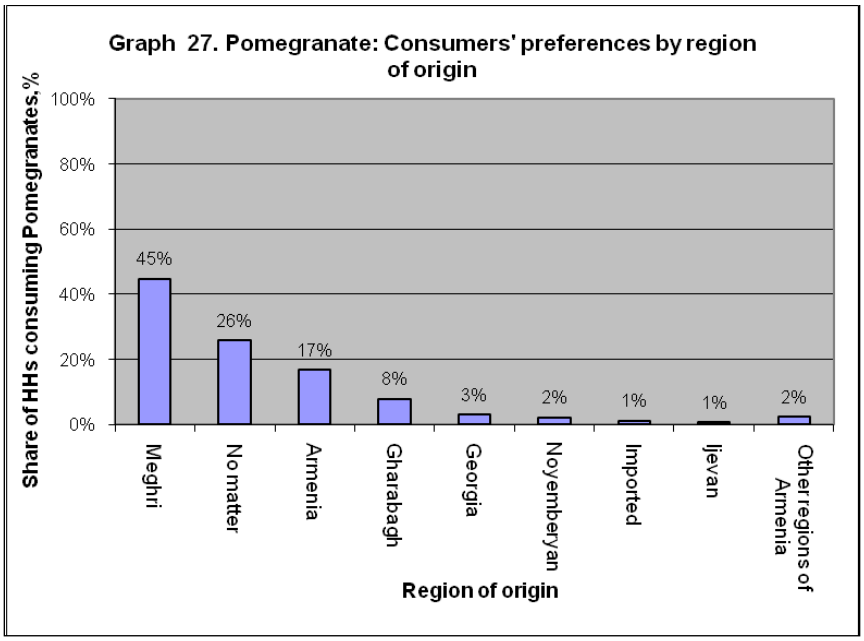
Table 25: Average consumption of walnuts per household through the seasons

		Spring	Summer	Autumn	Winter
Yerevan	Average consumption per season (kg.)	2.6	3.3	5.2	3.8
	Std. Deviation	3.0	4.4	7.3	4.5
Other urban areas	Average consumption per season (kg.)	2.6	3.2	5.0	3.6
	Std. Deviation	3.7	3.1	5.4	3.8
All households	Average consumption per season (kg.)	2.6	3.3	5.1	3.8
	Std. Deviation	3.1	4.1	6.9	4.3

4.2.3 Main competitors of fruits and walnut cultivated in Meghri area

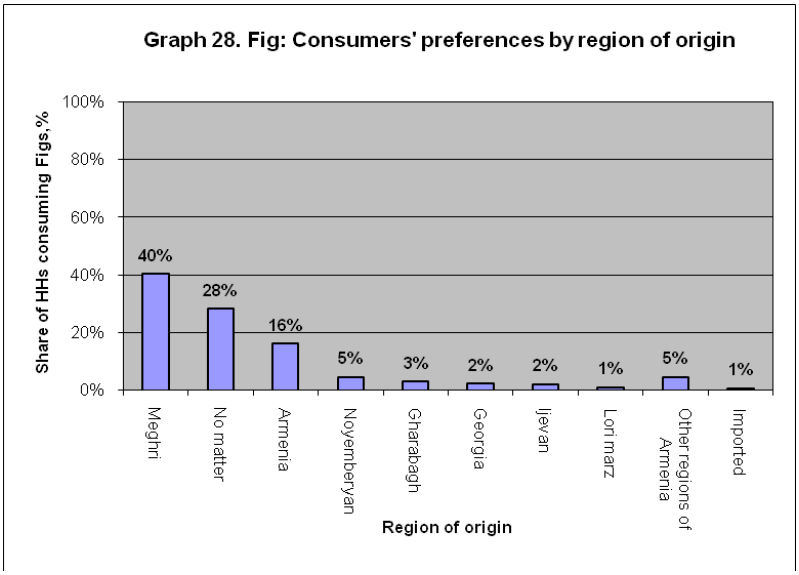
Amongst fruits cultivated in Meghri area, the most known and preferred by surveyed HHs appeared to be *pomegranate, fig* and *persimmon*.

45%[10] of HHs consuming pomegranate prefer that from Meghri, which can be classified as the most known and preferred "brand name" in the local market of fresh fruits. 26% of HHs does not care what region the pomegranate is from and 17% prefer generally Armenian pomegranate without any particular preference towards the region. Another preferred "geographic brand name" is Nagorno-Karabakh, also well known by its sweet and tasty pomegranates (as mentioned by 8% of HHs). Only 4% of HHs prefer imported pomegranates (e.g. from Georgia). Another 5% of HHs prefer pomegranates from other regions of RA, namely: Tavush, Lori, Syunik etc.

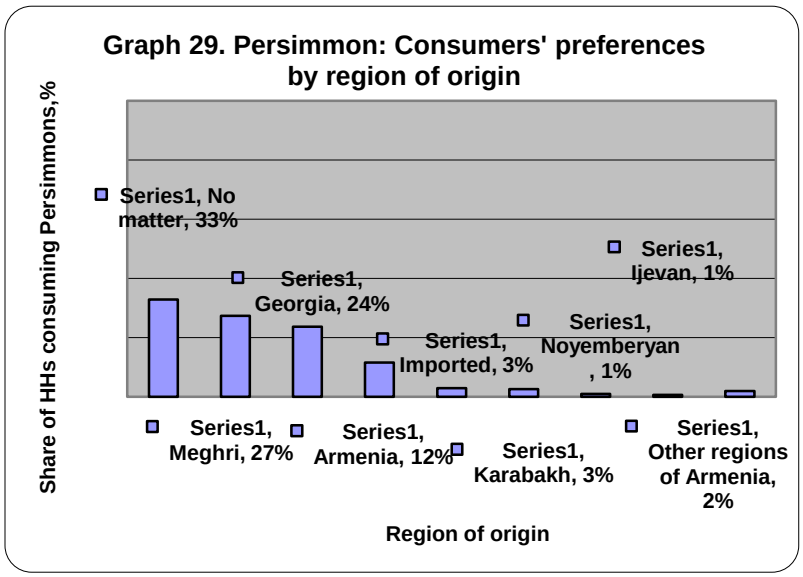


[10] More than 1 answer was gathered while asking about "geographic preferences"

"Figs from Meghri" are also well accepted and preferred by consumers. Thus, over 40% of HHs consuming figs highlighted this. 28% of HHs did not demonstrate any particular preference towards the region of origin and 16% prefer generally locally produced figs.

