INCREASING CIVIL SOCIETY PARTICIPATION IN NATIONAL POLICY DIALOGUE IN ARMENIA, ENPI/2013/334643

# STATE SUPPORT TO AGRICULTURAL LAND-USERS FOR PURCHASES OF SUBSIDIZED FERTILIZERS AND DIESEL FUEL

# BUDGET PROGRAMMES

BUDGET PROGRAMME EVALUATION STUDIES,

ECONOMIC DEVELOPMENT AND RESEARCH CENTER (EDRC), 2016

Project funded by the European Union

# STATE SUPPORT TO AGRICULTURAL LAND-USERS FOR PURCHASES OF SUBSIDIZED FERTILIZERS AND DIESEL FUEL

## EVALUATION OF BUDGET PROGRAMMES


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*Proper reference is obligatory for using this publication.*

**State Support to Agricultural Land-Users Budget Programmes Evaluation**

# List of Abbreviations

| | |
|---|---|
| bln | billion |
| CSPNPD | “Increasing Civil Society Participation in National Policy Dialogue in Armenia” (CSPNPD) project |
| CSO | Civil Society Organization |
| EDRC | Economic Development and Research Center |
| FGD | Focus Group Discussion |
| GDP | Gross Domestic Product |
| GoA | Government of Armenia |
| HH | Household |
| ILSS | Integrated Living Standards Survey |
| KII | Key Informants Interview |
| mln | million |
| MTEF | Medium-Term Expenditure Framework |
| NGO | Non-Governmental Organization |
| NSS | National Statistical Service |
| PSES 2016 | Public Support Evaluation Survey 2016 |
| RA | Republic of Armenia |
| SNCO | State Non-Commercial Organization |
| SSAL | State Support to Agricultural Land-Users |
| WTO | World Trade Organization |

# Contents

# Executive Summary

The “State Support to Agricultural Land-users for Purchases of Subsidized Fertilizers” and the “State Support to Agricultural Land-users for Purchases of Subsidized Diesel” budget programmes are continuous programmes targeting the subsidization of respective costs of farms.

The programs aim at agricultural development. Its main objective is to support the increase in agricultural production through efficient use of land and increase in agricultural income of farms.

The programmes do not contradict to the defined policy priorities and real needs of beneficiaries. Nevertheless, the programme formulation, and the efficiency of its implementation need to be improved. According to the Survey findings, subsidized prices still remain high for farms; there are no adequate mechanisms to increase the coverage of farms in the programmes; the unequal competition that has emerged in the sector limits the opportunities for import of fertilizers, as well as the import substitution by domestic production. It is recommended to consider the improvement of supplier selection processes and programme implementation transparency, as well as cost-efficiency of other options.

# 1. Introduction

## 1.1 About the Initiative

The Economic Development and Research Center (hereinafter, EDRC) is a Yerevan-based (Armenia) non-profit, nonpartisan think-tank (established in 2001). The EDRC conducts public policies and programmes monitoring and evaluation1.

With the funding of the European Union, EDRC, together with Oxfam GB is implementing the "Increasing Civil Society Participation in National Policy Dialogue in Armenia" project (hereinafter, CSPNPD project). The project aims at empowering civil society organizations to advocate and campaign for pro-poor reforms and engage in effective, transparent and substantial policy dialogue with the Government of Armenia based on monitoring of public budget and national policies in health, agriculture and social protection.

Within the framework of the CSPNPD project, EDRC designs and publishes simplified state budgets of the sectors of Agriculture, Healthcare and Social Protection policy areas; carries out activities aimed at increasing budget literacy and analytical capacity of CSOs, as well as monitoring and evaluation of the implemented policies and selected budget programmes.

## 1.2 Objective of Budget Programme Evaluation

One of the components under the CSPNPD project is to conduct monitoring and evaluation of budget programmes. Six budget programmes, which are regularly funded by the RA State Budget, have been selected for monitoring and evaluation. These programmes are selected from the following three sectors: Social Protection, Healthcare and Agriculture. The budget programmes subject to monitoring and evaluation were selected as a result of discussions with the officials from the respective sectors by the 40 beneficiary CSOs of the CSPNPD project during the joint workshop2.

The objective of the budget programme evaluations is to raise public awareness, enhance discussions and policy dialogue on the effectiveness of public policies between CSOs and the Government, as well as assist policy makers in increasing the programme efficiency. The budget programme evaluations are presented in comprehensive policy reports.

## 1.3 The Methodology

The "State Support to Agricultural Land Users" and "Agricultural Consulting Services" budget programmes are selected from the sector of agriculture for the monitoring and evaluation exercise.

The M&E methodology was developed by the EDRC which was presented in details in the Methodology Report of the CSPNPD Project. The monitoring and evaluation methodology combines desk studies and field studies, involving various quantitative, qualitative and mixed research methods, in particular:

- Collection and analysis of statistical data,
- Review and study of policy documents,
- Review of related studies and reports,
- Key Informant Interviews,
- Focus-group discussions with beneficiaries and experts,
- Sample surveys.

[1] For more information on the EDRC and the "Increasing Civil Society Participation in National Policy Dialogue in Armenia" project visit www.edrc.am.

[2]Public Policy Framework in Social Protection, Health and Agriculture Sectors workshop, October 22, 2014, Congress hotel.

The main tool for data collection to be used for the monitoring and evaluation of "State Support to Agricultural Land Users" and "Agricultural Consulting Services" budget programmes was the Sample-based Survey carried out by the EDRC in 2016 – Public Support Evaluation Survey (hereafter - PSES-2016).

The Survey covered 1,800 farms countrywide. Farms in rural communities that benefitted from the public support to agricultural land users were the object of the Survey. For the purposes of the Survey, only those rural HHs that were engaged in agriculturalar activities (in particular, land cultivation or farming) during the 12 month preceeding the Survey were considers as farms. The Sample covered 100 rural communities, while the error margin of the Survey is +/- 3.5%.

Collection of qualitative data was carried out in collaboration with partner CSOs including 8 FGDs held in 4 Marzes of Armenia and KIIs with sector experts.

### 1.4 Report Structure

This report presents the final results of the independent evaluation of the State Support to Agricultural Land-users for Purchases of Subsidized Fertilizers and State Support to Agricultural Land-users for Purchases of Subsidized Diesel budget programmes (hereafter – SSAL programmes). It consists of 5 sections. The introduction is followed by Section 2 which describes the Programme objective, beneficiary groups, provided services, funding, long-term targets etc. Programme budget formulation and performance measures are also presented.

Section 3 presents the main characteristics of beneficiaries, beneficiary coverage and implementation problems. Programme efficiency and impact are assessed. Section 4 summarizes the findings of the interviews with Key Informants and results of Focus Group Discussions conducted under the current project. The last Section summarizes the main evaluation results and presents recommendations.

# 2. "State Support to Agricultural Land-Users" Programmes

## 2.1 SSAL Programme Objective and Regulation Framework

Programmes on state (government) support to agricultural land users in purchasing fertilizers and diesel fuel aim at promoting agricultural development in Armenia. The objective of public policy in this area is to contribute to the increase in the income of farms through efficient use of land and increased production of agricultural products[3]:

The legal basis for the SSAL programmes are the GoA Decrees adopted in the beginning of every fiscal year. In particular, for 2016 those decrees are:

- ✓ GoA Decree N 73-N on Approving the State Support Programme on Provision of Nitric, Phosphoric and Potassic Fertilizers at Subsidized Prices for 2016 Agricultural Season dated January 29, 2016;
- ✓ GoA Decree N 59-N on Approving the State Support Programme on Provision of Diesel Fuel for 2016 Agricultural Season dated January 29, 2016.

The Ministry of Agriculture is responsible for the implementation of the SSAL programmes. The supplier of diesel fuel is Flash LLC, while for fertilizers it is "MasisiBerriutyun" and "HrashqAygi" companies.

The process of selling fertilizers and diesel fuel to land-users is regulated and organized through the local governments and Marz Governor's Offices.

Fertilizers and diesel fuel under SSAL programmes are distributed based on the land area used and prices defined by the GoA. The details are presented in the Table below:

**Table 1. Maximum Quantities and Prices of Fertilizers and Diesel Fuel Sold to Land-users under SSAL Programmes in 2016**

| | Norm defined for 1 ha | Price Kg/sack | Government subsidies |
|---|---|---|---|
| Diesel Fuel | 200l | 280 dram/litre | AMD 55/litre |
| Nitric Fertilizer | 300kg | 120 dram/6000 dram | AMD 2,730/sack |
| Phosphoric Fertilizer | 400kg | 140 dram/7000 dram | AMD 6,735/sack |
| Potassic Fertilizer | 150kg | 140 dram/7000 dram | AMD 6,799/sack |

Source: RA Government Decisions N 59-N and N 79-N dated January 29, 2016

Sales of fertilizers and diesel to agricultural cooperatives, as well as beneficiaries that were provided with super-elite winter wheat seeds4 is based on the land area, without limitations, while for ordinary farms, the maximum quantities of diesel fuel is 600 litres and for nitric fertilizer - 1000 kg.

Sales to the scientific centres and organizations under the Ministry of Agriculture and the State Agrarian University are carried out based on their demand.

