TOWARDS BETTER POLICY MONITORING: OPERATIONAL SURVEY RESULTS ON THE IMPACT OF AGRICULTURAL SUBSIDIES IN MOLDOVA

DOI: https://doi.org/10.36004/nier.es.2024.2-09
JEL Classification: Q18
UDC: 338.434(478)

Dmitry ZVYAGINTSEV

PhD, Policy Officer, FAO Regional Office for Europe and Central Asia

https://orcid.org/0000-0002-3075-962X
dmitry.zvyagintsev@fao.org

Eugenia LUCAȘENCO

PhD, Scientific researcher, National Institute for Economic Research, Academy of Economic Studies of Moldova

https://orcid.org/0000-0002-5032-7963
lucasenco.eugenia@ase.md

Alexandru CEBAN

Scientific researcher, National Institute for Economic Research, Academy of Economic Studies of Moldova

https://orcid.org/0000-0002-3300-4054
ceban.alexandru.rpjh@ase.md

Received 29 October 2024

Accepted for publication 20 December 2024

SUMMARY

Agricultural sector of Moldova is of particular importance in the context of the benefits and added value that it brings to the development of the national economy. Its proper development is conditioned, inclusively, on the public support allocated to farmers, via the subsidy program. The broad discussions on the efficiency of subsidies have been fueled by the necessity to evaluate their impact on the development of agri-food sector in particular and economy, in general. Therefore, monitoring and evaluation represent essential elements of agricultural and rural policies. The aim of the paper is to present an example of the practical and operational policy monitoring tool (survey and indicators) for assessing the short-term efficiency of subsidies in Moldova. The tool is based on the use of non-representative survey performed once or two times per year in order to inform decision makers about the impacts of the subsidies on farm performance in terms of productivity, production, employment, size, but also the opportunity to obtain the feedback from subsidies recipients. The survey is intended for beneficiaries of all categories of subsidies, thus being useful for midterm review of budget support. The results of the first-time implementation of the tool present an increased efficiency in investments, profits, land productivity, labor productivity and mechanization. The survey represented itself as a useful tool for monitoring the short-term efficiency of subsides, capable to assess the specific impacts on the sector. At the same time, the paper presents a series of further improvement needed for a better operation of this policy monitoring tool in order to make it more functional, user-friendly, less time consuming, requiring a limited number of case studies for confirmation of the obtained results.

Keywords: Policy monitoring, policy evaluation system, agricultural policy, operational survey, subsidies, Republic of Moldova

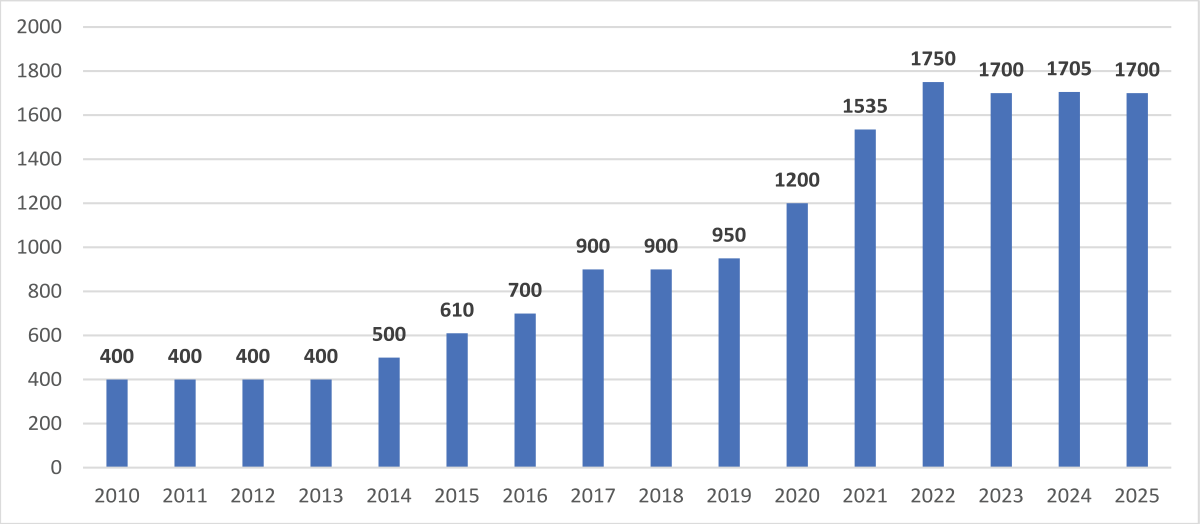
INTRODUCTION

Agricultural sector of the Republic of Moldova plays an important role in the socio-economic development of the country. In the recent years, it has been affected by a series of challenges, including the increase in input prices, supply chain disruptions, severe droughts, Russian-Ukrainian war, etc. These circumstances put an additional pressure on both, the sector in general and on farmers in particular. Public support for farmers is intended not only for the sector modernization and transformation, but also for overcoming the existing challenges and represents a significant precondition for their success and further involvement in the agricultural business. At the same time, the assessment of the effects of public support through subsidies on the sector's performance represents an important aspect for the development of public policies in the field of the agricultural sector.