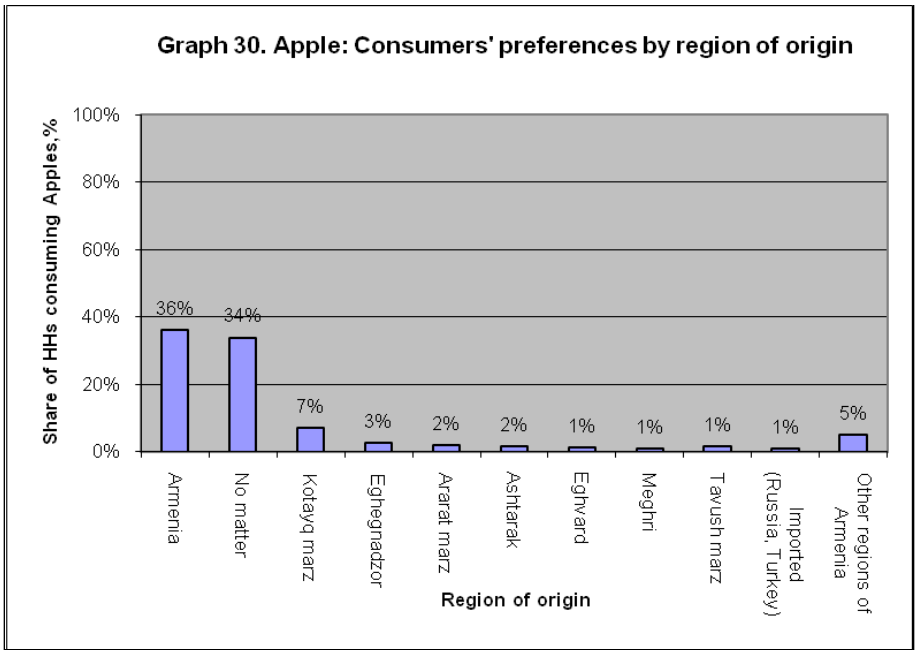


While 33% of HHs consuming persimmons are not concerned with the origin of persimmons they consume, 27% acknowledge Meghri as a preferred "source". 24% consider Georgian persimmons as the most preferred followed by 12% of HHs generally preferring persimmons of Armenian origin, without specific preference on the area of origin.



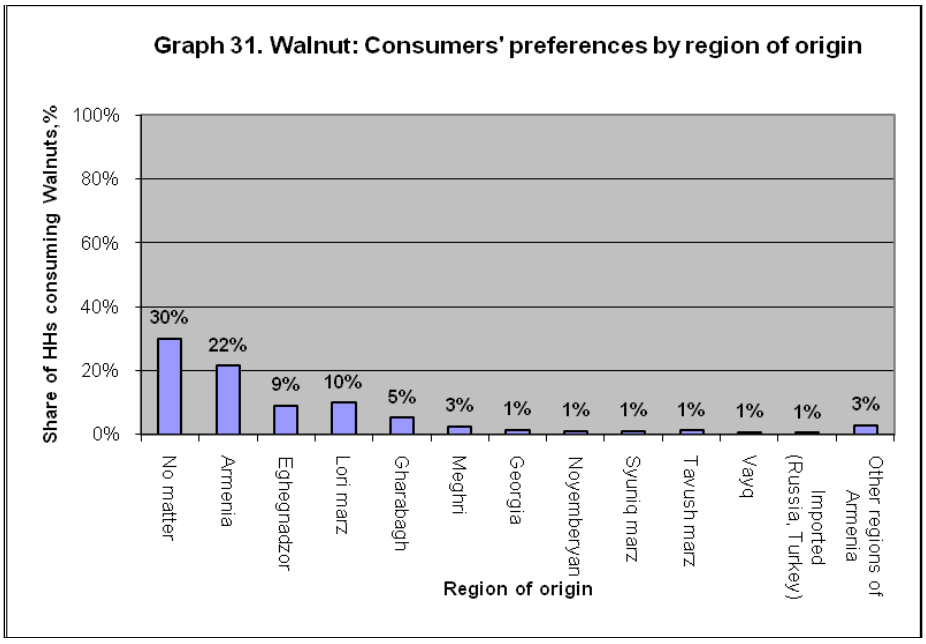
Though Meghri persimmons are known and generally enjoy loyalty of Armenia consumers, Georgian persimmons can be viewed as a main competitor. At the same time 33% and 12% of the mentioned consumers can be considered as a "potential" target for the project to work on for promotion of Meghri "brand name".

Only 1% of HHs consuming apple prefer apples from Meghri. 23% of HHs has rather strong "geographical preferences" for apples: Kotayk marz/region is an absolute leader here. In the meantime 1/3 (or 36%) of HHs prefer generally Armenian apples with no specific geographic focus. A similar group of consumers (34% of HHs) does not have any kind of preference towards apples origin (e.g. local, imported etc.).



Indifference towards the area of origin was interpreted by consumers that they are mostly concerned with the variety of apple rather than the area it was grown.

Surprisingly, only 3% preferred walnuts from Meghri area the most. While 30% of HHs is not concerned with the origin of walnuts consumed, 22% prefer generally Armenian walnuts (mostly from Lori marz and Yeghegnadzor region of Vayots Dzor marz).



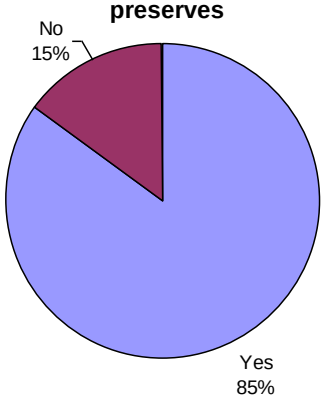
5. PURCHASING HABITS OF PROCESSED FRUITS AND VEGETABLES

In this section of the report consumption[11] of processed fruits and vegetables by urban households is discussed. The following processed varieties were assessed:

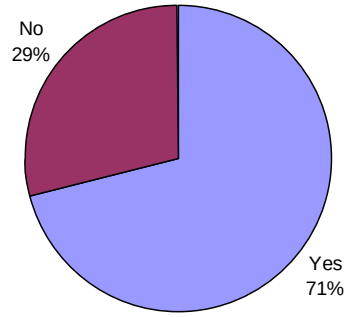
- preserves
- jams
- dried fruits and vegetables
- frozen fruits and vegetables

Majority of surveyed HHs (85%) consumes preserves, jams (77%) and dried fruits (71%). These are traditional and very popular food products consumed quite intensively by Armenian families unlike frozen fruits and vegetables, which is a relatively new product in the Armenian market. 24% of surveyed HHs mentioned that they consume frozen fruits and vegetables.