## 2.2 Budget Financing

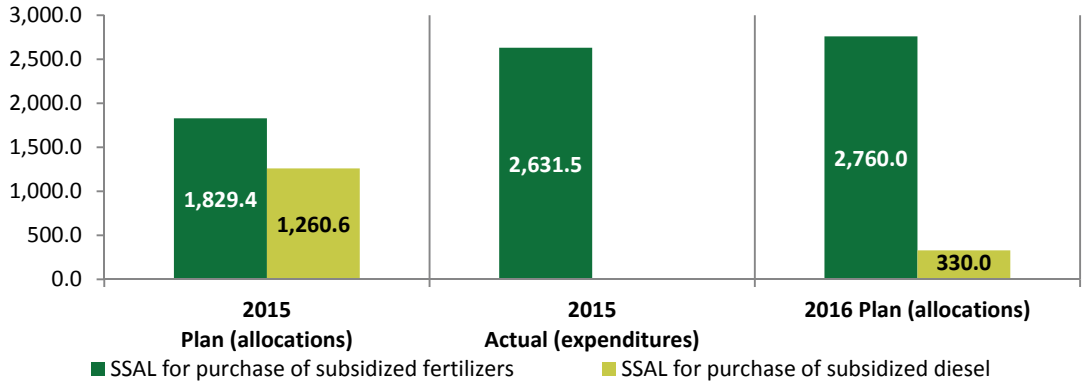
SSAL programmes on provision of fertilizers and diesel fuel at subsidized prices taken together make up the largest expenditure in agriculture. In 2016, AMD 3.1 bln was allocated to these two programmes which constitutes 23.1% of total budget in agriculture or 0.2% of total budget expenditures. Notably, AMD 2.8 bln was intended for fertilizers, while AMD 0.3 bln was allocated for diesel fuel.

The Figure below presents planned allocations and actual expenditures under SSAL programmes for 2015 and 2016. In 2015, the actual implementation deviated from the plan. Resources spent on fertilizers

[3] As per 2016-2018 MTEF.
[4] In accordance with the GoA Decree N 1001-N dated August 31, 2015.

exceeded the plan 1.4 times, while no expenditures were made on diesel, since the demand registered during the year was met from the outstanding stock from the previous year.

**Figure 1. SSAL Programme Financing in 2015 and 2016, AMD mln**




Source:2015-2016 Annual Budget Laws, the RA 2015 Budget Implementation Report

Notably, total allocations for diesel fuel in 2016 amounting toAMD 330 mln, were provided as subsidies to "Flash" LLC, while allocations for fertilizers consisted of two components: AMD 2,538 mln is the total amount of price subsidies, and AMD 222 mln is a grant for the logistics and unloading of fertilizers.

The GoA approves the breakdown of SSAL allocations under the Annual Budget Law per main directions and Marzes. In particular, the planned breakdown for 201i6 s presented in the Table below:

**Table 2. Distribution of Fertilizers and Diesel Fuel per Marzes and Beneficiary Organizations in 2016**

| List | Nitric, tonne | Phosphoric, tonne | Potassic, tonne | Diesel Fuel, litres |
|---|---|---|---|---|
| Aragatsotn | 3,300 | 60 | 60 | 450,000 |
| Ararat | 3,840 | 151 | 132.25 | 320,000 |
| Armavir | 6,000 | 200 | 200 | 550,000 |
| Gegharkunik | 5,950 | 100 | 150 | 1,000,000 |
| Lori | 2,300 | 100 | 70 | 750,000 |
| Kotayk | 1,710 | 58.4 | 47.7 | 290,000 |
| Shirak | 5,690 | 63 | 60 | 1,120,000 |
| Syunik | 2,200 | 80 | 80 | 750,000 |
| VayotsDzor | 463.3 | 13.1 | 14.1 | 187,000 |
| Tavush | 420 | 5 | 5 | 400,000 |
| Nagorno-Karabakh Republic | 2,000 | 0 | 500 | - |
| "Gyumri Breeding Section" CJSC | 66 | 0 | 0 | 28,000 |
| "Agriculture Scientific Center" SNCO | 28 | 0 | 0 | 10,000 |
| "Scientific Center of Vegetable, Melon and Technical Crops" SNCO | 2 | 0.5 | 0.5 | 2,000 |
| "Seed Agency" SNCO | 10 | 0 | 0 | - |
| Experimental Center of Armavir of the Scientific Center of Soil Science, Melioration and Agro-chemistry after H. Petrosyan of the Armenian National Agrarian University under the RA Ministry of Education and Science | 15 | 0 | 0 | 15,000 |
| Balahovit Educational –Experimental Center of the Armenian National Agrarian University under the RA Ministry of Education and Science | - | - | - | 25,000 |
| Nalbandyan Experimental Station of the Viticulture, Fruit-Growing and Wine-Making Scientific Center of the Armenian National Agrarian University under the RA Ministry of Education and Science | - | - | - | 3,000 |
| Ministry of Agriculture (Reserve) | 600 | 248 | 255 | 100,000 |
| **Total** | **34,594.3** | **1,079.0** | **15,74.55** | **6,000,000** |

Source: GoA Decree N 59-N and N 73-N dated January 29, 2016

## 2.3 Medium-Term Targets

The 2017-2019 MTEF envisages maintaining the same levels of allocations to SSAL programmes:

- AMD 2,560 mln will be allocated for the SSAL programme for subsidized fertilizers each year;
- AMD 33 mln will be allocated for the SSAL programme for subsidized diesel fuel each year.

**Table 3. Projections of SSAL programme planned allocations, 2016–2019**

| | 2016 Annual Budget Law | 2017 | 2018 MTEF | 2019 |
|---|---|---|---|---|
| SSAL for purchases of subsidized fertilizers, AMD mln | 2,760.0 | 2,560 | 2,560 | 2,560 |
| SSAL for purchases of subsidized fertilizers, % in total budget expenditures | 0.2 | 0.2 | 0.2 | 0.2 |
| SSAL for purchases of subsidized diesel fuel, AMD mln | 330.0 | 330.0 | 330.0 | 330.0 |
| SSAL for purchases of subsidized diesel fuel, % in total budget expenditures | 0.02 | 0.02 | 0.02 | 0.02 |

Source: 2017-2019MTEF, 2016 Annual Budget Law, EDRC calculations

## 2.4 Budget Formulation

The SSAL budget programmes are among those presented in Programme Budgeting formats. Under the Programme budgeting clas sification, those are policy actions (TR03 and TR04) under the "Support to the Agricultural Development Programme[5]" (1022). The output and outcome indicators for SSAL policy actions are presented in the Table below.

**Table 4. Performance indicators of SSAL Programmes**

**Outcome indicators**

- Increase in volumes of agricultural produce and food from processing thereof

**Output indicators (monthly, quarterly, semi-annual, annual)**

- Number of communities
- Frequency of transfer payment

Source: GoA Decree N 1217-A on Approving the Measures Ensuring the Implementation of 2016 Annual Budget, Annex 11

In order to carry out regular and efficient external monitoring and evaluation of SSAL programmes, a number of quality and timeliness indicators shall be added which will result in the improvement in programme implementation and accountability. The above listed output indicators are not sufficient to reflect the programme coverage, efficiency, size of assistance provided to farms, satisfaction of farms from the perspective of meeting their needs etc.

The Table below presents some guiding performance indicators that we recommend including in the existing list.

**Table 5. Guiding recommendations of performance indicators under SSAL programmes**

**Output indicators (options)**

- Number of farms participating in SSAL programmes, % in total farms
- Land plot area covered, % of total
- Subsidized fertilizer prices, as % in market prices for respective types, per types of fertilizers

Source: EDRC

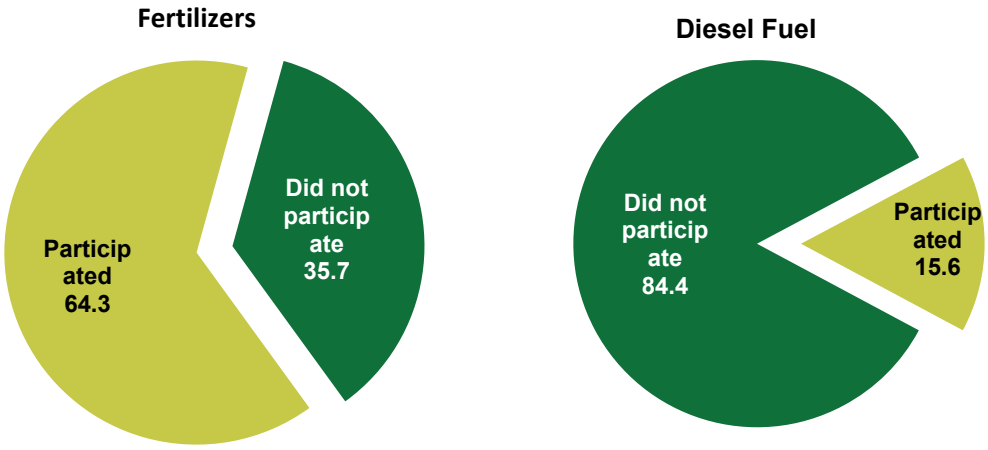
[5] Agricultural Development Programme contains three policy actions: the third policy action is the Subsidization of Interest Rates on Agricultural Loans (TR02).

# 3. Programme Evaluation

## 3.1 The Programme Coverage

According to the Survey results, 65.9% of farms that participated in the Survey benefitted from the SSAL programmes during the last 3 years. In particular, 64.3% of farms bought subsidized fertilizers, while 15.6% purchased subsidized diesel.

Figure 2. Coverage of farms in SSAL programmes, %




Source: PSES-2016, EDRC

In 2015, 56.4% of farms bought fertilizers, and 50.8% purchased fertilizers in 2016. Farms mostly bought nitric fertilizers: 56% of farms in 2015 and 50.3% in 2016. In 2016, the shares of farms that bought phosphoric and potassic fertilizers increased to a certain extent and totalled to 1.1%and 2.3% respectively.