Until March 2023, the subsidy policy carried out by the Ministry of Agriculture and Food Industry (MAFI) was regulated by Law no. 276/2016 on the principles of subsidies in the development of agriculture and the rural environment (Parliament of the Republic of Moldova, 2017). Taking into account the new challenges faced by the sector like adverse climate conditions, shifts in foreign trade partners and the war from Ukraine, on March 31, 2023, a new subsidy policy was approved that aims to increase the competitiveness and sustainable development of the agro-industrial sector, to ensure the sustainable management of natural resources and sustainable socioeconomic development in rural areas (Parliament of the Republic of Moldova, 2023). According to this Law, the distribution of the National Fund for Development of Agriculture and Rural Environment (NFDARE) is being approached, taking the shape of the following forms of subsidies: payments in advance; post-investment payments; investment payments in stages; direct payments; complementary payments. The new introduced subsidy priorities and measures support farmers and aim to increase efficiency, competitiveness and productivity of the agri-food sector. The introduction of additional measures such as advance subsidies or direct payments per head of livestock are in line with EU provisions and will contribute to the modernization of the agricultural sector. At the same time, it becomes necessary to connect the documents to the provisions of CAP and to the community regulatory framework.

During the period 2010 to 2024, the total value of the National Fund for the development of agriculture and rural environment (NFDARE) has increased from 400 mil. MDL to 1,7 bil. MDL, while the number of received applications improved from 1906 in 2010 to 16334 requests in 2023.

Figure 1
Dynamics of the value of NFDARE, mil. MDL



Source: AIPA, 2025

Monitoring and evaluation are essential elements of agricultural and rural policies. They are carried out to verify whether the objectives of policy intervention are reached and develop recommendations on possible improvements and political priority setting. While monitoring represents a continuous task of reviewing information and, in particular financial flows, evaluation involves a judgement of interventions according to their results, impacts, and needs they aim to satisfy (Kusek, Rist, 2004).

One of the fundamental instruments applied by the EU member States helping to measure the efficiency and effectiveness of budget support is farm data collected from represented samples (Farm Sustainability Data Network, FSDN). Once collected, it is then applied in ex-post and ex-ante evaluations. Moldova does not possess such an instrument, however its budget support to the farmers is substantial and of particular importance and there is a data available on subsidies' recipients. Therefore, in 2019, an instrument was requested by the Agency of Intervention and Payments in Agriculture (AIPA) as a simple tool for annual monitoring of the operational implementation of the national support schemes applied under the National Strategy on Agriculture and Rural Development. A tool in the form of a farm questionnaire allowing to better understand subsidies' recipients before and after the subsidy has been developed, trying to measure the immediate impacts of the subsidies on production or employment, but also collecting some valuable feedback from farmers regarding rural lifestyle, as well as a process to apply and receive subsidy on the account.

In this paper the analysis is presented from the data collected by such a tool (questionnaire is available in the annex of the paper). Therefore, a survey was implemented with the objective to provide MAFI and AIPA with monitoring and some evaluation data in order for MAFI – on an ongoing basis – to improve the measure design and thus increase effectiveness and efficiency of the measures implemented under the National Strategy on Agriculture and Rural Development. The survey covering beneficiaries from 2017 and 2018 is intended to be considered as an operational tool for ongoing collection of effect data from beneficiaries. In the administrative cycle of the agency, the tool can be applied regularly during the year.

Therefore, we show that it brings more understanding about key characteristics of the subsidies' recipients, but also clarity about the impact of the subsidies received by the farmers, providing valuable feedback to AIPA and MAFI. It brings additional information on how to improve processing of the subsidies, differently address conditionalities or perhaps, propose amendments to the particular support measure. The analysis supports with evidence the discussions on how e-application and/or feedback systems for direct support should be developed to improve the efficiency of the application, evaluation, payment execution and reporting processes. The tool feels the vacuum of analytical tools and yet, with its caveats (not represented sample, only beneficiaries are included), should be considered an *operational policy monitoring tool* that feeds the discussions of mid-term policy reviews or contributes to the ex-post evaluations. The authors are also hopeful about the prospects for a full-fledged FSDN will be developed in Moldova, providing more data for the fundamental analysis of the impacts of budget support.

Aiming to present an example of the practical and operational policy monitoring tool (survey and indicators) that could be applied with randomly selected farmers for assessing the short-term efficiency of subsidies in Moldova, several theoretical approaches that are crucial for understanding how subsidies impact agricultural productivity, efficiency, or sustainability are shown in the paper.

One theoretical approach is related to the use of *econometric models* to evaluate the effectiveness of agricultural subsidies. Thus, the model applied by Li et al (2022) evaluates the agricultural subsidy effectiveness from the three aspects of farmers' total sown area, total grain output, and total income, highlighting the importance of equilibrium conditions in assessing policy effectiveness. Similarly, another study uses a theoretical framework to analyze the effects of production uncertainties on the efficiency of agricultural subsidy policies, emphasizing the role of food security and environmental protection as constraints (Chen et al, 2019).