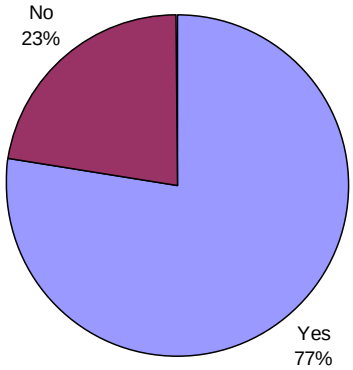
Graph 32. Share of HHs consuming preserves



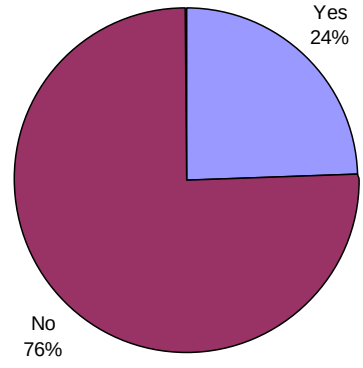
Graph 33. Share of HHs consuming jams



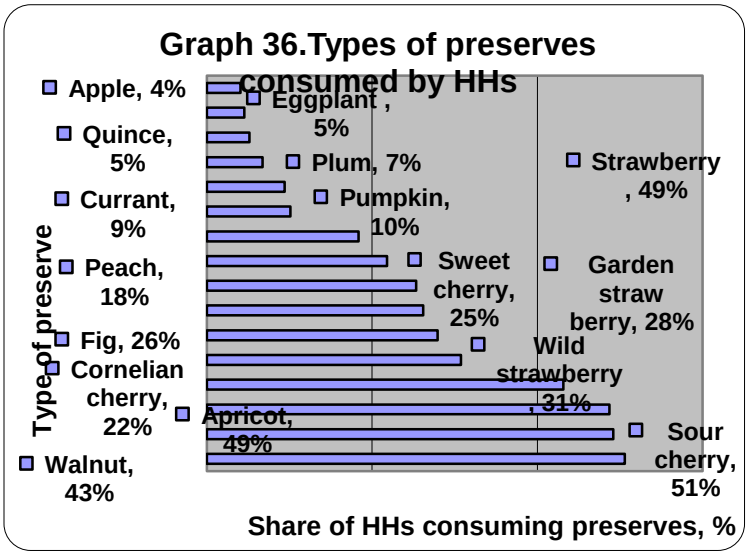
Graph 34. Share of HHs consuming dried fruits/vegetables