The quantities of fertilizers bought per 1 farm increased reaching 9.1 sacks or 455 kg in contrast to 8.4 sacks (420 kg) in 2015.

Few farms bought diesel: 11.9% of farms did so in 2016 which is lower than in 2015 by 1.2 percentage points.

Table 6. The coverage of farms by SSAL programmes per support component s and average quantities bought per 1 farm

| | 2015 | | 2016 | | |
|---|---|---|---|---|---|
| | Average quantities | Farms, % | Average quantities | Farms, % | Land area cultivated by farms, %[6] |
| Nitric fertilizers, sacks[7] | 8.3 | 56.0 | 8.9 | 50.3 | 58.4 |
| Phosphoric fertilizers, sacks | 3.0 | 1.0 | 4.6 | 1.1 | 1.2 |
| Potassic fertilizers, sacks | 3.5 | 2.0 | 3.1 | 2.3 | 2.4 |
| Diesel fuel, litres | 188.1 | 13.1 | 193.4 | 11.9 | 24.3 |
| Total fertilizers, sacks | 8.4 | 56.4 | 9.1 | 50.8 | 59.1 |

Source: PSES-2016, EDRC

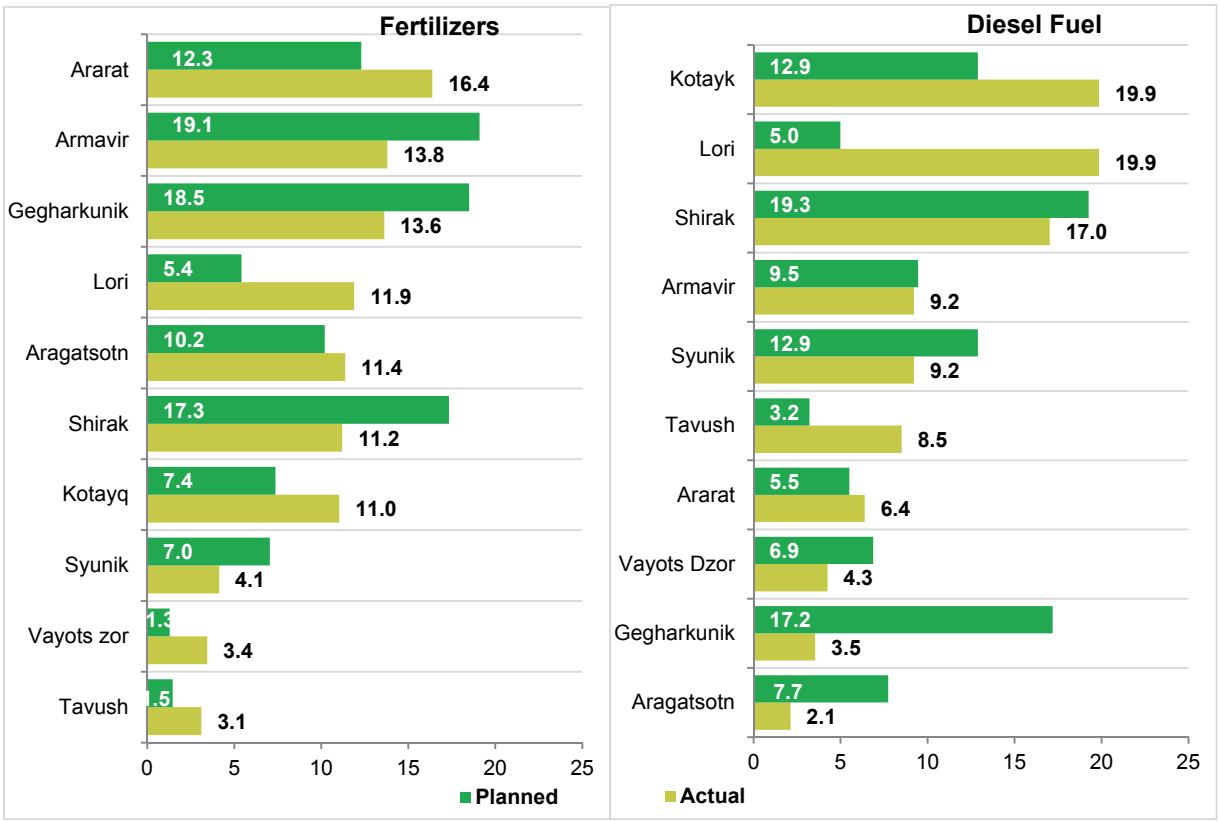
The Figure below demonstrates the Marz breakdown of beneficiary farms per actual indicators estimated through the Survey and planned distribution of the Ministry of Agriculture of RA. Ararat, Armavir and Gegharkuniq Marzes are the ones that lead in terms of distributed (sold) quantities, although according to the plan, Shirak Marz was also expected to buy large quantities.

[6]Percent in total cultivated land area.

[7] 1 sack = 50kg.

As for diesel, Kotayq, Lori and Shirak Marzes are in leading purchasing positions.. In this case, the deviation from planned indicators is high in Gegharkuniq Marz.

Figure 3. Coverage of beneficiary farms per Marzes, %




Source: PSES-2016, EDRC,
Source: GoA Decree N 59-N and N 73-N dated January 29, 2016

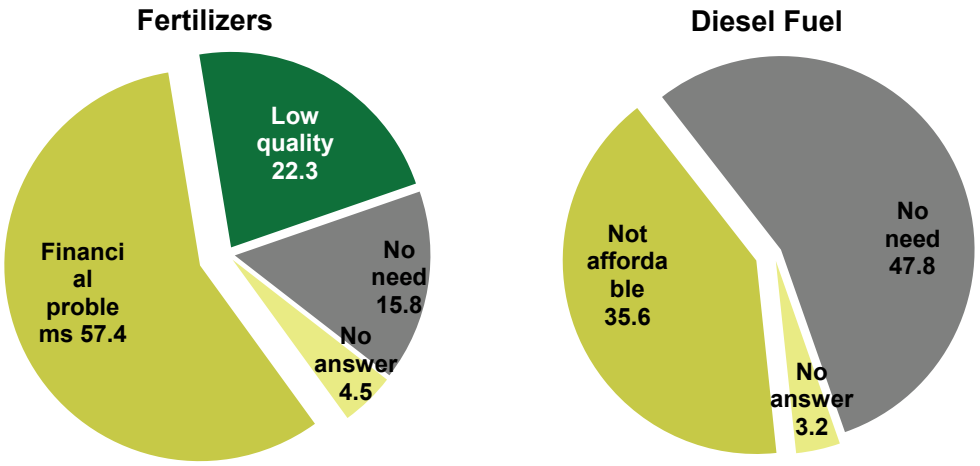
Farms paid for fertilizers and fuel distributed under the programmes at the time of registering their applications. No other methods of payments were recorded under the Programmes. All farms participating in the Survey mentioned that they were aware of the possibility to buy fertilizers and diesel fuel. They also noted that they never met any limitations or constraints to participate if they had financial means to buy the fertilizers or diesel.

The estimates of prices (collected though the Survey) of fertilizers mostly coincided with the prices set by the Government.

The main reason for not buying subsidized fertilizers was the lack of financial resources at the time of placing the order/application (57.4% of cases). 15.8% of farms mentioned they did not consider buying fertilizers necessary, while 22.3% believed the quality of subsidized fertilizers was not adequate.

The majority of farms that did not buy subsidized diesel ( 47.8%) mentioned they did not need or did not essentially need (need very small quantities) diesel for their farming activities, therefore, did not apply for the participation. 35.6% of non-participating farms noted that the price did not differ significantly from the market price; therefore, the impact is not significant from the perspective of farming activities.

Figure 4. Reasons for not participating in fertilizers and diesel fuel distribution programmes, %



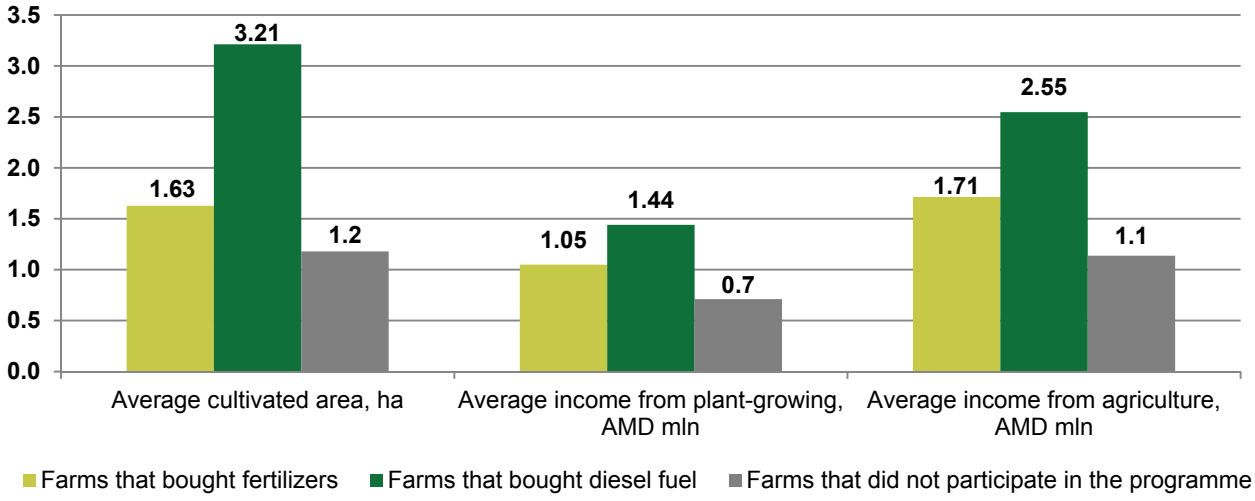

Source: PSES-2016, EDRC

## 3.2 Programme Beneficiaries

According to the PSES-2016 findings, farms participating in SSAL programmes are larger and, on average, more profitable, than other farms covered by the Survey. Farms that participated in the diesel subsidization programme are especially large and profitable. The average area of cultivated land by such farms equals 3.2 ha, while, the average area of cultivated land by farms participating in the fertilizers subsidization programme equals 1.2 ha.