The use of combined algorithms and *data envelopment analysis* (DEA) represents another theoretical approach for evaluating agricultural subsidies. This approach measures the relative efficiency of regional financial subsidies and evaluates their implementation direction, aiming to enhance government finance benefits and promote sustainable agricultural development (Tang et al, 2017).

The theoretical approaches also consider the broader policy implications of subsidies by using a *Stochastic Frontier Analysis* (SFA) approach to assess its impact on farm productivity and efficiency (Houari et al, 2023).

The *survey* method has been approached by Sha et al (2024), emphasizing its important role in assessing the effects of subsidies on the increase of income of farmers and their impact on food production. Moreover, the survey method has been applied by Daugbjerg et al (2005) in Germany, Portugal and the United Kingdom assessing the perception of farmers related to the dependence level on public support. Another survey was used in Czech Republic that concluded on the importance of subsidies in diminishing loses, increase farmers' income and reducing income variability (Mazankova et al, 2025).

Thus, theoretical approaches for designing policy monitoring and evaluation instruments in the agricultural sector involve a combination of econometric models, data envelopment analysis, surveys and nonparametric methods. These approaches provide a comprehensive framework for assessing the short-term efficiency of subsidies, considering factors such as production uncertainties, technical efficiency, and sustainability. By employing these theoretical models, policymakers can better understand the impacts of subsidies and design more effective agricultural policies.

Nevertheless, for the Republic of Moldova, the operational policy monitoring tool provides for additional benefits and advantages, as it implies a relatively simple form of analysis, available to be carried out either by research organizations or organizations responsible for the agricultural policy implementation and distribution of subsidies. It can also be repeated with the assessment of the same indicators (and additional ones), for a continuous evaluation and gives the possibility to provide for recommendations for policy makers. Moreover, farmers are acquainted with surveys, many of them participating yearly in different survey procedures. Results of the implementation of the survey as an instrument to assess the short-term efficiency of subsidies will allow to develop targeted public policies in the field of agriculture, based on the bottom-up approach and taking into account suggestions of farmers.

LITERATURE REVIEW

Even the importance of the topic is unquestionable, there are still a few approaches to assessment of public support as a component of the agricultural policy, especially in the Republic of Moldova. Overall, the assessment of the short-term efficiency of subsidies for the agrifood sector represents a complex interplay of theoretical frameworks and applied methodologies. The literature review carried out presents some developing approaches that need for not only wide-ranging policy evaluations, but also adaptive monitoring systems to ensure that subsidies fulfill their intended purposes, with as less as possible inefficiencies.

An analysis on the impact of subsidies on the technical efficiency of dairy farms has been performed by Latruffe et al (2017). The results of research present that the positive, negative or null effects depend on the country and less efficiency is observed as a result of the introduction of decoupling payments. Additionally, the application of methodology such as nonparametric efficiency analysis by Minviel and Witte, offers frameworks to evaluate the impacts of subsidies more robustly (Minviel & Witte, 2017). Their findings highlight the necessity for diverse methodologies in assessing the effectiveness of subsidy policies in agriculture, enabling policymakers to make informed decisions based on empirical evidence.

Subsidies as an instrument in agriculture finance has been approached by Meyer (2011), mentioning that a watchful development of products, policies, institutions, and supportive infrastructure has led to greater success. Subsidies also play an important role in transition towards a sustainable agricultural system (Heyl et al, 2022).

On the other hand, the discourse extends into the realm of economic resilience, presented by Yang et al., who state that decoupled subsidy policies can enhance agricultural resilience in China's corn-producing regions (Yang et al., 2023). Another relevant aspect is the impact of public resource allocation on agricultural growth. Brad et al. emphasize the correlation between financing measures and short-term efficiencies, suggesting that a deeper understanding of the dynamics between agricultural unit financing and subsidy impacts can stabilize relations and enhance overall efficiency (Brad et al., 2018). A specific type of subsidies – input subsidies – mainly, subsidies for fertilizers, have been assessed by Dorward et al (2008) and Chirwa and Dorward (2012).

A similar instrument as used in this paper, of a survey – Chinese Social Survey - is being used in China in order to evaluate the impact of agricultural subsidies on the farmers' prosperity. The results of the research carried out by Sha et al (2024) point on the increase of per capita income as a result of received subsidies and raise of the income as a result of land transfer. Economic experiments represent another direction of evaluating the agricultural policy and intervention programs. They represent important tools of assessment and have a great potential for further development (Colen et al, 2016).