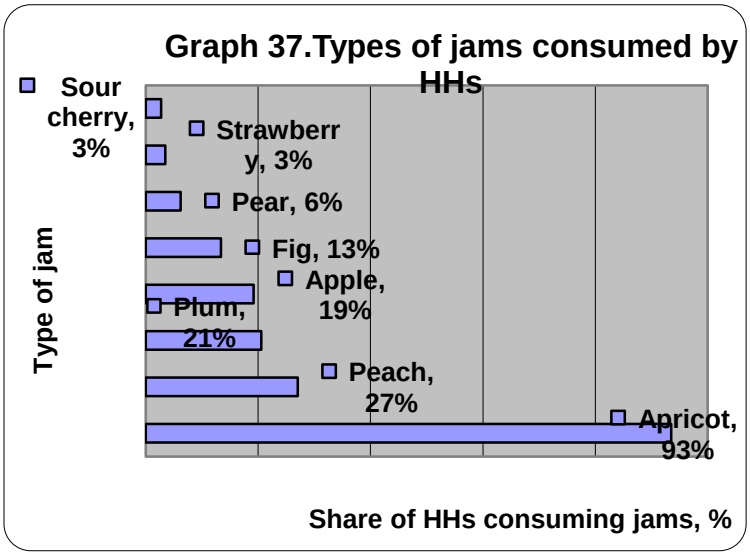


Graph 35. Share of HHs consuming frozen fruits/vegetables



[11] Including both: home-made and industrially produced

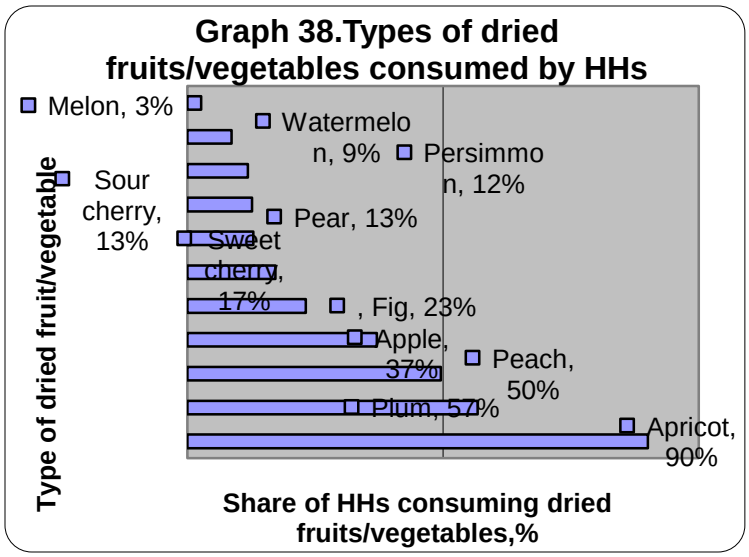




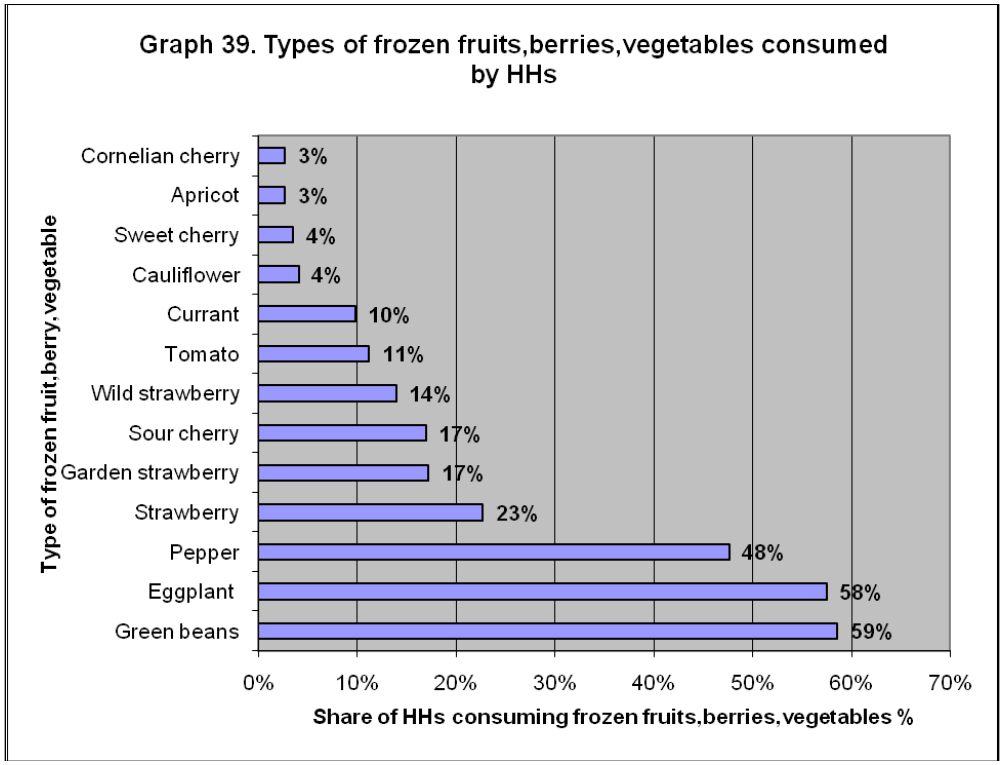
The most popular varieties of fruit preserves consumed by surveyed HHs are: cherry, apricot, raspberry and **walnuts** (see graph 36):

Apricot jam is the most preferred variety amongst jams (over 90%) consumed by HHs followed by peach, plum and apple.

Apricot is a leader also amongst consumed dried fruits and vegetables (over 90%) followed by plum (57%), peach (50%), apple (37%) and fig (23%).



Amongst frozen fruits and vegetables, vegetables are far ahead, in particular frozen *green bean, eggplant and pepper*.



6. CONSUMERS' PERCEPTION ON PERSPECTIVES OF FRUIT AND VEGETABLE CONSUMPTION INCREASE IN ARMENIA.

6.1 Quality Standards Approaches

In this section of the report, quality standards related approaches and consumers' attitude is introduced. Though the concept of organic products is rather new in Armenia, survey results show that consumers are generally positive towards organic products. Thus, over 90% of surveyed HHs expressed willingness to buy organic fruits. In the meantime, as shown in table 27, readiness to pay extra for organic products decreases dramatically alongside with the extra margin increase. Thus only 11.6% of those 93.4% are ready to pay extra 20% and more, 16.1% of this group from 10% to 20% and almost half (47.7%) **not more than 10%**. About 1/5 of these HHs are not planning to pay extra for organic products.

Table 26: Willingness to buy organic fruits

	Number of HHs	% of HHs
Yes	1395	93,4%
No	61	4,1%
Don't know	37	2,5%
Number of HHs consuming fruits	**1493**	**100%**

Table 27: Readiness to pay extra for organic fruits

	Number of HHs	% of HHs
Up to 10%	665	47,7%
10-20%	225	16,1%
20-30%	65	4,7%
30% and more	96	6,9%
0%	242	17,3%
Do not know	102	7,3%
Number of HHs willing to buy organic fruits	**1395**	**100,00%**

As mentioned earlier in the report, Armenian consumers are rather conservative in terms of habits and behaviour. Thus, absence of sorting and grading not being acknowledged as anyhow serious disadvantage is proved by the attitude of surveyed HHs while assessing their readiness to pay extra for sorted and graded fruits and vegetables. 66.5% of surveyed HHs is either not willing to pay more or not decided. The rest of the group (33.5%), which is ready to pay extra, mainly consists of 26.5% of those who would pay **not more than 10%**.

Table 28: Readiness to pay extra for sorted & graded fruits

	Number of HHs	% of HHs
Up to 10%	395	26,5%
10-20%	74	5,0%
20-30%	15	1,0%
30% and more	16	1,0%
0%	862	57,7%
Do not know	131	8,8%
Number of HHs consuming fruits	**1493**	**100,0%**

Table 29: Readiness to pay extra for packaged fruits

	Number of HHs	% of HHs
Up to 10%	296	19,8%
10-20%	35	2,3%
20-30%	5	0,3%
30% and more	9	0,6%
0%	1040	69,6%
Do not know	108	7,2%
Number of HHs consuming fruits	**1493**	**100,0%**

As it can be seen from table 29 above, similarly sceptical Armenian consumers are towards paying extra for packaged fruits and vegetables. Over 3/4 are not willing to pay extra for packaged crops and only about 20% would pay extra **but not more than 10%.**

Regarding those new varieties of fruits, vegetables and berries which Armenian consumers would like to find on the market the picture is rather obvious: about 80% of surveyed HHs mentioned that "there is no such fruit" followed by 18% of "difficult to answer" (see Annex 5, Tables 5.1-5.4). While nearly 98% of HHs seem to be quite happy with the assortment of fruits, vegetables and berries available in the market, the rest 2-3% grouped together listed numerous names including both:\ those that are available (e.g. mango, grapefruit, asparagus etc.) and the exotic ones they have only heard about.

6.2 The main perception of consumers about general development of the horticulture sector in Armenia

This section of the report tries to capture consumers' opinions and perception regarding several issues such as steps to be undertaken to stimulate consumption of locally produced fruits and vegetables, promotion methods and ways, most efficient information channels etc. These data by nature are more applicable for the project activities design and future implementation.

As shown in table 30 below, 28% of surveyed HHs mentioned that increased incomes will stimulate consumption of locally produced fruits and vegetables, followed by 22% of HHs referring to price reduction (actually the same argument on purchasing power). About 1/4 of HHs consider that consumption will not change (can be assumed that this segment is quite happy with the existing situation).

About 10% of HHs thinks that there is a potential to increase consumption volumes once the quality of local fruits and vegetables increases.