The average annual agricultural income of farms participating in the diesel subsidization programme totalled to AMD 2.6 mln, while those of farms participating in fertilizers participation – AMD 1.7 mln and income of non-participating farms – AMD 1.1 mln.

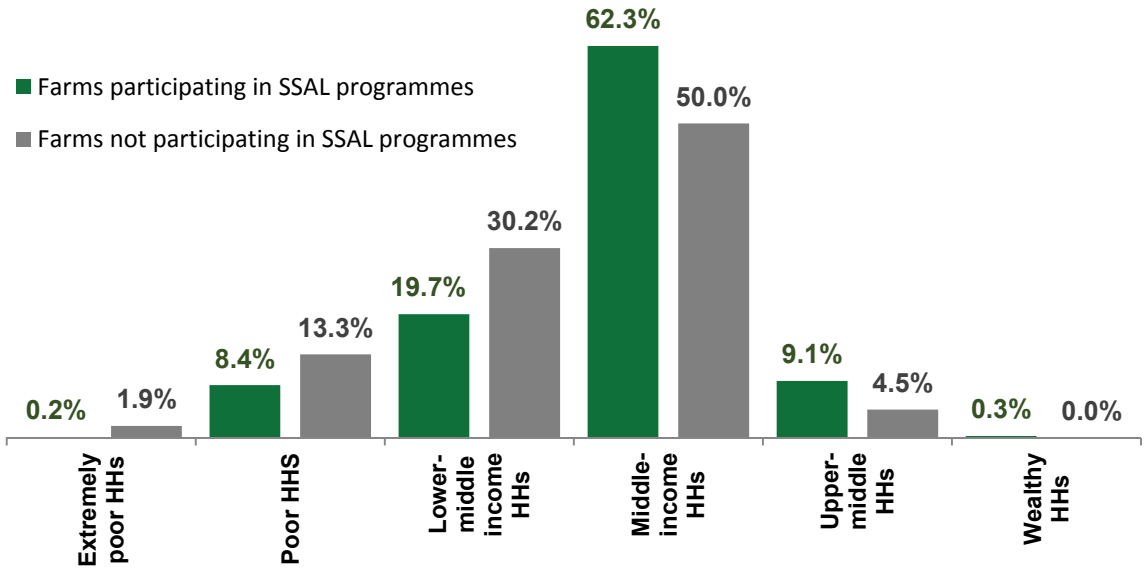
Figure 5. Comparison of farm incomes and cultivated land area depending on participation/non-participation in SSAL programmes




Source: PSES-2016, EDRC

According to self-assessment of living standards, about 72% of participating farms belong to the middle- and high-income groups. About 20% of such farms fall into the lower-middle income group. As for non-participating farms, the share of farms in poor and lower-middle income groups is considerably larger: 15% and 30%respectively, while there are no rich farms at all.

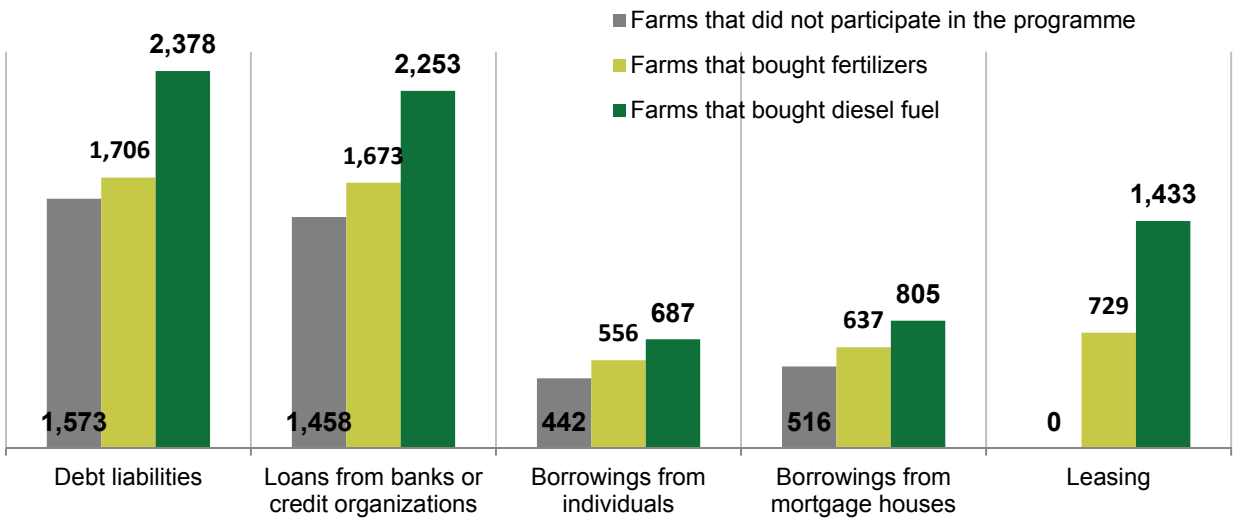
Figure 6. Farm characteristics per self-assessment of living standards




Source: PSES-2016, EDRC

The debt liabilities of beneficiary farms are larger than those of other farms. Notably, the difference is apparent for farms participating in the subsidized diesel programme. It is interesting to note that most farms participating under SSAL programmes have leasing liabilities.

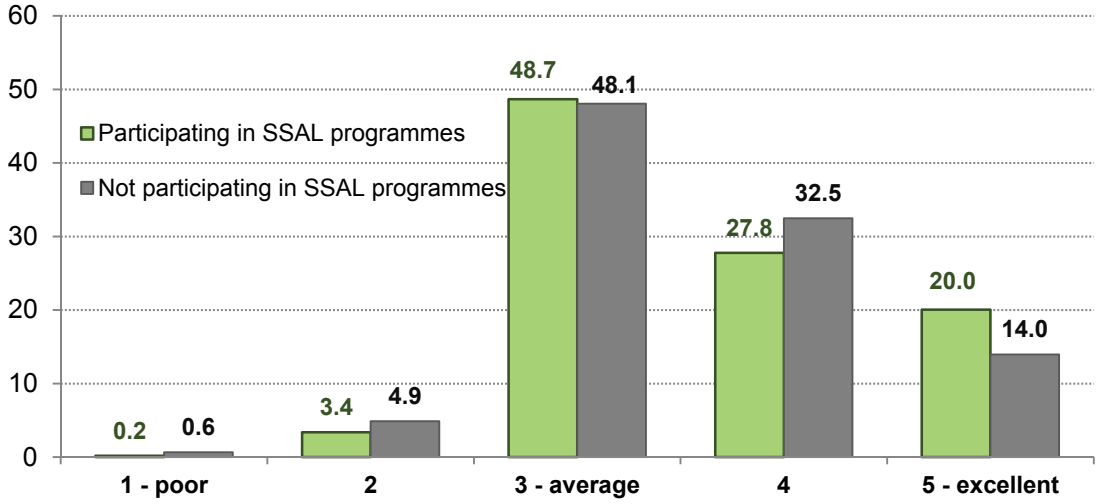
Figure 7. Comparison of farms per size of liabilities per 1 farm having liabilities, AMD thousand




Source: PSES-2016, EDRC

The self-assessment results on farming knowledge is not low among both participating and non-participating farms. About 96% of farms consider their knowledge as average or above average.

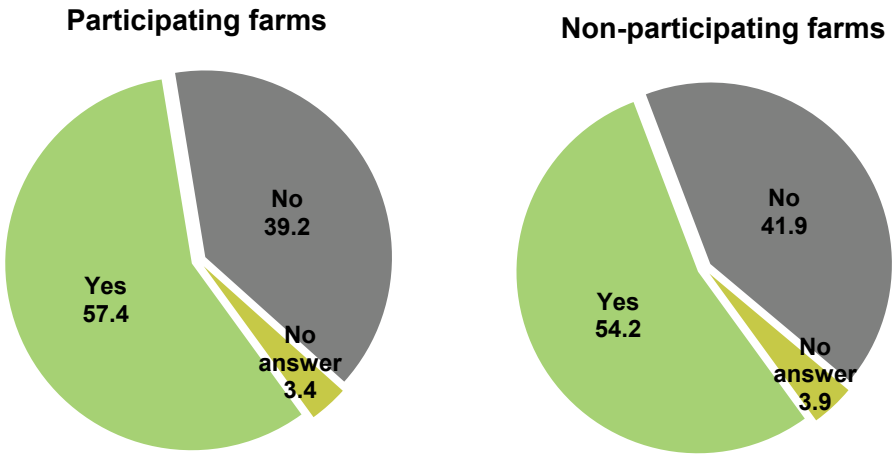
Figure 8. Self-assessment of farming knowledge in farms, %




Source: PSES-2016, EDRC

The breakdown of farms depending on willingness to improve their farming/agricultural knowledge does not vary significantly among participating and non-participating farms. 56.3% of farms were willing to receive new knowledge and improve the existing knowledge and skills.

