



NUTRITIONAL DIVERSIFICATION IN ARMENIA

Research findings

Nutrition today continues to be a considerable challenge in Armenia. Low income level of the population, conditioned with social-economic hardship, as well as the nutrition culture and education level, play a prominent role in malnutrition among the population of Armenia. More importantly, the improvement of nutrition in Armenia requires active engagement of all stakeholders, including national authorities and civil society in coordination with nutrition policy development and implementation processes, thus promoting effective application accountability and monitoring mechanisms. For the implementation of national policies, systematic measures need to be taken for poverty reduction, as well as increasing knowledge and awareness of the population on healthy nutrition, with a particular focus on women's nutrition.

SUMMARY

The state of the population's health is highly conditioned with the food people use. It's not a secret that **unhealthy nutrition** plays an essential role in the majority of factors leading to non-communicable diseases.

Within the framework of the EU funded "Improving regional food security through national strategies and smallholder production" project, Oxfam in Armenia has initiated a study on the state of nutrition of the population of Armenia. The study was conducted by the "Advanced Public Research (APR) Group" NGO. The research enabled the identification of **food accessibility, availability and use** for the RA population, as well as **national nutrition policies and strategies**.

Two main characteristics of food accessibility – physical and economic – have been included in the research. The research shows that physical accessibility of food in Armenia is highly affected by the geographic and administrative characteristics of the community, and by seasonality, especially during the off-season. Border and high mountain regions are the most vulnerable in terms of physical and economic access to food for vegetables, food stuffs and fruit. Regarding financial accessibility, the financial/economic situation, a critical factor in the context of households' access to food, has reportedly worsened compared to the previous year. A significant proportion of the population does not have enough money for food. They have to borrow money, and reported that their food expenditures represent more than half of their income. This trend is also increasing, leading to people who face financial hardship in accessing food, which leads to undiversified diets.

The relatively lower level of usage of certain foods is not always due to availability or accessibility. Here, it's important to outline the knowledge on nutrition and healthy food, food purchase, as well as cooking, processing and using habits. Additionally, it's worth looking at whether nutrition is balanced or not; including quality, quantity etc. The Dietary Diversity Score (DDS, which measures the diversity level of diets of households) for all households, is 8.66 (out of 12), for women aged 15–49 it is 5.11 (out of 9) (lower in mountainous areas and for single women).

When buying food, people mostly pay attention to the design, production/storing conditions, and label/manufacturer. Although the price also matters, it wasn't noted as a key factor for food purchase.

In the context of food use, it's also important to look at the challenges of child nutrition which depends on the administrative status of the community and, to some extent, the education level of mothers. It's worth outlining that 61.43% of children are fed solely with breast milk.

National authorities in Armenia have adopted a number of legal and legislative acts that are addressing the nutritional issue in the country, such as the Law on Food Safety, Food Security, Rights of Children, Advertisement, Water Code etc. In addition, there several government policies/strategies such as the Strategic Program Promoting Healthy Lifestyle, Child Nutrition Concept, as well other different government and ministerial decrees and instructions on food safety, school nutrition, hygiene and disease prevention.

Despite the availability of nutrition policies and strategies that mostly comply with international requirement, they still lack proper control and assessment mechanisms for implementation (accompanied with low awareness and public education on healthy eating and nutrition. Lack / inadequate allocation of required resources (both human and financial) are also key obstacles for effective implementation of national nutritional policies and strategies.

RECOMMENDATIONS

The availability of national nutrition policies, and at the same time the considerably high level of malnutrition at the population level, reveals gaps in monitoring and assessment of efficiency of existing policies. In order to ensure positive impact and changes at lower levels, it's highly recommended to develop and apply practical and efficient tools for monitoring of policy implementations to identify shortcomings in national policies and develop actions and/or revise existing policies, as well as comprehensive oversight for fulfilling sanitary norms and requirements by physical and legal entities.