Table 30: Incentives to HHs to consume more locally produced fruit (first answer)

Answers	Number of HHs	% of HHs
Increased income	418	27,9%
Nothing, consumption volumes will not change anyway	375	25,0%
Price reduction	328	21,9%
Improved quality of locally produced fruit	153	10,2%
Do not know/difficult to answer	116	7,7%
Assurance of fruit safety (absence of pesticides, herbicides)	60	4,0%
Cultivation of new varieties of fruit	19	1,3%

Willingness	7	0,4%
Packaging	4	0,3%
Revival of local varieties of crops	3	0,2%
Improved service in trade outlets	3	0,2%
Improved external look/appearance	3	0,2%
Other*	11	0,7%
Total Number of HHs	1500	100,0%

*Other answers included: Grown in winter; Advertisement; Orange grown in Armenia; Decreased exports; Market is getting closer; Decreased imports; Labelling

Table 31: Incentives to HHs to consume more locally produced vegetables (first answer)

Answers	Number of HHs	% of HHs
Increased income	410	27,3%
Nothing, consumption volumes will not change anyway	385	25,7%
Price reduction	327	21,8%
Improved quality of locally produced fruit	137	9,1%
Do not know/difficult to answer	126	8,4%
Assurance of fruit safety (absence of pesticides, herbicides)	67	4,5%
Packaging	18	1,2%
Willingness	7	0,4%
Cultivation of new varieties of fruit	4	0,3%
Other	19	1,3%
Total N of HHs	1500	100,0%

Though, the level of satisfaction with existing varieties in the market amongst Armenian consumers seems to be quite high, interesting answers were received while assessing promotion mechanisms to stimulate consumption of fruits and vegetables.

Thus, over 40% of surveyed HHs believes that organisation of educational events on usefulness of fruits and vegetables in schools, followed by almost the same attitude towards TV commercials (26%) and in-store promotions (25.1%) are efficient promotion tools.

Table 32: HHs perception of the efficient promotion tools

Answers	Number of HHs	% of HHs
TV commercials	390	**26,0%**
Radio commercials	50	3,3%
Press ads	65	4,3%
In-store promotion campaign	376	**25,1%**
TV programs raising awareness	81	5,4%
Radio programs raising awareness	90	6,0%
Press materials raising awareness	263	17,5%
Leaflets on F&V usefulness	55	3,7%
Social advertisement	306	20,4%
Organising educational events on F & V usefulness in schools	642	**42,8%**
Nothing	104	6,9%

Price reduction	68	4,5%
Don't know	60	4,0%
Other	112	7,5%

In the meantime, while analysing the level of trust towards various sources of information the highest average score (3.7 of 5 possible) was received by such an informal source as "friends, relatives" ("word of mouth" information dissemination mechanism). Second reliable information source were considered to be the producers/farmers themselves (!).

The rest sources of information such as: sales outlets/personnel, state authorities, internet and mass media with average 2.3-2.4 (of 5) are the least trusted sources.

Table 33: Level of trust towards sources (1-the highest, 5-the lowest).

Sources of information	Mean	% of HHs					
		1	2	3	4	5	DNK
Friends, relatives	3,7	12,8	6,5	15,5	22,1	39,9	3,3
Producers	3,1	20,1	9,8	28,3	14,7	23,3	3,9
Sales outlets/ salespeople	2,4	35,5	16,5	23,4	12,3	9,5	2,9
Relevant state authorities	2,4	39,6	13,2	19,8	10,4	10,8	6,2
Internet	2,4	17,6	5,1	7,4	6,2	5,1	58,5
Mass media	2,3	40,5	15,6	21,2	9,3	8,4	5,1

7. CONCLUSIONS AND RECOMMENDATIONS

Conducted field assessment, data processing and analysis allowed the research team to generate the following general ***findings/conclusions***, based on which corresponding actions/steps can be developed by the project team to expand market opportunities for products from Meghri:

- Armenian market of fruits and vegetables has a potential to grow. While about 60% of surveyed HHs belong to "not-poor" social group and consume as much fruits and vegetables as found necessary, the rest 40% of HHs can increase both: consumption volumes and varieties (throughout all seasons) once their incomes increase.

- Armenian consumers are quite ***conservative*** and in general the level of satisfaction with existing varieties and supply/availability of fruits and vegetables is rather high: almost 1/2 (or 44%) considers Armenian fruits as "very good"/with no disadvantages and over 90% of consumers had difficulties to name new varieties not available in the market nowadays.

- Amongst factors influencing purchase of fruits and vegetables priority is given to ***freshness, price, external look/appearance*** and ***taste***. *Sorting, grading, packaging, labelling* and other factors are of significantly less importance to Armenian consumers.

- Varieties grown in Meghri are generally *known* and *well accepted* by Armenian consumers[12], though for instance ***persimmons*** can be promoted to substitute imported Georgian ones.

- Though in general ***"geographic brand name" of Meghri*** region is known and well accepted, nevertheless proper promotion and actions to raise visibility of the source/origin (Meghri region) can help a lot to stimulate the sales of Meghri products. (Often products from other regions are being promoted under Meghri "brand").

- There is a limited, but still a sizeable ***segment of consumers ready to pay extra price*** for added value of the product (e.g. sorting, grading, packaging, labelling, being organic etc.) At the same time, ***10%*** is the marginal increase in price that can be accepted while paying extra for mentioned improvements.

- ***Retail chain development*** over the past decade almost eliminated the difficulties of finding and buying preferred varieties of fruits and vegetables. Supermarkets and grocery stores continue capturing market shares from traditional retail markets (though the latter still remain the number one "place of purchase"), greengroceries and street sale outlets.

[12] 45% of HHs consuming pomegranate, over 40% of fig consuming HHs and 27% of HHs consuming persimmons prefer those grown in Meghri

- While choosing "place of purchase" the following factors are valued the most by the consumers: ***convenience, assortment, price*** and ***freshness.***

- The most important factors of fruit and vegetable consumption are ***usefulness, healthiness*** and ***taste***, therefore the loyalty of Armenian consumers towards locally produced fruits and vegetables is based on perception that the latter ones are *fresh*, *tasty* and *ecologically clean*.

- While assessing consumers' attitude towards the most effective promotion mechanisms to stimulate consumption of fruits and vegetables, "educational events on usefulness/healthiness of fruits and vegetables in schools" were mentioned as the leading one, followed by TV commercials and in-store promotion activities. As we can see, ***usefulness/healthiness*** is the key factor cross-cutting and highlighted in all the sections of the report.

- In the meantime mass media, state, internet and sales outlets/personnel are not considered as reliable source of information about food product as ***friends/relatives*** ("word of mouth") and ***producers*** themselves. This is important to consider while designing promotion strategies and related project interventions.