With respect to Moldovan scholars engaged in research on the impact of subsidies on the development of agrifood sector, one can mention the most recent works of Cimpoies (2021), Cimpoies & Sarbu (2020), Dombrovschi (2020), Lucasenco (2021) have analyzed the dynamics on allocation of subsidies for the agricultural sector, with a general assessed positive impact based on increase of allocations and beneficiaries. Shik et al (2016), Stratan et al (2018), Herzfeld et al (2022) have assessed the public support through the use of OECD methodology, concluding on the market distortions, low levels of Producer Support Estimate indicator and the importance of the allocations to General Services.

A more complex analysis was performed by Mollers et al (2022) who carried out an impact assessment study based on 800 beneficiaries and non-beneficiaries of subsidies, analyzing the effectiveness of the existing policy measures. The impact assessment underlined that the investment subsidies had measurable positive effects on labor, farm production and economic success. Nevertheless, due to the complexity of the methodology approach, and limited capacities to carry out such an extensive research, the current proposed instrument is more suitable, viable and not very consuming in terms of involved resources.

DATA SOURCES AND USED METHODS

Monitoring the implementation and impact of agricultural policies under the National Strategy on Agriculture and Rural Development is increasingly important as the value of the NFDARE and number of beneficiaries increases continuously.

Therefore, a simple tool for annual monitoring of the operational implementation of the national support schemes applied under the National Strategy on Agriculture and Rural Development has been designed. The instrument aims to collect data through a survey. The requested data is related to achieved outputs, results and impacts of the investments. The tool is forecasted as a survey carried out on a regular basis and collected data can be compared with baseline. Therefore, the aim of the tools is to provide the Ministry of Agriculture and Food Industry (MAFI) and the Agency for Intervention and Payments in Agriculture (AIPA) with additional monitoring and evaluation data in order for MAFI – on an ongoing basis – to improve the measure design and thus increase effectiveness and efficiency of the measures implemented under the National Strategy on Agriculture and Rural Development.

The survey is designed to collect data, which are not included in the AIPA database today and intended to be considered as an operational tool for policy monitoring and evaluation based on the collection of data from beneficiaries. The questionnaire included questions on general data of respondents, membership of an association, quality certifications holders, subsidized measures, investment objects, use of insurance mechanisms and promotion instruments, export potential, types of financing the business (own sources, grants, subsidies, etc.), area, investment costs, financial data related to income from sales, costs, profit, production capacity, number of job places, use of innovations, reinvestment of subsidies, etc.

The survey targets in principle all measures and beneficiaries supported in 2017 and in 2018 in order to be able to track the effects after two years of the investment, in this case in 2019. A sample of beneficiaries had been selected, with a number of planned surveyed beneficiaries of 400, distributed on measures. The table below presents the measures and the number of planned and realized beneficiaries recruited to the survey.

Table 1

Measure overview, planned and realized number of beneficiaries included in the survey, % of realized to planned

Number	Name	Planned number of beneficiaries included in survey	Actual number of beneficiaries included in survey	% of realized to planned number of beneficiaries
1	*Investments in agricultural holdings for restructuring and harmonization to European Union standards*			
1.1	Stimulating investments for the production of vegetables and fruits on protected land (winter greenhouses, solariums, tunnels)	6	8	133
1.2	Stimulating investments for the establishment, modernization and deforestation of multiannual plantations, including vineyards and fruit plantations	84	72	86
1.3	Stimulating investments for the procurement of conventional agricultural machinery and equipment	91	75	82
1.4	Stimulating investments for the equipment and technological renovation of livestock farms	21	13	62
1.5	Stimulating the procurement of breeding animals and maintaining their genetic background	5	0	n.a.
1.7	Stimulating the lending of agricultural producers by commercial banks and non-banking financial institutions	41	12	29
2	*Investments in processing and marketing of agricultural products*			
1.6	Stimulating investments for the development of post-harvest and processing infrastructure	98	33	34
3	*Preparation for the implementation of actions related to the environment and rural area*			
2.2	Stimulating investments for the purchase of irrigation equipment	17	3	18
2.3	Stimulating agricultural producers to compensate irrigation costs	2	0	n.a.
2.4	Stimulating investments for the purchase of no-till and mini-till equipment	30	1	3
2.5	Supporting the promotion and development of organic agriculture	0	6	n.a.
4	*Improvement and development of rural infrastructure*	*5*	*0*	*n.a.*
5	*Consultancy and training services*	*0*	*0*	*n.a.*
Total		*400*	*118*	*30*
Statistical validity with a total number of beneficiaries of 5652		Planned	Realized	
		+/- 4.7%	+/- 9.0%	

Source: developed by authors

The planned number of surveyed beneficiaries would have given a statistical validity of +/- 4.7%, but the realized number of beneficiaries with validated data is 118, leading to a statistical validity of +/- 9.0% at the overall level of the survey. This is considered acceptable under the circumstances taken into consideration, especially in the context of first-time piloting of the survey. Moreover, the questionnaires were filled in by 182 respondents, but financial data necessary for the assessment was extracted from 118 answers, based on assessment of its viability and reliability. For the survey purpose, an online questionnaire was elaborated.