Figure 9. Comparison of need for improvements in farming knowledge, %

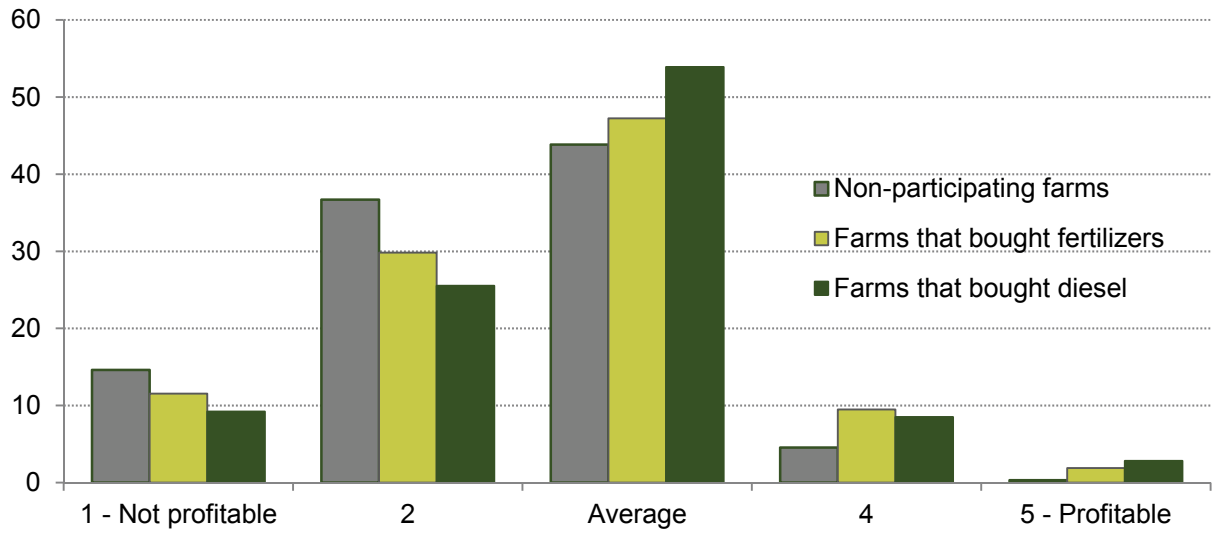



Source: PSES-2016, EDRC

## 3.3 Programme Impact and Efficiency

Farms participating SSAL programmes evaluate their agricultural activities as relatively more efficient. If about 59% of farms that bought subsidized fertilizers estimated their efficiency as average or higher, 65% of farms that bought subsidized diesel estimated were of the same opinion, while only 49% of non-participating farms believed so.

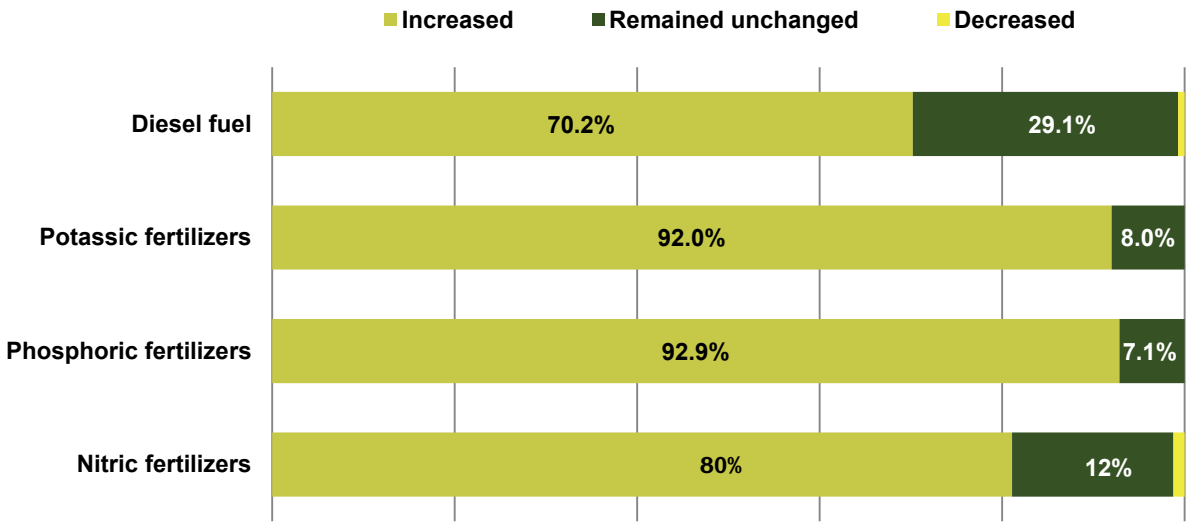
Figure 10. Self-assessment of farming activities' efficiency, %




Source: PSES-2016, EDRC

Farms view the impact of government support under SSAL programmes on increasing efficiency of their activities as important. In particular, more than 92% of farms participating in the fertilizer (potassic and phosphoric fertilizers) subsidization programme believe that their efficiency improved due to the use of these particular fertilizers. 80% of farms that bought nitric fertilizers believed so. The share of farms with the same view is lower among farms participating in diesel subsidization programme.

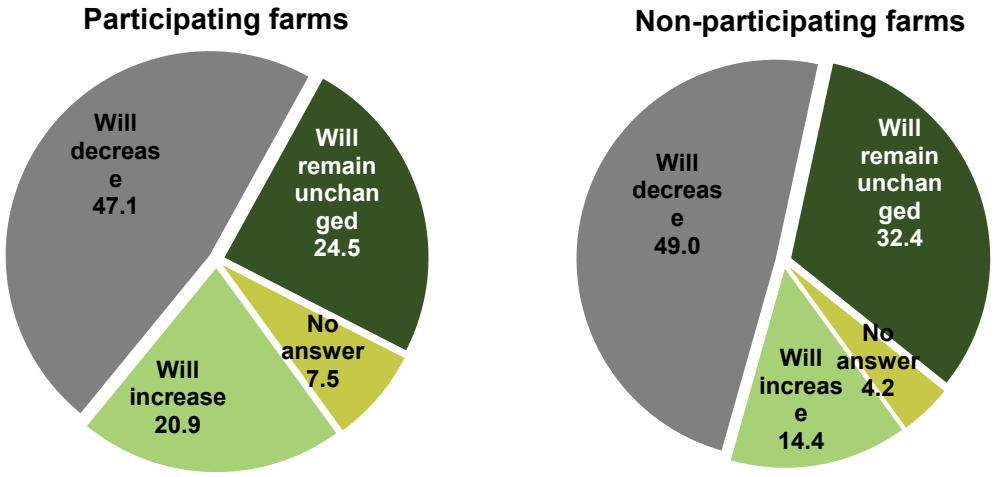
Figure 11. Farms' assessment of the impact of subsidized fertilizers and diesel on the efficiency of land use, %




Source: PSES-2016, EDRC

Expectations of agricultural incomes differ among participating and non-participating farms. Farms expecting increases in agricultural incomes in 2016 are relatively high among participating farms - 20.9%, while the share of farms expecting decreases in agricultural incomes is lower - 47.1%.

Figure 12. Comparison of farms' expectation of agricultural income in 2016, %

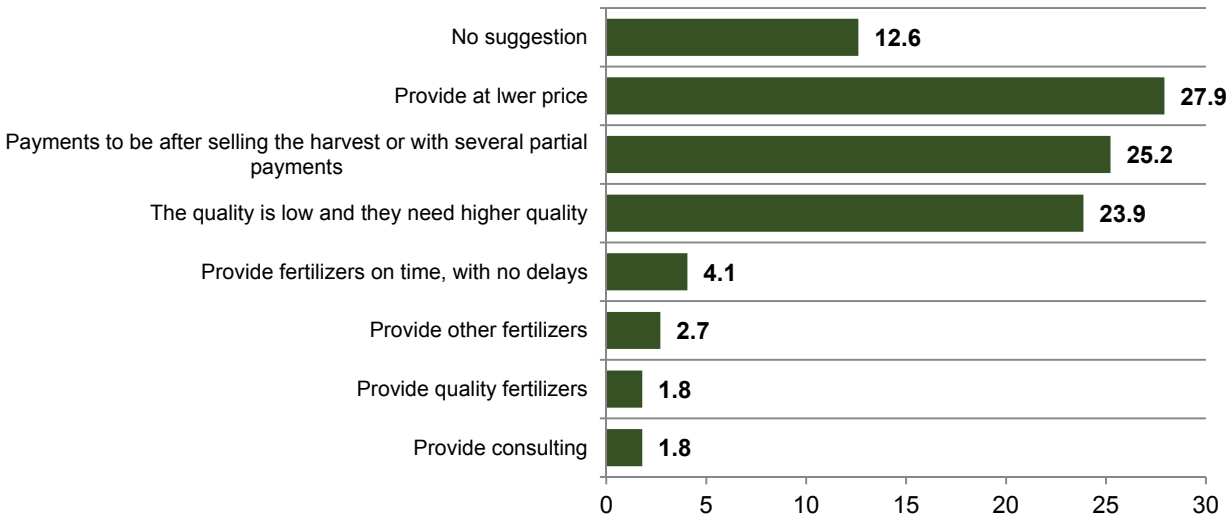



Source: PSES-2016, EDRC

12.6% of farms do not have any suggestions or comments with respect to SSAL programmes implementation. Quite a lot of farms,about 28% of total farms, believe that subsidized prices for fertilizers are high. The next problem they noted was the payment timeline. More than 25% of farms believed that it would be much more convenient if farmers were able to pay for fertilizers after they sold the harvest and at partial instalments. The reason for this was that they often did not buy fertilizers under the Programme due to the fact they did not have cash to pay for it at the specified date. Later they bought fertilizers from re-sellers.