ANNEXES

ANNEX 1: List of experts approached

Expert Name	Occupation
Vardan Hambardzumyan	President of Federation of Agricultural Associations of Armenia (FAA)
Sergey Matevosyan	Agricultural Marketing Specialist, Team Leader on Development of Business Models (UNDP)/Marketing Director in "Resolution Consultants" LLC
Nora Alanakyan	Marketing Specialist, Water-to-Market Activity/ACDI-VOCA of MCA/MCC
Vardan Torchyan	High Value Agriculture (HVA) Specialist, Water-to-Market Activity/ACDI-VOCA of MCA/MCC
Sevada Ghazaryan, Sole Proprietor	Fruits and Vegetables Retail Outlet Owner
Artur Voskanyan, Sole Proprietor	Fruits and Vegetables Wholesale Outlet Owner
Sergey Shakhnazaryan	Arevik Supermarket, Fruits and Vegetables Section Manager

ANNEX 2. Household typologies and characteristics of fresh fruit and vegetable consumption

Additional tables and graphs related to Section 2:

Table 2.1: Purchase/consumption of fruits per capita in urban areas of RA

Season	Yerevan		Other urban areas		Total	
	Mean (kg.)	SD	Mean (kg.)	SD	Mean (kg.)	SD
Spring	8,7	9,3	5,6	6,6	7,8	8,7
Summer	17,1	17,3	18,6	19,6	17,5	17,9
Autumn	14,5	16,5	13,2	14,0	14,2	15,9
Winter	7,6	9,1	4,3	7,5	6,8	8,8
Christmas Holidays	4,0	3,0	3,9	2,8	4,0	2,9
All seasons	12,0	10,9	10,4	9,5	11,6	10,6

Table 2.2: Purchase/consumption of fruits per capita per social group

Season	Extremely poor		Poor		Not-Poor	
	Mean (kg.)	SD	Mean (kg.)	SD	Mean (kg.)	SD
Spring	3,7	4,9	6,2	7,0	9,5	9,6
Summer	10,6	10,4	15,2	13,9	20,4	20,4
Autumn	8,6	10,9	12,2	13,0	16,5	17,7
Winter	3,0	4,2	4,7	6,3	8,3	10,0
Christmas Holidays	2,3	1,3	3,5	2,5	4,6	3,2
All seasons	6,4	5,9	9,6	7,8	13,8	11,8

Table 2.3: Purchase/consumption of vegetables per capita in urban areas of RA

Season	Yerevan		Other urban areas		Total	
	Mean (kg.)	SD	Mean (kg.)	SD	Mean (kg.)	SD
Spring	8,7	9,3	5,6	6,6	7,8	8,7
Summer	17,9	20,7	20,2	22,6	18,5	21,2
Autumn	15,9	20,3	25,6	32,2	18,5	24,4
Winter	6,9	9,2	4,8	8,5	6,5	9,1
Christmas Holidays	1,4	1,3	1,5	1,8	1,4	1,4
All seasons	12,2	11,1	13,3	12,5	12,5	11,5

Table 2.4: Purchase/consumption of vegetables per capita per social groups

Season	Extremely poor		Poor		Not-Poor	
	Mean (kg.)	SD	Mean (kg.)	SD	Mean (kg.)	SD
Spring	3,7	4,9	6,2	7,0	9,5	9,6
Summer	11,4	13,9	16,9	21,2	21,5	22,8
Autumn	14,6	22,7	15,8	17,6	21,1	27,5
Winter	3,7	4,7	5,5	8,6	7,5	9,7
Christmas Holidays	0,9	0,6	1,3	1,6	1,5	1,4
All seasons	7,9	7,6	10,8	9,2	14,6	12,8

Table 2.5: Yerevan: Average consumption of fruits per household through the seasons

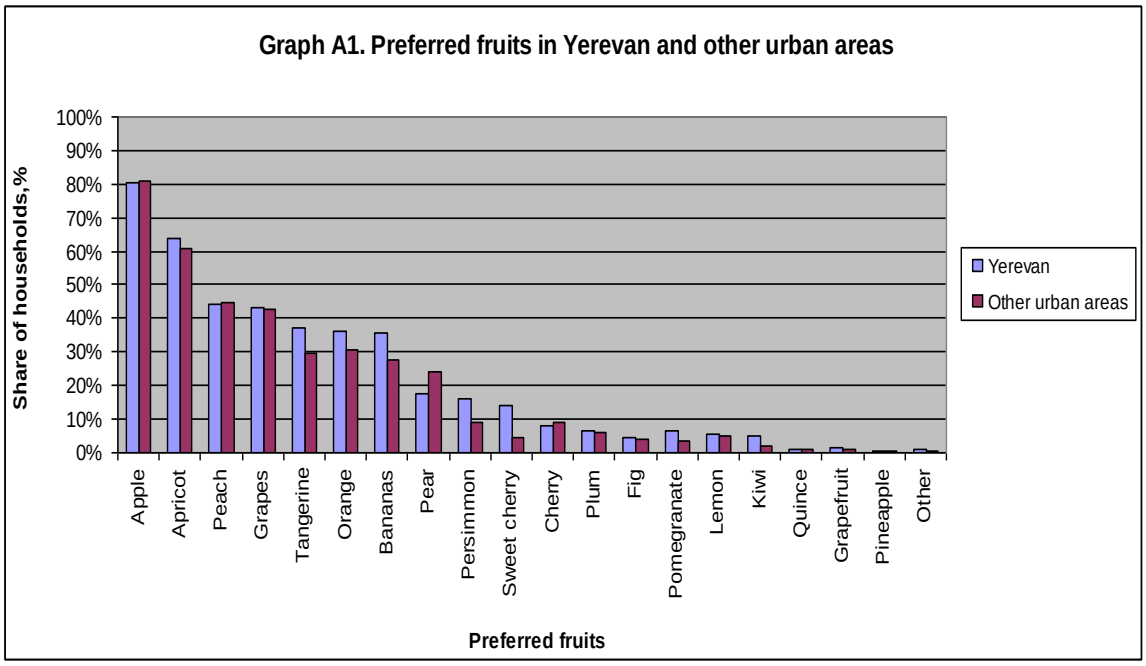
Variety of fruit	Spring		Summer		Autumn		Winter	
	% of HHs*	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)	% of HHs *	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)
Apricot	3.3%	18.1	62.8%	57.3	4.5%	27.7	0.1%	10.0
Peach	0.4%	9.0	31.3%	26.1	36.4%	28.7	0.7%	17.0
Quince	0.0%	0.0	0.1%	2.0	1.3%	9.6	0.0%	0.0
Pear	4.2%	9.4	11.0%	10.9	15.0%	12.3	7.9%	10.0
Plum	0.5%	18.3	5.5%	17.3	2.6%	17.6	0.0%	0.0
Cherry	2.4%	8.9	7.2%	15.5	0.3%	12.7	0.0%	0.0
Sweet	4.3%	14.6	13.4%	25.2	0.8%	14.0	0.0%	0.0
Grapes	4.5%	9.7	22.0%	20.6	42.1%	28.3	15.3%	12.1
Bananas	32.2%	7.6	27.0%	6.6	31.8%	7.8	34.7%	9.0
Orange	9.3%	6.2	3.3%	7.9	22.8%	9.2	35.0%	11.4
Tangerine	4.0%	9.1	0.9%	9.6	22.2%	11.9	35.9%	17.8
Lemon	4.9%	4.5	4.8%	4.1	5.2%	4.7	5.5%	5.0
Kiwi	2.9%	3.2	2.0%	2.9	3.3%	5.2	5.0%	4.9
Pineapple	0.5%	9.3	0.3%	18.3	0.5%	13.0	0.6%	8.7
Grapefruit	0.4%	5.3	0.3%	3.3	0.5%	5.8	1.4%	6.9
Other (mulberry, guava, mango, papaya etc.)	0.4%	9.3	0.5%	13.6	0.5%	11.0	0.5%	8.9