Additionally, separate approaches and mechanisms should be developed regarding the nutrition of teenagers and school-age children:

- Ensure oversight/monitoring of the organization of nutrition for pre-school and school children,
- Development of a system of periodical data collection and assessment on nutrition of teenagers and school-age children.
- Initiate awareness campaigns to promote healthy lifestyles and healthy nutrition, as well as to raise the issue regarding the unhealthy nutrition habits among teenagers and school-age children,
- Undertake actions aimed at forming healthy nutrition habits in educational facilities, promote/support the establishment of favorable conditions for healthy nutrition,
- Monitoring and assessment of “Healthy Lifestyle” curricula in educational facilities,
- Banning the sale of unhealthy food rich in fats, trans-fats, free sugars and salt in child education and entertainment facilities,
- Professional training for neonatologists and dietitians,
- Undertake steps to avert violations of the International Code on Marketing of Artificial Milk Formula, as well as improving national legislation on this issue,
- Establishment and application of punitive mechanisms for violating the RA Law on Advertising,
- Banning advertisements of food and alcohol harmful to the public and children according to the RA Law on Advertising.

Public engagement in the policy development and implementation is a key to transparent implementation of nutrition policies which, on one hand, will increase public trust in those policies and, on the other hand, improve accountability of the government among the general public.

However, for the improvement of nutrition in the country it's equally important to increase public awareness on healthy nutrition, which should target the knowledge on healthy nutrition as well as consequences of malnutrition, particularly among children. Separate attention should be paid to women nutrition whose dietary diversity, according to the research findings, is low. The other equally important cornerstone of awareness raising and education is to increase the public demand for healthy nutrition and healthy lifestyle, which will become an indirect tool influencing government actions (e.g. parental monitoring of nutrition at school and pre-school facilities and filing complaints in case of poisoning etc). Awareness raising should be a priority for both the government and civil society organizations engaged in healthy nutrition and lifestyle. Particular focus should also be paid to:

- Promote the use of several types of food products, particularly pumpkins (as a Vitamin A rich vegetables), as well as meat of animal organs (as a source of iron) etc,



- Increase awareness of the population on healthy nutrition by explaining the benefits and harm of different types of food, focusing particularly on Vitamin A as well as iron rich food (seafood, meat, meat of animal organs etc).
- Increase awareness of the population on what to pay attention to when buying food. For instance, when buying vegetables, respondents mentioned that external appearance is important for them, but very few know what is good or bad in terms of appearance. Special focus should be paid to expiration dates and/or storing guidelines, as well as the importance of taking into account the level of cholesterol in food, the nutritional value of food, etc,
- Engage men as well in the awareness raising campaign, explaining the risks related to abusing salt, eating outside and/or using unhealthy food, smoking and drinking alcohol,
- Increase awareness among women regarding child nutrition; particularly on the nuances involved in the appropriate nutrition of children under 6 months old (breast feeding, use/disuse of water, etc).

Government priorities and actions in regard to decreasing unhealthy nutrition are underfunded and need more resources. Increased government funding should target not only awareness raising and effective monitoring, but also building the capacity of relevant government structures and involving the required number qualified specialists on nutrition.

RESEARCH FRAMEWORK

The goal of the research was to study the current nutritional state of the population of Armenia and to analyze current national policies. The main objectives were:

- To identify the current state of, and changes in, food accessibility for the population of Armenia,
- To study food consumption patterns of the population,
- To identify factors influencing food purchase,
- To study people's knowledge, attitude and behaviour/practice related to healthy nutrition,
- To analyze national policies related to nutrition, legislation, strategies and their implementation.

Quantitative interviews were organized in 1,600 households in all 10 regions of Armenia and the capital Yerevan. In addition, **qualitative methods** such as interviews with key informants and policy analysis were applied.

According to the definition of the World Health Organization, the pillars of food security are food availability, food accessibility and food use¹. The UN Food and Agriculture Organization defines another pillar - food sustainability².