The survey was uploaded electronically and sent to 400 recipients of public support in 2017 and 2018 under The National Strategy for Agricultural and Rural Development. 182 filled in questionnaires were returned electronically. Data validation was further performed in order to ensure that data in the survey are correct regarding investments and financial data. 118 filled in replies have been used for the analysis. The survey period was the year of 2021.

THE RESULTS OF RESEARCH AND DISCUSSIONS

The table below presents the investments covered in the survey distributed on some of the main background categories[1].

Table 2

Investments distributed on farm size, legal type of farm, gender, age of farmers, membership of association and measures

Background category	Sub category	Total Investment 2017+2018, Million MDL	% of total investment	Average investment per beneficiary, million MDL
Type of agricultural producer	Large	277.6	36.7	1.725
	Medium	223.9	29.6	6.051
	Micro	75.2	10.0	5.01
	Small	179.1	23.7	3.58
Legal type of farm	Agricultural cooperative for entrepreneur services	10.6	1.41	10.6
	Agricultural production cooperative	22.9	3.04	5.725
	Cooperative	13.1	1.74	4.37
	Cooperative of entrepreneurs	66.5	8.81	33.25
	Individual enterprise	1.6	0.22	0.8
	JSC	77.2	10.22	12.867
	LLC	511.6	67.75	7.11
	Peasant farm	48.5	6.43	1.87
	Production cooperative	1.9	0.26	1.9
	State enterprise	0.9	0.12	0.9
Gender	Female	101.5	13.44	3.5
	Male	653.7	86.56	7.34
Age	Younger than 39 years	151.5	20.07	6.06
	40 - 49 years	127.9	16.94	6.09
	50 - 59 years	291.5	38.61	8.57
	Older than 60 years	184.1	24.38	4.84
Membership of an association	No	35.8	4.74	2.56
	Yes	719.4	95.26	6.92

[1] *The statistical validity of the findings in the survey are acceptable at the overall level, but when data and findings are broken down on lower levels: sub-measures, gender, age etc., the number of beneficiaries is low, and the solidity of data will be reduced. This should be taken into consideration, when the findings are discussed.*

Primary sub-measure 2017	Sub-measure	Investment 2017, million MDL	% of investment in 2017, 410 million MDL	Average investment per beneficiary, million MDL
	1.1	9.1	2.2	1.5
	1.2	193	47.1	4.7
	1.3	87.5	21.3	2.5
	1.4	23.4	5.7	2.9
	1.6	84.5	20.6	4.7
	1.7	5.6	1.4	1.9
	2.2	4.4	1.1	1.5
	2.4	1.5	0.4	1.5
	2.5	0.8	0.2	0.3
Primary sub-measure 2018	Sub-measure	Investment 2017, million MDL	% of investment in 2018, 159 million MDL	Average investment per beneficiary, million MDL
	0 (no investment in 2018)	0	0	0
	1.1	1.1	0.7	0.6
	1.2	58.4	36.7	1.9
	1.3	47.1	29.6	1.2
	1.4	10.5	6.6	2.1
	1.6	40.6	25.5	2.7
	1.7	1.0	0.6	0.1
	2.5	0.8	0.5	0.3
Total investment		755.2	100	6.4

Source: developed by authors

The population of beneficiaries in the survey analysis represents 755 million MDL in total investments in 2017 and 2018.

INVESTMENT EFFICIENCY

For the purpose of the analysis, investment efficiency is calculated as the relative increase in profit per invested MDL measured as a percentage from the year before the investment (2016) to the year after the investment (2019). This is a key indicator in this survey, where we relate the investments to the development in income and profit. It is obvious that the development in the performance of the farms depends on many other factors than just the investment. Weather, market trends, prices etc. all can influence the profits of the farmers. However, we do not find any big variations or changes in the sector environment during the period from 2016 to 2019, which are important and even can be decisive reasons for mentioning that the relationship between investments and performance cannot be used.

The investment efficiency is calculated as the relative increase in profit per invested MDL. The profit in 2016 was estimated to be 209 million MDL, increasing with 107 million MDL to 317 million MDL in 2019. With total investments of 755 million MDL in 2017 and 2018, the increase per invested MDL is 14.2 MDL. (317 million MDL - 209 million MDL/755 million MDL=14.2). With a ratio of 14.2% at the level of the total population of the survey (+/- 9% statistical validity), each invested MDL generates 0.142 MDL in increased profit per year. This is equal to an average payback time of the investment of 7 years.

Small farms have demonstrated the highest investment efficiency measured on profits with 19.9%. Large farms have 14.9% in efficiency, medium farms have an efficiency of 12.4%, while micro farms have an efficiency of 3.3%.

Younger farmers have had a difficult time with negative investment efficiency of -4.2%, while the farmers in the category of 40 - 49 years have 25.9% in profit per invested MDL, farmers between 50 and 59 years have 20.8% per invested MDL, and older farmers above 60 years have 10.9% in efficiency per invested MDL. The most efficient category of farmers is then the farmers between 40 and 49 years old.