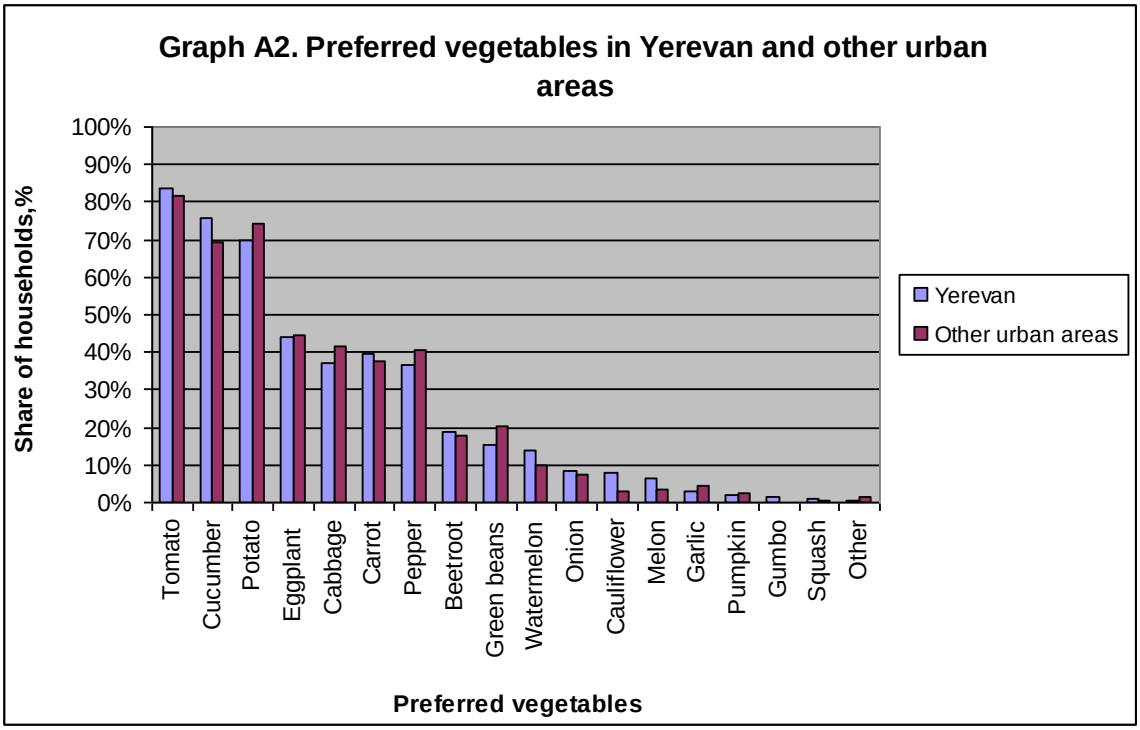
* Of households consuming fruits

Table 2.6: Regional towns: Average consumption of fruits per household through the seasons

Variety of fruit	Spring		Summer		Autumn		Winter	
	% of HHs*	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)	% of HHs *	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)
Apricot	12.6 %	14.3	60.3 %	46.7	2.8%	11.0	0.0%	0.0
Peach	0.3%	40.0	33.4 %	19.4	31.7 %	23.3	0.5%	5.0
Quince	0.0%	0.0	0.5%	7.5	0.8%	5.7	0.0%	0.0
Pear	5.0%	11.9	14.8 %	9.6	20.4 %	13.3	8.0%	12.3
Plum	0.8%	6.7	5.5%	11.3	5.5%	10.2	0.0%	0.0
Cherry	2.8%	11.9	8.0%	13.8	0.3%	45.0	0.5%	6.0
Sweet	3.3%	8.5	3.8%	13.2	0.5%	4.5	0.3%	3.0
Grapes	0.5%	16.5	18.3 %	15.7	40.7 %	23.9	13.6%	11.1
Bananas	22.1 %	6.8	17.3 %	7.2	20.9 %	7.2	26.9%	7.7
Orange	7.5%	7.4	4.5%	6.7	16.8 %	9.9	29.1%	11.9
Tangerine	3.5%	6.1	0.8%	2.3	17.3 %	10.3	27.4%	13.6
Lemon	4.5%	3.2	4.3%	2.7	4.5%	3.1	4.8%	3.7
Kiwi	1.0%	4.7	0.8%	5.4	2.0%	3.9	2.0%	4.5
Pineapple	0.0%	0.0	0.5%	12.5	0.8%	5.2	1.5%	4.8
Grapefruit	12.6 %	14.3	60.3 %	46.7	2.8%	11.0	0.0%	0.0
Other (mulberry, guava, mango, papaya etc.)	0.3%	40.0	33.4 %	19.4	31.7 %	23.3	0.5%	5.0

* Of households consuming fruits


Graph A1. Preferred fruits in Yerevan and other urban areas
Share of households,%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Apple
Apricot
Peach
Grapes
Tangerine
Orange
Bananas
Pear
Persimmon
Sweet cherry
Cherry
Plum
Fig
Pomegranate
Lemon
Kiwi
Quince
Grapefruit
Pineapple
Other
Yerevan
Other urban areas
Preferred fruits