24% of farms believed that the quality of fertilizers was low and they needed fertilizers of higher quality. 2.7% of farms mentioned they needed other new types of fertilizers, 1.8% needed new pesticides, while another 1.8% needed consulting. 4% of farms were unhappy with programme implementation timelines and delays.

Figure 13. Farms' comments on SSAL programmes, % in participating farms




Source: PSES-2016, EDRC

# 4. Qualitative Research Findings

The evaluation of SSAL programmes also include findings of Focus Group Discussions[8] (FGDs) held in 4 Marzes of Armenia and Key Informant Interviews (KIIs). KIIs and FGDs aimed at collecting merely qualitative information. The results contain personal and professional assessment of the Programme of service providers' staff, mostly with respect to impact, efficiency, beneficiary coverage, awareness issues, as well as contain solutions and recommendations for the programme improvement. Below the main views and assessments of KII and FGD participants are summarized.

### Key Informant Interviews

- According to key informants' opinions, the distribution process of fertilizers is transparent; however, the fertilizers' procurement process is not, neither it is efficient.
- They noted specific cases when various companies or businessmen were willing to import fertilizers at lower prices which, sometimes, were even better in terms of quality, however, the unequal competition under the Programme hampered it.
- Suppliers are selected without a tender announcement by the Government and, therefore, other companies are not able to participate in the Programme.
- The Ministry of Agriculture was informed about the situation, as well as about the opportunities to import fertilizers at lower prices, however, the process format did not change since then and the companies were allowed to participate in the supplier selection tender.
- Unlike, businessmen, sector experts believe that fertilizers can be produced locally; furthermore it is desirable to organize production of organic fertilizers. In any case, locally produced fertilizers would cost much cheaper than the subsidized fertilizers.
- According to experts, organic fertilizers are more efficient; however, changing the perceptions of farmers, their awareness and knowledge improvement will take some time. Currently, there are a few companies in Armenia that already started production of organic fertilizers.
- Experts believe that the current demand for chemical fertilizers can be met if Vanadzor Chemical Plant re-starts its operation. The latter is technically equipped to produce nitric and potassic fertilizers. They justify that the price of locally produced fertilizers will be lower than imported, while the production can be organized with local supplies.

### Focus Group Discussions

- All HHs engaged in agriculture that were willing to buy diesel and fertilizers at subsidized prices. The main reason for not participating in the programme is lack of cash or finance that needs to be paid in advance.
- Despite the fact that the fertilizers under the SSAL programme are expensive; they are the main accessible options to farmers. Often, it is more convenient for farms to buy the fertilizers at relatively high prices in their communities than buying it cheaper from Yerevan or Marz centres.
- Many farmers participate in the fertilizers programme, however only those farms that have agricultural machinery mostly participated in the diesel programme. Notably, if the fertilizers' price

[8]Marz discussions were implemented by 5 beneficiary CSOs – based on the methodology and Questionnaire pre-defined by the EDRC.

is the cheapest among the ones accessible for them, the prices for diesel are very close to the market price.

- Subsidized fertilizers and diesel are not different from the same products available in the market in terms of quality.
- In order to increase the programme coverage, they suggested revising the payment terms so that payments were due after the harvest sales or with instalments. Since farmers do not have cash at the time they are required to make the payment, often they have to borrow in order to pay for the fertilizers in advance.
- Distribution timing shall be made clear: there are frequent delays.
- Community heads tend to inflate cultivated land area; they receive the subsidized diesel and re-sell it in the local market to petrol stations.
- Fertilizers prices are, in reality, inflated, then subsidized. As a consequence the fertilizers' prices in Armenia are higher than in Georgia.
- The subsidized price for fertilizers is still not affordable for farms.
- Quality analyses of soil isof big importance. Farmers often do not know what is necessary for the soil and, since they traditionally know about nitric fertilizers, they are looking for it. This may negatively affect the soil quality and deteriorate it. Type of fertilizers is recommended depending on the crop which is, again, not considered. This means the same soil requires different fertilizers depending on what is required for each crop.
- The main weakness of both programmes is that the farmers are required to pay for the fertilizers and diesel in autumn, while the delivery is in spring. These timing procedures result in a situation where especially poor farms with small land plots do not participate. In the case of fertilizers, farmers prefer to pay finding a way, they prefer to buy diesel from the petrol station nearby during the season without paying rather than paying altogether in advance for several months. Advance payments mechanism shall be fully reviewed.
- If we take into account that farms pay from credit proceeds in autumn, when they place the order, and the interest rate is up to 20% p.a., the efficiency of subsidization is altogether questionable.

# 5. Summary of Main Findings and Recommendations

## 5.1 Programme Relevance

- According to the Survey findings, Armenian farms are characterized with small land plots, low level of specialization and commercialization, small agricultural incomes and lack of resources to expand farms. Technical equipment and management skills of farms are also insufficient, in addition to the lack of marketing and agricultural farming professional knowledge.
- Armenian farms evaluate their efficiency very low and believe the role of various government support activities can be very helpful in improving their efficiency, including opportunities to receive fertilizers and pesticides at discount (subsidized) prices.
- The "State Support to Agricultural Land-users" budget programmes are indirect subsidization programmes aiming at reducing the costs of farms on fertilizers and diesel fuel. About AMD 3.1 bln is allocated to these programmes which constitute about 23 of the annual agricultural budget.
- These programmes, as such, do not contradict to the defined policy priorities, and the actual views of beneficiaries. Analyses showed that budget formulation of programmes, as well as implementation efficiency should be revised and improved.

## 5.2 Programme Impact and Efficiency

- 66% of farms that participated in the Survey had benefitted from government support programmes to agricultural users during the last 3 years. In particular, 64.3% of farms bought some type of fertilizers at subsidized prices, while 15.6% bought diesel fuel.
- The main reason for not buying fertilizers at subsidized prices was the lack of financial resources at the time when the farms could apply for it (57.4% of cases). 15.8% of farms believed they did not need fertilizers, while 22.3% believed there were problems with the quality of subsidized fertilizers.
- The distribution of beneficiary farms per Marzes is not proportional. In terms of quantities of sold (distributes) fertilizers, Ararat, Armavir and Gegharkuniq Marzes are prominent, while in terms of diesel fuel quantities Kotayq, Lori and Shirak Marzes are in leading positions.
- Farms that benefitted from SSAL programmes are larger and, on average, generate more income in comparison to other farms that participated in the Survey. Farms that bought diesel fuel at subsidized prices are especially large and profitable. The majority of them are from middle and above-middle income groups; they cultivate relatively larger land plots and, on average, generate higher agricultural income.
- Farms that benefitted from SSAL programmes estimate their efficiency higher than other farms and believe the impact of such assistance is important with respect to the efficiency of their farms.
- The participation of farms to the programmes is not high since fertilizers are still not affordable for farms, even at subsidized prices.
- About 28% of farms believe that prices for fertilizers are high, while 25% consider the timing of payments due for fertilizers problematic. Due to financial problems, farms often buy fertilizers from re-sellers or accumulate debt by increasing the cost per unit of fertilizers for farms.

- About 24% of farms believe the quality of distributed fertilizers is poor and they need better fertilizers. 2.7% of farms noted they needed new types of fertilizers, together with 1.8% of farms mentioning about new pesticide types.
- The distribution timeline of fertilizers is not always kept as it should be: there are frequent delays in the schedule.
- The selection process of the supplier of fertilizers is not transparent; unequal competitive situation has emerged in the market which constrains both imports and local production of fertilizers. As a consequence, prices of distributed fertilizers are not market-based and there is a room to reduce them.
- Various studies mention about possibilities to import the same fertilizers at lower prices, as well as cheaper fertilizers with the same quality characteristics. This proves that fertilizers can be distributed to farmers at prices lower - at least by 36% than the current prices.

### 5.3 Main Recommendations

- It is well-known that one of the problems that hamper agricultural development in Armenia is the problem with fertilizers. Despite the fact that this problem has been long discussed at the highest government level for years and decisions were taken to resolve the problem fundamentally, it still remain unresolved and the Government continues to spend extensive amounts to subsidize the imports of fertilizers by private entities.
- Under the current circumstances in Armenia, it is feasible to partially cover the demand for fertilizers with the local production; however, measures taken in this regard and ongoing discussions do not resolve the issue. This situation is an important pre-condition for this topic to become a matter of public discussion in order to reveal the reasons behind the following: why the possibilities to develop agriculture and domestic production, as well as competition are generally constrained. It is necessary to justify the absence of other options and cost-efficiency of the chosen method in the eyes of the public.
- Discussions on the Programme at different levels (scientists, businessmen, sector experts) drive to the conclusion in many aspects that the Programme needs to be reviewed and revised significantly. In the short term, various suppliers shall be allowed to participate in the Programme, as well as fertilizers shall be replaced with relatively cheap ones. In the medium term, possibilities shall be developed to replace part of the imported fertilizers with locally produced fertilizers.
- The principles of existing support system need to be changed. The price and quality of imported fertilizers need to be the topic of professional and public discussions. The options mentioned by sector experts at various levels will result in significant cost savings.
- The specific recommendations on improving the efficiency of SSAL programmes are presented below:
  - ✓ Overall, the cost-efficiency of this subsidization policy needs to be justified in comparison with available options. In the first place, the question whether input subsidization is the best strategy under severe resource constraint situation shall be discussed. The first question in this context shall be whether the government support shall target the input subsidization or product subsidization. There are various options that fall under WTO requirements and constraints in order to subsidize the agricultural products through guaranteed prices for milk, meat, wheat and grapes.
  - ✓ Subsequently, the situation with monopolies and market distortions shall be discussed. These problems definitely exist in the fertilizers market. The use of input subsidization in the manner it is

done currently shall be fully terminated since free market competition may result in fertilizer prices lower than the subsidized prices. Overall, if the government intervention distorted market competition, even the best instrument in that case contains corruption risks that someone will eventually take advantage of.