With respect to gender in the sample, the female farmers

have generated an efficiency of 18.1%, while their male colleague farmers have generated only 13.6%.

Membership of an association has also shown to be important. We have asked the beneficiaries, if they are members of an association of farmers, processors etc. The idea was that there would be positive effects for beneficiaries being members of an association compared to beneficiaries not being members. The members have generated 14.6% in efficiency, which is in compliance with the overall average of the population, while the non-members only have generated only 7.1% in investment efficiency.

The biggest sub-measure in value in 2017, as well as in 2018 is sub-measure 1.2 Stimulating investments for the establishment, modernization and deforestation of multiannual plantations, including vineyards and fruit plantations with a total of 196 million MDL (2017) and 101 million MDL (2018) in total investments with the own sources as the biggest funding source. The efficiency was a bit low of 7.1% in 2017, but 14.9% in 2018, as average. The volume of investments under this sub-measure makes the findings more robust than in sub-measures with lower volume and fewer beneficiaries.

Sub-measure 1.3 Stimulating investments for the procurement of conventional agricultural machinery and equipment was second biggest in value in 2017 with a negative efficiency of -1% and third biggest in value in 2018 with a much better efficiency of 17.3%.

The most efficient sub-measure in 2017 is sub-measure 2.2 Stimulating investments for the purchase of irrigation equipment with 238%, but only 3 beneficiaries in the survey have used the sub-measure with a total investment of 4 million MDL. This makes the finding a bit fragile.

The investment efficiency related to profit is summarized in the tables below together with the total investment costs of the individual measures and their share of total investments in 2017 and 2018 respectively.

Table 3

Investment efficiency at sub-measure level and share of total investment, 2017

Sub-measure	Investment efficiency, profit, %	Total investment, million MDL	Share of total investment, %
2.2 Stimulating investments for the purchase of irrigation equipment	238	4	1
1.1 Stimulating investments for the production of vegetables and fruits on protected land (winter greenhouses, solariums, tunnels)	40	9	2.2
1.6 Stimulating investments for the development of post-harvest and processing infrastructure	35.5	53	12.9
2.5 Supporting the promotion and development of organic agriculture	17.3	1	0.2
1.4 Stimulating investments for the equipment and technological renovation of livestock farms	17	23	5.6
1.7 Stimulating the lending of agricultural producers by commercial banks and non-banking financial institutions	5.6	34	8.3
1.2 Stimulating investments for the establishment, modernization and deforestation of multiannual plantations, including vineyards and fruit plantations	7.1	196	47.8
1.3 Stimulating investments for the procurement of conventional agricultural machinery and equipment	-1.0	87	21.2
2.4 Stimulating investments for the purchase of no-till and mini-till equipment	-146	2	0.5
All sub-measures	n.a.	410	100

Source: developed by authors

From a share of investment point of view, the most important sub-measure in 2017 is sub-measure 1.2 with 47.8% of total investments in 2017 and an efficiency of 7.1%. In 2018, the share for this sub-measure is still high,29.3%, and the efficiency has increased to 14.9% which is close to the overall average of 14.2%. The quantitative survey approach is not suited to provide qualitative information about the reason to the finding that the sub-measure in 1 2017 has a relatively low efficiency, although still positive, and why it in 2018 has increased. An in-depth case analysis of the findings in the survey, supplemented with case interviews may be relevant to shed more light on this question.

The same approach can be used to identify the reasons to the extreme high and low efficiency for sub-measure 2.2 and sub-measure 2.4 respectively in 2017, and sub-measure 1.1 in 2018.

Table 4

Investment efficiency at sub-measure level and share of total investment, 2018

Sub-measure	Investment efficiency, profit	Total investment, million MDL	Share of total investment, %
1.4 Stimulating investments for the equipment and technological renovation of livestock farms	23.6	4	1.2
1.6 Stimulating investments for the development of post-harvest and processing infrastructure	17.9	82	23.8
1.3 Stimulating investments for the procurement of conventional agricultural machinery and equipment	17.3	73	21.2
2.5 Supporting the promotion and development of organic agriculture	17.3	1	0.3
1.2 Stimulating investments for the establishment, modernization and deforestation of multiannual plantations, including vineyards and fruit plantations	14.9	101	29.3
1.7 Stimulating the lending of agricultural producers by commercial banks and non-banking financial institutions	1.0	64	18.6
1.1 Stimulating investments for the production of vegetables and fruits on protected land (winter greenhouses, solariums, tunnels	-18.7	1	0.3
All sub-measures	n.a.	345	100

Source: developed by authors

FUNDING SOURCES

Access to capital is important for potential beneficiaries of investment support schemes. Own sources are the most important source for funding for all categories of farms. It is first and foremost the case for micro farms with 67.4%. Large farms use own sources for funding of 61% of the investments, while medium farms use own sources for 52.5%. Small farms use own sources for 48% of investments in 2017 and 2018. Subsidies from AIPA and MAFI is the second most important source of capital for funding of investments. For medium farms it is 24%, for small farms it is 23.4%, for micro farms it is 22%. For the large farms it is only 11%. Bank credits are most important for large farms with 27% and play only a minor role for micro farms with only 10%. Small farms use bank credits to 24.4% of the funding and medium farms 22%. Grants from donors play no decisive role for any of the size categories of farms.