Graph A2. Preferred vegetables in Yerevan and other urban areas
Share of households,%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Tomato
Cucumber
Potato
Eggplant
Cabbage
Carrot
Pepper
Beetroot
Green beans
Watermelon
Onion
Cauliflower
Melon
Garlic
Pumpkin
Gumbo
Squash
Other
Yerevan
Other urban areas
Preferred vegetables

ANNEX 3. Purchasing habits of fresh fruits and vegetables

Additional tables and graphs related to Section 3:

Table 3.1: Primary reasons for fruits consumption

% of HHs consuming fruits

Reasons	Yerevan	Other urban areas	Total
It's useful	70%	74%	71%
It's healthy	54%	53%	54%
It's tasty	35%	31%	34%
For children	18%	22%	19%
It's convenient for serving guests	11%	7%	10%
We love it	6%	5%	6%
Is rich of vitamins	4%	3%	4%
It's a natural need	1%	3%	2%
It's dietary	1%	1%	1%
As a foodstuff	1%	3%	2%
Other reasons (to make juice, it's cheap (compared to meat),it's nutrient, it's convenient in season)	2%	2%	2%

Table 3.2: Primary reasons for vegetables consumption

% of HHs consuming vegetables

Reasons	Yerevan	Other urban areas	Total
It's useful	67%	72%	68%
It's healthy	60%	54%	58%
It's tasty	28%	30%	28%
For children	10%	9%	10%
To diversify family diet	8%	9%	9%
We love it	5%	4%	5%
Is rich of vitamins	3%	4%	4%
It's convenient for serving guests	2%	2%	2%
It's cheap	2%	2%	2%
It's a natural need	2%	1%	1%
Other reasons (it's a habit, it's dietary, it's nutrient,)	2%	5%	3%

Table 3.3: Source of fruits acquisition

% of HHs consuming fruits

Answers	Yerevan	Other urban areas	Total
Purchase only	69,5%	56,8%	66,1%
Mainly purchase	14,9%	20,9%	16,5%
Both purchase and get from own garden or relatives' (friends') gardens	13,5%	19,3%	15,0%
Mostly do not purchase, but get it from own garden or relatives' (friends') gardens	1,7%	3,0%	2,1%
Never purchase	0,4%	0,0%	0,3%
Total N of HHs consuming fruits	**1095**	**398**	**1493**

Table 3.4: Source of vegetables acquisition

% of HHs consuming vegetables

Answers	Yerevan	Other urban areas	Total
Purchase only	75,3%	63,9%	72,3%
Mainly purchase	13,9%	18,8%	15,2%
Both purchase and get from own garden or relatives' (friends') gardens	9,4%	13,0%	10,4%
Mostly do not purchase, but get it from own garden or relatives' (friends') gardens	1,0%	3,8%	1,7%
Never purchase	0,4%	0,5%	0,4%
Total N of HHs consuming vegetables	1097	399	1496

ANNEX 4. Trends and opportunities in the fresh fruits and vegetables markets

Additional tables and graphs related to Section 4:

Table 4.1: Yerevan: Average consumption of fruits (grown in Meghri) per household through the seasons

Variety of fruit	Spring		Summer		Autumn		Winter	
	% of HHs*	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)
Fig	0.6%	2.6	15.1%	4.7	44.5%	5.4	2.2%	3.7
Persimmon	10.7%	1.1	3.3%	1.8	75.7%	12.9	67.0%	10.0
Pomegranat	2.6%	6.3	2.4%	3.5	43.0%	4.4	62.7%	4.2
Apple	93.9%	27.6	89.8%	21.4	96.8%	30.8	96.2%	31.4

* Of households consuming fruits

Table 4.2: Regional towns: Average consumption of fruits (grown in Meghri) per household through the seasons

Variety of fruit	Spring		Summer		Autumn		Winter	
	% of HHs*	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)	% of HHs *	Average consumption of household per season (kg.)	% of HHs*	Average consumption of household per season (kg.)
Fig	0.3%	2.0	19.8%	5.9	43.2%	5.5	0.0%	0.0
Persimmon	0.0%	0.0	0.3%	2.0	67.6%	13.5	45.0%	10.0
Pomegranate	0.8%	2.3	4.3%	4.5	35.7%	5.5	50.3%	4.2
Apple	91.0%	23.8	86.2%	19.9	95.2%	26.1	91.5%	28.9

* Of households consuming fruits

ANNEX 5. Consumers' perception on perspectives of fruit and vegetable consumption increase in Armenia

Additional tables and graphs related to Section 6:

Table 5.1: Willingness to buy new varieties of fruits

	Number of HHs	% of HHs
There is no fruit like that	1178	78,9%
Difficult to answer	251	16,8%
Mango	10	0,7%
Loquat (Eriobotrya japonica)	9	0,6%
Guava	7	0,5%
Feijoa	7	0,5%
Avocado	6	0,4%
Papaya	5	0,3%
Grapefruit	4	0,3%
Other (27 varieties)	38	2,5%
Number of HHs consuming fruits	**1493**	**100,0%**

Table 5.2: Willingness to buy new varieties of vegetables

	Number of HHs	% of HHs
There is no vegetable like that	1215	81,3%
Difficult to answer	260	17,4%
Laminaria	3	0,2%
Broccoli	3	0,2%
Asparagus	2	0,2%
Celery cabbage	2	0,1%
Other (28 varieties)	16	1,0%
Number of HHs consuming vegetables	**1495**	**100,0%**

Table 5.3: Willingness to buy new varieties of berries

	Number of HHs	% of HHs
There is no berry like that	1195	80,0%
Difficult to answer	264	17,7%
Cranberry	19	1,3%
Cowberry	18	1,2%
Strawberry	2	0,1%
Mountain ash	2	0,1%

Table 5.4: How would you prefer those fruits, berries to be sold?

Appearance	New fruits (% of HHs)	New vegetables (% of HHs)	New berries (% of HHs)
Sorted and graded	15,4%	10,0%	2,2%
Packaged	16,7%	30,0%	20,0%
Labelled	9,0%	10,0%	4,4%
It doesn't matter	52,6%	45,0%	64,4%
Not packaged	1,3%		
Fresh	2,6%		
Natural	1,3%	5,0%	6,6%
In baskets	1,3%		
Frozen			2,2%
Total number of HHs willing to buy new varieties of crops	**78**	**20**	**45**