- ✓ Use of the resources in current amounts to support the local production shall become the subject of discussions. The question is: is it possible to ensure local production of the same fertilizers or substitute thereof?

If it turns out that subsidization of fertilizers is the best option based on comparison, it shall, at least, comply with the following terms:

- ✓ Farmers cannot afford advance payments. Finance or cash problems are the major problem for them. Other support instruments shall not deteriorate the situation with the more fundamental problem.
- ✓ Distribution of fertilizers shall be accompanied with soil and crop analyses in order to find out the appropriate fertilizer for each soil and crop type, as well as quantities to be used.
- ✓ The primary target of agricultural support shall be set for each region. Middle class farms are the basis for future development of agriculture. These farms shall be the target when selecting government agricultural support instruments. Meanwhile, smaller farms need social support instruments more than economic support.
- ✓ On the other hand, procurement and supplier selection process contains various risks. In this respect, measures to improve transparency in such processes are crucial. It is necessary to select suppliers of fertilizers through open selection procedures.
- ✓ It is necessary to review the performance (non-financial) indicators of these budget programmes by including the indicators describing the coverage of farms and efficiency of interventions based on the guiding options provided in the present report.

# Annex 1: Characteristics of Target Farms

Table 7. Average number of farm members

| | |
|---|---|
| HH members, total | 5.2 |
| Usually live together | 4.8 |
| Usually live/work abroad (more than 3 months per year) | 0.3 |
| Usually live/work in other communities of Armenia (more than 3 months per year) | 0.1 |
| Usually engaged in agriculture | 3.1 |
| Of which: Women | 1.47 |
| Men | 1.54 |

Table 8. Age and sex breakdown of members of farms engaged in agriculture, %

| | |
|---|---|
| Women | 48.8 |
| Men | 51.2 |
| 0-15 year | 4.4 |
| 16-62 years | 80.1 |
| 63 years and above | 15.5 |
| 2 elderly members | 10.9 |
| 1 elderly | 24.9 |
| 2 and more children | 7.6 |
| 1 child | 5.5 |
| Only working age | 58.2 |
| Only elderly, women and children | 19.5 |
| Only men | 8.4 |
| Only women | 9.1 |

Figure 14. Sex and age breakdown of farm members engaged in agriculture, % in respective groups

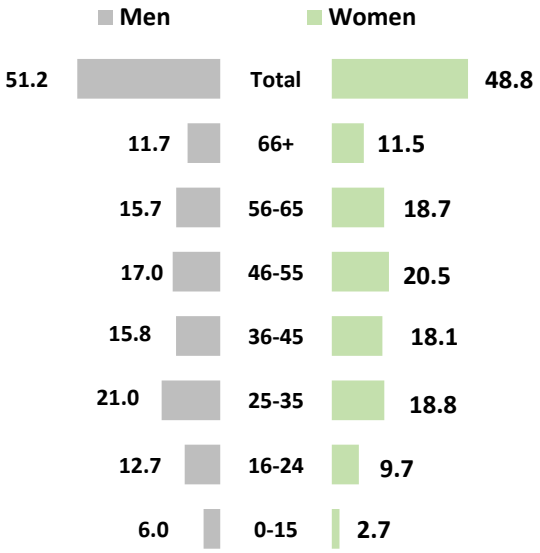



Figure 15. Sex and age breakdown of farm members engaged in agriculture, % in respective groups


Table 9. Education levels of members of farms engaged in agriculture, %

| | Total engaged in agriculture | Members of farms participating in the programme | Members of farms not participating in the programme |
|---|---|---|---|
| Higher | 12.1 | 19.1 | 11.3 |
| Secondary professional | 18.8 | 26.6 | 18.0 |
| Secondary | 53.5 | 41.9 | 54.8 |
| Up to 8th (9th) class/grade | 8.2 | 6.4 | 8.4 |
| Student/pupil | 7.3 | 6.0 | 7.5 |

Table 10. Breakdown of cultivated land plots per type of entitlement, %

| | Available | | Usage | |
|---|---|---|---|---|
| | % | Ha | % | Ha |
| Own | 99.2 | 1.5 | 83.2 | 1.2 |
| Rented | 15.4 | 1.4 | 14.9 | 1.4 |
| Relatives', neighbours' land used free of charge | 6.2 | 0.6 | 2.0 | 0.6 |
| **Total** | **-** | **1.8** | **100.0** | **1.5** |

Table 11. Breakdown of land-users per cultivated land areas, % in all farms

| | All farms | Participating farms | Non-participating farms |
|---|---|---|---|
| 0 - 0.1 ha | 7.5 | 3.0 | 4.5 |
| 0.1 - 0.5 ha | 29.5 | 18.6 | 10.9 |
| 0.5 - 1.0 ha | 22.1 | 15.3 | 6.8 |
| 1.0 - 2.0 ha | 19.5 | 13.4 | 6.1 |
| 2.0 - 5.0 ha | 18.0 | 12.7 | 5.2 |
| 5.0 ha and more | 3.4 | 2.8 | 0.7 |

Table 12. Breakdown of farms per activity area and production of agricultural products

| | All farms | Participating farms | Non-participating farms |
|---|---|---|---|
| Fruits and grapes | 79.0 | 79.5 | 78.2 |
| Potato | 62.4 | 65.8 | 55.8 |
| Cucumber and tomato | 54.4 | 53.4 | 56.5 |
| Other vegetables | 49.8 | 52.2 | 45.1 |
| Forage crops and grass, natural pastures | 49.1 | 50.0 | 47.4 |
| Legumes | 43.6 | 44.6 | 41.6 |
| Grains | 36.3 | 43.8 | 21.8 |
| Berries | 25.8 | 28.8 | 20.1 |
| Technical crops | 1.0 | 1.0 | 1.0 |
| Greenhouses | 10.6 | 10.6 | 10.7 |

Table 13. Average gross agricultural income per 1 farm, AMD

| | All farms | Participating farms | Non-participating farms |
|---|---|---|---|
| Stock-breeding | 605,169 | 675,611 | 458,818 |
| Plant-growing | 925,365 | 1,034,952 | 710,604 |
| Adjacent activities | 359,528 | 380,386 | 315,054 |
| Total | 1,509,786 | 1,703,128 | 1,137,541 |

Table 14. Breakdown of gross agricultural income, %

| | All farms | | Participating farms | | Non-participating farms | |
|---|---|---|---|---|---|---|
| | Consumed in the farm | Sold or exchanged | Consumed in the farm | Sold or exchanged | Consumed in the farm | Sold or exchanged |
| Stock-breeding | 53.1 | 46.9 | 53.8 | 46.2 | 50.8 | 49.2 |
| Plant-growing | 36.2 | 63.8 | 34.9 | 65.1 | 39.7 | 60.3 |
| Adjacent activities | 26.4 | 73.6 | 28.4 | 71.6 | 21.3 | 78.7 |
| Total | 40.3 | 59.7 | 40.1 | 59.9 | 40.9 | 59.1 |

Table 15. Breakdown of harvest sold and consumed by farms

| Share of sold harvest | All farms | Participating farms | Non-participating farms |
|---|---|---|---|
| 0-20% | 25.2 | 23.4 | 28.6 |
| 21-40% | 13.4 | 14.0 | 12.3 |
| 41-60% | 22.1 | 21.1 | 24.0 |
| 61-80% | 20.5 | 21.4 | 18.8 |
| 81-100% | 18.8 | 20.1 | 16.2 |

Table 16. Farms' assessments of generated agricultural income being sufficient to meet the needs of their household, %

| | All farms | Participating farms | Non-participating farms |
|---|---|---|---|
| Fully sufficient | 4.2 | 5.6 | 1.6 |
| Partially sufficient | 59.4 | 63.3 | 51.9 |
| Not sufficient | 36.4 | 31.1 | 46.4 |
| Total | 100.0 | 100.0 | 100.0 |

Table 17. Estimates of farms regarding generated agricultural income being sufficient for farm expansion

| | All farms | Participating farms | Non-participating farms |
|---|---|---|---|
| Sufficient | 2.7 | 3.5 | 1.0 |
| Not sufficient | 97.3 | 96.5 | 99.0 |
| Total | 100.0 | 100.0 | 100.0 |