Table 5

Funding source, farm size categories

Farm size category	Funding source	2017, Million MDL	%	2018, Million MDL	%	Grand Total	%
Large	*Total Investment*	*151.6*	*100*	*125.1*	*100*	*276.8*	*100*
	Bank Credits	46.3	30.54	28.8	23.06	75.1	*27.16*
	Grants	0.6	0.41	1.0	0.79	1.6	*0,58*
	Own Sources	86.9	57.31	81.8	65.42	168.7	*60.97*
	Subsidies	17.8	11.73	13.4	10.73	31.2	*11.28*
Medium	*Total Investment*	*123.6*	*100*	*100.2*	*100*	*223.9*	*100*
	Bank Credits	21.7	17.57	27.8	27.74	49.5	*22.13*
	Grants	2.7	2.18	0.2	0.20	2.9	*1.30*
	Own Sources	70.7	57.26	46.6	46.53	117.4	*52.46*
	Subsidies	28.4	22.99	25.5	25.52	54.0	*24.12*
Micro	*Total Investment*	*41.5*	*100*	*33.7*	*100*	*75.2*	*100*
	Bank Credits	6.1	14.76	1.4	4.36	7.6	*10.10*
	Grants	3.5	0.85	0	0.00	0.3	*0.47*
	Own Sources	26.2	63.24	24.4	72.52	50.7	*67.40*
	Subsidies	8.7	21.15	7.8	23.12	16.5	*22.03*
Small	*Total Investment*	*93.0*	*100*	*86.1*	*100*	*179.1*	*100*
	Bank Credits	24.0	25.81	19.7	22.92	43.7	*24.42*
	Grants	6.5	7.08	1.1	1.32	7.7	*4.32*
	Own Sources	42.6	45.79	43.0	50.01	85.6	*47.82*
	Subsidies	19.8	21.31	22.1	25.75	42.0	*23.44*

Source: developed by authors

JOB CREATION

For the agricultural producers participating in the survey, the average employment before the investment was 40 full time workers, increasing in 2019 to 46 full time. It is a growth of 15.7% from 2016 to 2019. This means that 703 full time jobs have been created. The growth in female workplaces was 18%. Furthermore, seasonal employment is generated, but the volume of this employment effect is not calculated here.

LABOUR PRODUCTIVITY

Labour productivity provides information about the value generated per full time worker in the sector. Investments will typically lead to an increase in total factor productivity as well as in labour productivity. In this survey we use income as a proxi indicator instead of gross value added (GVA), when we estimate the labour productivity. The increase in employment from 4470 fulltime jobs in 2016 to 5173 jobs in 2019 is equal to 703 fulltime jobs, while the income from agricultural activities increased with 38.9% or 847 million MDL from 2177 million MDL to 3024 million MDL in 2019. The labour productivity was 487,025 MDL in 2017 and increased to 584,574 MDL in 2019. This leads to an increase in labour productivity of 20%.

Table 6

Labour productivity 2017 and 2019 and increase

	2017	2019	Increase	%
Total income, million MDL	2177	3024	847	38.9
Employment, FTE	4470	5173	703	15.7
Labour productivity (proxi) MDL/FTE	487025	584574	97549	20.0

Source: developed by authors

LAND PRODUCTIVITY AND MECHANIZATION

The beneficiaries had in 2019 around 92000 ha more in operation than in 2017 before the investments took place, which represents an increase of 6.8%. At the same time, the survey findings related to mechanization are also solid. The beneficiaries have been asked to indicate the number of equipment younger than 2010 for the years before investment (2016) and 2019. Thus, the number of equipment units increased from 2017 to 2019 with 30%, and the average per farm increased 14.5% leading to the expectation that the overall factor productivity has increased as a consequence of the investments.