Food Availability: *permanent availability of a sufficient quantity of food conditioned by the following factors:*

- Food production/import
- Distribution network

Food accessibility: *availability of appropriate resources for acquiring food conditioned by the following factors:*

- Economic accessibility
- Physical accessibility

¹ WHO. "Food Security".

² FAO Agricultural and Development Economics Division (June 2006). "Food Security" (PDF) (2)

Food use: right use of available and accessible, as well as appropriate quality and quantity of food, required for effective functioning of organs and health. Food use is conditioned by the following factors:

- Knowledge of nutrition and healthy food
- Use of sufficient quality water
- Assurance of food safety norms and hygiene
- Customs and culture related to acquiring, processing and use of food

Sustainability: Sustainability of the above mentioned pillars over time and conditioned by the following factors:

- Seasonality
- Stability of sources of food
- Volatility in food availability, accessibility and use, conditioned by weather, socio-economic and other macro level factors.

QUANTITATIVE RESEARCH FINDINGS

Accessibility for the majority of vegetables and fruits has an extremely seasonal character. For the rest of food products, seasonality has a lower impact. Pumpkin, red sweet pepper and herbs used as ingredients in food, green beans, squash, green pepper, corn, cauliflowers and potato, are extremely seasonal vegetables. The inaccessibility ratio for those vegetables ranges from 1.1% to 39.8%. However, inaccessibility is much higher in rural, border and mountainous/high mountainous areas and varies from 0.9% to 74.4%. The highest inaccessibility rates during off-season were recorded for tomato, red sweet pepper etc.

On an annual basis, food accessibility for seasonal and non-seasonal food stuffs is quite different. Thus, during the high season, accessibility figures are almost equal in rural and urban, border and non-border, mountainous/high mountainous and lowland communities (Inaccessibility hasn't exceeded 10%). However, during the off-season (depending on specific food products in winter or spring), figures of rural, border and mountainous/high mountainous communities essentially differ from urban, non-border and lowland communities. (The difference between rural and urban communities has reached 70%, while the difference between mountainous/high mountainous and lowland communities made up 40% and 35% for border and non-border communities).

The fruit inaccessibility level varies between 1.8% and 65.4% (out of Vitamin A rich fruit: apricot - 5.4% - 65.4%; peach - 4.3% - 57.8%; melon - 3.1%-53.2%; persimmon - 7% - 48.2%). *As in case of vegetables, inaccessibility in rural, border and mountainous/high mountainous communities is higher, and during off season sometimes increases to 95.3%.* There are only 3 types of fruit that are equally accessible all year round; apples, bananas, lemons (inaccessibility rate varies from 0.5% to 3.8%). Only apples are equally accessible in all types of communities. In the case of bananas and lemons, inaccessibility in rural, border and mountainous/high mountainous communities reaches 11.6%.

Of Vitamin A rich vegetables, only carrots and herbs used as spices are accessible for the majority of the population all year round. As for Vitamin A rich fruit, only dried apricot and peach accessibility is not that much conditioned according to the season.



Especially during the off-season, inaccessibility of both vegetables and fruits in rural, border and mountainous/high mountainous communities is higher.

Parallel with the physical access to food, issues related to **financial accessibility** were also identified;

According to the research, the majority of Armenian population is nourished with products containing carbohydrates. They cannot afford fruits, meat and seafood enriched with vitamins, proteins and iron. High prices and low purchasing capacity are the most prevalent reasons for limiting the use of certain foods when physically available (meat, fish, vegetables and fruit). For 46.4% of population, during last 12 months there have been months when food was insufficient for their family. For 27.4% money is not sufficient even to buy food. Almost half of the population spends on more on food when compared to the previous year and, in the case of 26.1%, the amount has remained the same. More than 25% of households spent 20,001 - 54,000 AMD (41 – 112 USD) on food, while almost 25% of households had a monthly income of 54,001-100,000 AMD (112-208 USD). Similarly, more than 25% spent 54,001-100,000 AMD on food, while the monthly income of more than 25% of the population was 100,001 - 200,000 AMD (208-416 USD). A considerable part of the population spent at least half of their monthly income on food. In 49% of households, the monthly amount spent on food has increased, while in 39.1% of cases, the monthly household income has decreased. Only 36.6% never borrow money to buy food.