Table 18. Problems that hamper efficiency improvement of farms, %

| | Option 1 | Option 2 | Total |
|---|---|---|---|
| Need financial investments | 31.8 | 5.4 | 37.3 |
| Problems with Irrigation(insufficiency or high price) | 16.0 | 2.9 | 18.8 |
| Problems with selling the produce(prices and markets) | 10.2 | 2.3 | 12.5 |
| Cheap and quality fertilizers and pesticides | 5.5 | 4.2 | 9.8 |
| Agricultural risks | 5.1 | 2.8 | 7.9 |
| Problems with agricultural machinery | 5.0 | 2.3 | 7.3 |
| Lack of Government support | 5.8 | 0.9 | 6.7 |
| Need for quality and cheap seeds | 3.0 | 1.9 | 4.9 |
| Lack of workforce | 2.5 | 1.1 | 3.7 |
| Lack of quality soil | 1.9 | 1.4 | 3.3 |
| High fuel prices | 0.7 | 0.4 | 1.1 |
| Insufficient agricultural consulting | 1.0 | 0.1 | 1.1 |
| No answer | 7.3 | 0.0 | 7.3 |
| Will not become efficient | 4.2 | 0.0 | 4.2 |
| **Total** | **100.0** | **25.8** | - |

Table 19. Sources of information on government support, multiple responses, % in respective groups

| | All farms | Participating farms | Non-participating farms |
|---|---|---|---|
| Friends, relatives, community members | 51.2 | 50.7 | 51.9 |
| TV, Radio or the media | 39.4 | 37.5 | 18.2 |
| Internet | 4.4 | 4.2 | 0.6 |

| | | | |
|---|---|---|---|
| Local government | 60.6 | 70.5 | 12.3 |
| Announcement board in the village | 25.8 | 29.1 | 1.3 |
| Marz Governor's Offices | 0.8 | 1.2 | 0.0 |
| SME support units | 0.2 | 0.0 | 0.0 |
| NGOs, projects, Marz ASCs | 0.2 | 0.2 | 0.0 |
| Do not receive | 0.3 | 0.3 | 0.3 |

**Table 20. Farms' need for receiving information, %**

| | All farms | Participating farms | Non-participating farms |
|---|---|---|---|
| Support at low cost or free of charge | 56.3 | 59.1 | 51.0 |
| Public support programmes implemented | 31.2 | 32.3 | 28.9 |
| Loans and other financing opportunities | 29.5 | 28.5 | 31.5 |
| Farming consulting | 20.3 | 22.9 | 15.3 |
| Information on sales markets | 20.2 | 22.9 | 14.9 |
| Innovative technologies | 12.1 | 13.1 | 10.1 |
| NGO or international projects | 7.4 | 7.7 | 6.8 |
| Other | 0.8 | 0.7 | 1.0 |
| Nothing | 16.7 | 14.8 | 21.1 |

**Table 211. Farms with debt liabilities, % in respective groups**

| | All farms | Participating | Non-participating |
|---|---|---|---|
| Total | 72. 3 | 68.4 | 79.9 |
| Loans from banks and credit organizations | 61.1 | 57.1 | 68.8 |
| Borrowings from individuals | 28.9 | 24.4 | 37.7 |
| Borrowings from pawnshops | 11.2 | 10.3 | 13.0 |
| Leasing | 0.4 | 0.7 | 0.0 |

**Table 222. Uses of debt liabilities, % in the number of farms with debt liabilities**

| | All farms | Participating farms | Non-participating farms |
|---|---|---|---|
| **For agricultural purposes** | 70.9 | 75.9 | 62.6 |
| Purchases of seeds, fertilizers etc. | 53.5 | 58.9 | 44.7 |
| Irrigation expenses | 17.6 | 19.0 | 15.4 |
| Investments in cattle stock (purchases) | 18.9 | 18.7 | 19.1 |
| Expenditures on testing and introduction of new products/activities | 8.0 | 7.9 | 8.1 |
| Capital construction and renovation | 4.8 | 6.2 | 2.4 |
| Investments in movable property | 2.8 | 3.4 | 1.2 |
| Purchase of real estate | 2.6 | 75.9 | 62.6 |

## Annex 2: Summary of Media and Other Publications

✓ Organic fertilizers can be produced locally in Armenia which will be cheaper than imported fertilizers. Hrach Hakobyan, founder of Green Pharm Company noted this. The "Green Pharm" company produces fertilizers and has already applied to certify it as organic. The company received compliance certificates both from Standard Dialogue and ArmStandard. In addition, they have applied to the Scientific Center of Vegetable and Technical Crops of the Ministry of Agriculture of the RA for technical expertise. Their fertilizers not only increase the crop yields, but also improve the soil quality, suppress fungal microorganisms and help the plants to imbibe the remnants of chemical fertilizers. https://news.am/arm/news/353018.html

✓ Arman Yeremyan, Executive Director of the Krepson Company and his partner, Armen Khacahtryan, in cooperation with the Israeli ICL company, invited Israeli experts to Armenia in 2013 and tested the potassic-phosphoric fertilizers produced by ICL in Armavir Marz and obtained high results.

In 2015, Krepson Company contacted the Ministry of Agriculture of Armenia with the proposal to import and distribute the Israeli potassic-phosphoric fertilizers to Armenian farmers under the state subsidization programme. According to Yeremyan, potassic-phosphoric fertilizers currently distributed to farmers cost AMD 154 thousand per hectare, including AMD 77 thousand which is the government subsidized portion. Meanwhile, the fertilizers suggested by Krepson will cost AMD 55 thousand in total. Notably, under the proposal presented by Krepson, 250kg of Israeli fertilizers are needed per 1 hectare which ensures high yield, while the norm for fertilizers that are distributed under the current government subsidization programme is 550 kg per hectare. http://www.aravot.am/2016/05/03/687232/

✓ In order to promote domestic production of fertilizers the Government of Armenia took a decision during its session held on April 1, 2015 to allocate AMD 50 mln to the Ministry of Agriculture for the provision of a loan to Sis-95 LLC[9] at 0.01% annual interest rate. Under this programme, the Government intended to support a local company producing organize fertilizers. The prices for their fertilizers are lower than the prices for imported nitric fertilizers, while the quality and the efficiency are higher.
http://mail.asrc.am/index.php?id=101&tx_ttnews%5Bcat%5D=77&tx_ttnews%5Btt_news%5D=2003&tx_ttnews%5BcalendarYear%5D=2011&tx_ttnews%5BcalendarMonth%5D=3&cHash=086207eca11cb9a2a740f6bd941507cb

✓ On July 3, 2012, Sergo Karapetyan, the Minister of Agriculture and the Minister of Energy and Natural Resources signed a Memorandum of Understanding. The Minister of Agriculture mentioned that the Vanadzor Chemical factory would produce carbamid in the first stage which was in high demand in Armenia, as well as ammonium sulphate. He also noted that farmers would receive quality fertilizers at much lower prices due to this process.

The capacity of the factory is estimated to provide 25 thousand tonnes of carbamid and ammonium sulphate of the same quantity. However, it was intended that the factory would produce 15 thousand tonnes of carbamid, thus, reducing the imports of this fertilizer to Armenia. Overall, the sector uses about 40 thousand tonnes of various fertilizers per year.
http://www.panarmenian.net/arm/news/114465/Vanadzorqimprom factory will start producing fertilizers in August

✓ The proposal of the Agricultural and Environmental Working Group of the RA Public Council, Agricultural Mechanization Scientific-Research Institute – Styopa Khoyetsyan refers to the production of fertilizers based on guano using a new method, as well as production of machines that put fertilizers into the soil. According to experts, these innovations have already underwent certain examinations, implemented by well-known experts. The results show 30-50% increase in yield, as well as significant reduction in the need for using diesel fuel. As a consequence, "the expected farm income will increase by about AMD 1 mln per hectare", the expert noted. He also added that the guano available in Armenia would allow for successfully replacing 35 thousand tonnes of imported nitric fertilizers with locally produced granulated guano. According to Khoyetsyan, he had sent more than 30 letters since 2003 requesting for testing the fertilizer. Responses were almost the same: the proposal was very good; however, there was no

[9] Not operating currently

money available for testing. It is better to find a cooperative and perform testing. The Government spends enormous amounts of money on testing new technologies. It would be logical to expect that the Ministry of Agriculture would be interested in this relatively cheap option to resolve the problems with fertilizers. Whether the existing stock of inputs would allow for partial or full replacement of (some) imported fertilizers is a matter of discussion and study by the Ministry of Agriculture.
http://old.iravunk.com/index.php?option=com_content&view=article&id=6817:2012-04-04-19-36-17&catid=52:tntesutyun&Itemid=116

✓ A study carried out by the State Commission for the Protection of Economic Competition revealed that the company which participates in the SSAL programme gains competitive advantages over other companies. The problem is that the Government provides necessary financial resources in advance and also ensures a guaranteed demand for nitric fertilizers. Meanwhile, other companies engaged in similar activities and field; have to operate with their own cash and import fertilizers without clear projections and guarantees of possible sales volumes. During 2012-2016, the "Masisi Berriutyun" Company is the supplier of nitric fertilizers (5 years). Notably, this company was selected by the Ministry of Agriculture without conducting a competitive selection process, which implied that other companies were not able to bid for the same programme. The programme covers 74% of total annual demand for nitric fertilizers in Armenia which means that the supplier can have a dominant position in the market with this share. The Commission revealed that "Masisi Berriutyun" purchased nitric fertilizers in Georgia at the price of USD 323 per tonne. Meanwhile, another company, the "Greenproduct" LLC, which is not involved in the SSAL programme, purchased the same type of fertilizers at USD 239 mln, i. e. 26% cheaper. Thus, the Government had to pay additional price to "Masisi Berriutyun" Company. According to the calculations of the Commission, the Government would save more than AMD 1.5 bln if the fertilizers supply was procured through a competitive tender process.
http://www.competition.am/index.php?page=press_releases&newsID=1429&lng=1

## List of Figures



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