Figure 1. Spending on Food

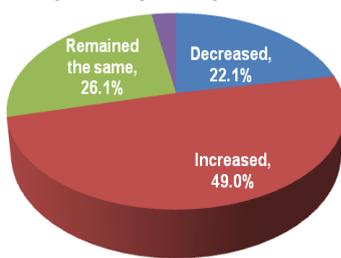
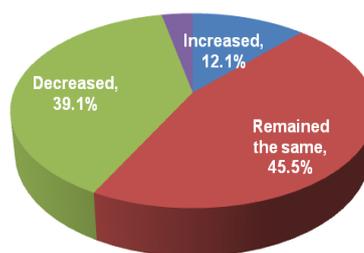


Figure 2. Household Income



Bread and potatoes are **the most popular food** products in Armenia and the number of limited users of these products doesn't exceed 6%. Out of Vitamin A rich vegetables, carrots, red sweet peppers and pumpkins are consumed in Armenia. In the case of pumpkins, in both during high and low seasons, there is a considerable share of people who don't use them (correspondingly 31.3% and 74.2%). In both cases the reason given was the lack of desire (correspondingly 94.7% and 76.6%), which proves the lack of a pumpkin consuming culture. Vitamin A rich dark green leafy vegetables (mostly used as ingredients) are very popular in Armenia.

The most popular Vitamin A rich fruit in Armenia are apricots, peaches, melons and persimmons. The use of all these fruits is purely conditional on the season and the number of people who don't use these fruits during the low season comprises 88.4%-95.6%. The lack of trust regarding food during the off-season is explained by respondents that each fruit/vegetable should be used only during its season.

Meat of animal organs is considered an important source of iron. In Armenia it doesn't have any seasonal character. However, about 1/3 of interviewed respondents (33.2%) either limits or doesn't use meat of animal organs at all. Respondents note high price and low purchasing power as the main reason. The number of households using meat and fish products is considerably low (23.4%-34.1%), which is mostly conditioned by high prices and low purchasing power (42%-53%). About 15.5% does not consume sausages and the majority (89%) simply don't want to.



Box 1. Usage level of certain foods.

Food	Do not use at all	Main reason – “Do not want”
<i>Pumpkin / squash</i>	31.3%	94.7%
<i>Meat of animal organs</i>	14.7%	85.5%
<i>Processed meat</i>	15.5%	89%

The household dietary diversity rate in Armenia is 8.66 (out of 12)³.

More than 90% of households have access (use) to wheat/cereals, spices and drinks, other vegetables, dairy, fats and oils. Fish and seafood and meat of animal organs come in last place. Out of Vitamin A rich foods, dairy products were used by 91.81% of households, dark green leafy vegetables by 77.44%, eggs by 55.81%, Vitamin A rich vegetables and tubers by 42.38%, Vitamin A rich fruit by 39.19%, and meats of animal organs by 3.38%. Meat and meat products as a source of iron are accessible to about 50% of the population. Less than 10% mentioned fish and meat of animal organs.

Box 3. Dietary diversity rates.

Groups of food products	% of households
Cereals	99.81%
Spices, condiments and beverages	96.00%
Other vegetables	94.63%
Milk and milk products	91.81%
Oils and fats	90.81%
Other fruits	89.38%
Sweets	85.81%
White roots and tubers	75.94%
Dark green leafy vegetables	70.44%
Eggs	55.81%
Meat and meat products	50.50%
Vitamin A rich vegetables and tubers	42.38%
Vitamin A rich fruit	39.19%
Legumes, nuts and seeds	23.06%
Fish and seafood	6.13%
Meat of animal organs and meat products	3.38%

³ The calculation methodology is based on the Guidelines for measuring household and individual dietary diversity, 2013, Food and Agriculture Organization of the United Nations. Respondents were provided with a list of 16 types of food products (a part of these groups was merged thus forming 12 categories of food products) and were asked to mention whether any of household members had used any of the food products from each group a day before. 8.66 scores means that 8.66 out of 12 food categories is accessible for households.



The household dietary diversity rate shows households' access to food, while at the individual level it refers to the nutritional state of individuals.⁴ average dietary diversity rate among women aged 15-49 is 5.11, (out of 9). This means that women use 5 food types (out of 9) per day. Out of Vitamin A rich food products, dairy and dark green leafy vegetables have been mentioned by a majority of respondents. However, no one mentioned any product rich in iron. Here again the lowest rates were registered for meat of animal organs and meat products (2.77%), fish and seafood (6.19%) and highest rates for cereals (98.05%). To some extent, malnutrition among women can be related to age changes in the body, inadequate dietary practice, or lack of activity and exercise, which are major problems among Armenian women.

The average score of the dietary diversity among children aged 6-59 months is 4.44 (out of 8)⁵. The diversity score increases parallel to the age of the children until 24-29 months old. This rate depends on the administrative status of the community and to some extent on the mother's education level. The majority of children not drinking water are under 6 months old. 28.1% of children under 6 months old don't drink water. The percentage of children solely fed with breast milk was 61.43% of children of that age group, while the number of children not fed with breast milk at all was 14.29%. On average, 86.97% of their food consists of breast milk; 8.19% - milk formula; and 4.84% - other food. The average dietary diversity score of children aged 6-59 months old was 4.44. The diversity score increases parallel to the age of the child until 24-29 months. 65.9% of respondents use vegetable oil in their households most frequently, and 33.2% use butter and ghee.

To the question, what type of water do they use, 87.7% of respondents mentioned tap water. Moreover, a majority of respondents who do not use tap water are from rural and border communities. 2.3% drink water brought by tanker, 2.85% - spring water, 1.6% - well water, 2.56% - bottled water and 1.9% - tap and filtered water. Only 69.6% of respondents have a permanent water supply in their house. 86.4% of respondents say they wash their hands 8 times and more per day. Water is always insufficient for household needs for 15.3% of respondents.

As to the question whether respondents experienced food poisoning, 89.2% said never, 6.6% - once every few years, 3.4% - once or twice per year. As for steps taken following food poisoning, 4.76% (out of respondents who had cases of food poisoning) mentioned that they stopped using specific food products, 3.6% changed nothing in their diets, 0.3% started paying more attention to food labels, 0.3% stopped eating at specific facilities (e.g. restaurants, cafes), 0.1% changed cooking methods, and 0.1% stopped using tap water.

In urban communities, people follow specific diets more than in villages. The share of those following a specific diet increases parallel to age. Another reason for dieting was medical treatment. Following a diet as a way of weight management was mentioned more by women than men, but in case of medical treatment the picture is the opposite. As the main source of information on healthy nutrition, hygiene and other important issues, respondents mostly noted television programs. However, it's worth stating that both men and women need such knowledge.

When buying food, people mostly pay attention to the design, production/storing conditions, and label/manufacturer. Although the price also matters, however it wasn't outlined as a key factor for food purchase.

⁴To measure dietary diversity, the individual format of the tool provided by the Guidelines for measuring household and individual dietary diversity, 2013, Food and Agriculture Organization of the United Nations, was applied. The methodology was developed to measure the dietary diversity of women aged between 15 and 49.

⁵ The dietary diversity score calculation method also differs from both household and women score methodology which is provided by the Guidelines for measuring household and individual dietary diversity, 2013, Food and Agriculture Organization of the United Nations:



QUALITATIVE RESEARCH FINDINGS

The policy analysis and interviews with key informants revealed that *unhealthy nutrition* has an essential role in the development of non-communicable diseases. The bases of unhealthy nutrition habits are insufficient campaigning on healthy lifestyle and healthy nutrition, (including educational and child entertainment facilities), and enticement conditioned by frequently broadcasted advertisements, etc. Currently, the member states of the World Health Organization have developed several effective mechanisms for the prevention of unhealthy nutrition that considerably reduce risks for consequences and complications resulting from chronic diseases. During recent years, Armenia has adopted laws on food safety, veterinary medicine, phytosanitary issues, as well as a number of other bylaws and legal acts contributing to gradual institutional improvements, an increase of the efficiency of the risk assessment, improved responsibility of business structures in fulfilling food safety requirements, as well as the expansion of public monitoring of food safety. However, the food safety system in the country doesn't fully guarantee prevention of the negative impact of food related factors on human health.

From the main challenges related to nutrition policies the following should be outlined:

- Improper implementation of child feeding in pre-school facilities and kindergarten and lack of control mechanisms, lack of assessments on the Healthy Lifestyle Education Program in public schools, low level of engagement of the public and educational facilities in the formation of healthy nutrition behaviour, sale of unhealthy food with high fat, trans-fat, free sugar and salt content at schools and child entertainment facilities,
- Lack of an operational system for periodical data collection and assessment of teenagers and school age children, Insufficient level of consultancy on child and healthy nutrition issues, Lack of a campaign on unhealthy nutrition habits of teenagers and school-age children,
- Lack of materials/reports/broadcasts by mass media regarding healthy lifestyles and promotion of healthy nutrition, lack of a punishment/accountability mechanism in case of violations of the Law on Advertising, lack of a ban on advertisement of food and alcohol harmful to public and children health defined by the Law on Advertising.
- Lack of appropriate human resources, particularly infant nutrition specialists,
- Lack of implementation of national legislation in terms of violations of the International Code on Marketing of artificial milk formulas,
- There is incomplete fulfilment control of sanitary norm requirements and regulations issued by physical and legal entities involved in the food safety sector.
- Weak civil society engagement in policy and strategy monitoring



ANNEX 1. LIST OF STUDIED DOCUMENTS

1. The Strategic Program on Healthy Lifestyle and Action Plan ensuring the implementation of the program
2. Mother and Child Healthcare Strategy for 2003-2015,
3. Specialized guides on feeding of children of early age and public information materials for pregnant women and nursing mothers,
4. Guide on adult diet
5. Methodological guide of the anti-epidemiological research on food poisoning,
6. Report on feeding children of early age,
7. Benchmark on provision of outpatient obstetric support and services within the framework of free of charge medical aid and service guaranteed by the state,
8. Law on Advertising,
9. National Program on Fight Against and Prevention of Iodine Deficiency Among the Population of RA and the Action Plan for 2004-2007,
10. RA Water Code,
11. RA Law on Sanitary-Epidemiological Security of the Population of RA
12. RA Government decision on the National Action Program on the Hygiene of the Environment of RA
13. Strategic Program on Protection of Children's Rights in RA for 2013-2016,
14. National Food Security Concept of RA
15. Action plan derived from the National Food Security Strategy of RA,
16. RA Law on Minimum Consumer Basket and Minimum Consumer Budget,
17. Food security and poverty, publications by the National Statistical Service of RA
18. National Strategy on Child and Teenager Health and Development and the Action Plan for 2010-2015
19. Strategic Development Program of RA for 2014-2020
20. Technical support project for the development of the food safety system,
21. "Healthy lifestyle" school curricula in public schools
22. Guidelines for measuring household and individual dietary diversity, 2013, Food and Agriculture Organization of the United Nations
23. Nutritional Aspects of Food Security in Armenia, 2014, COMPETITIVE SOCIETY NGO
24. Armenia: Demographic and Health Survey, 2010, National Statistical Service of Armenia
25. Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide, VERSION 2, 2006, USAID Food and Nutrition Technical Assistance III Project (FANTA)
26. Meeting to Reach Consensus on a Global Dietary Diversity Indicator for Women, 2014, SUMMARY REPORT Prepared by FAO