Table 7

Agricultural equipment, units

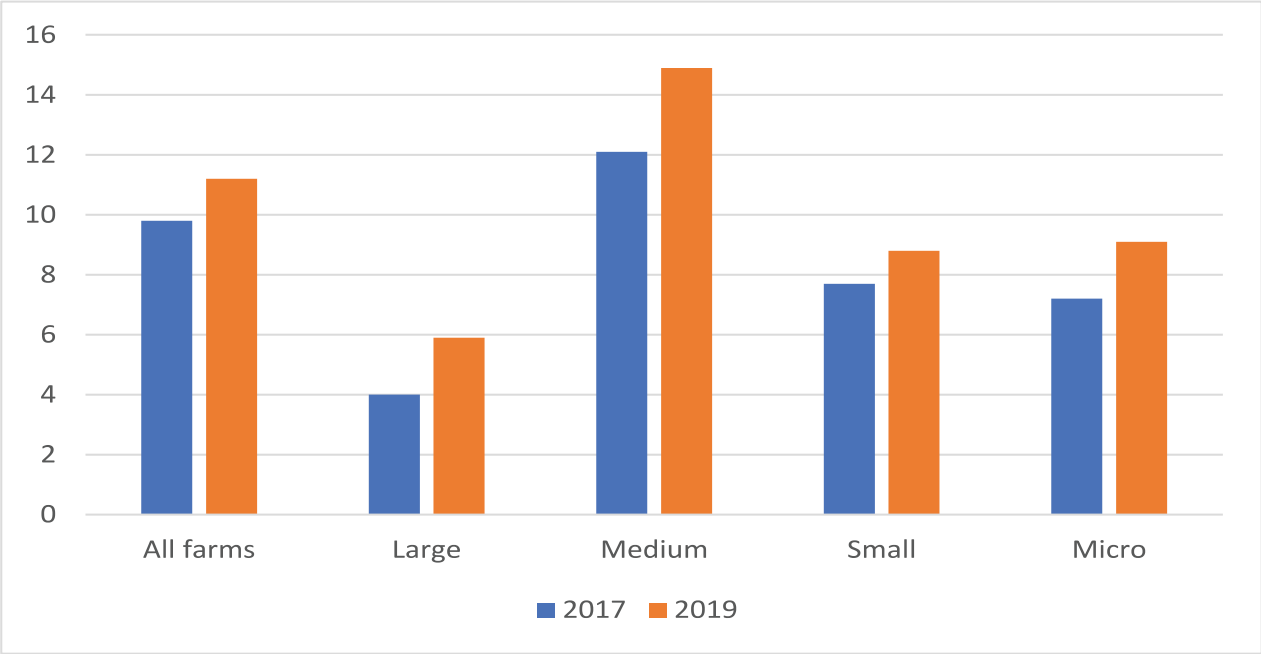
Topic	2017	2019	Increase	%
Numbers	1443	1874	431	29,9
Farms	104	118	14	13,5
Average	13,9	15,9	2	14,5

Source: developed by authors

PRODUCTIVITY

The productivity is measured as tons/ha as an average of the commodity crops of the producers. It is typically wheat, corn, sunflower, potatoes, bulk table grapes etc. The yield per hectare is thus artificial and not representing one single crop, but the average productivity of all crops produced. We can observe from the findings that for all groups of farms the number of farms reporting a productivity level in 2019 has increased form 2017 with 25%. That means that 55 farms have a production of commodity crops in 2019, while the in 2017 it was only 44 farms in the survey. The average productivity has increased from 9,8 tons/ha to 11,2 tons/ha or 14,3%.

Figure 2
Average productivity, tons/hectares, main crops, 2017 and 2019, growth



Source: developed by authors

QUALITY SCHEMES

Quality schemes are considered to contribute positively to the performance of the agricultural producers. According to the findings from this survey, the ratio of agricultural producers having quality certificates is 32% (31 beneficiaries out of 98 providing an answer to the questions). Large and medium sized producers are using the schemes more frequently than small and micro farms.

For the beneficiaries with quality certificates, the investment efficiency is 29% and two times higher than the average for the surveyed population. Profits increased with 111 million MDL from 2016 to 2019 and with investments of 388 million MDL in 2017 and 2018.

The most used quality certificates are ISO22000, Global Gap, HACCP and a few others.

USE OF INSURANCE

Only 18 beneficiaries have indicated in the survey that they use insurance, while 73 do not do it. The small farms use insurance more frequently than the other size groups (22%): Large farms with 20%, medium farms with 17% and micro farms with 20%. All in all, 19.8% of the beneficiaries use insurance.

USE OF PROMOTIONAL INSTRUMENTS

The total investments of the beneficiaries using promotional instruments is 62 million MDL in 2017 and 2018. They have increased their profit with 263% (4.8 million MDL) from 2016 reaching 6.3 million MDL in 2019.

Table 8
Use of promotional instruments

Farm size	Yes	No	Total
Large	1	9	10
Medium	4	26	30
Micro farms	3	11	14
Small farms	8	37	45
Total	16	83	99

Source: developed by authors

EXPORT

None of the beneficiaries in the survey had any export before the investment in 2016, and only 8 beneficiaries (7%) have made export after the investment.

If we look at the increase in income and profits for the agricultural producers now exporting, we see an increase in profits in 2019 compared to the situation before investment with 38%, which is less than the increase in profits of the total population (51%).

Income from sales increased 46% from 37.8 million MDL in 2016 to 55.3 million MDL in 2019. The 46% increase in income is higher than the increase in income for the full population of producers, which is 39%.

Difficulties encountered during the survey process were mainly related to:

- Moldovan farmers are not very acquainted with online types of survey. Some of them encountered difficulties in accessing the form, filling it in and submission.
- The questions that created some difficulties were mainly related to financial and investment data.
- Answering financial questions required the involvement not only of the farm manager, but also of the accountant. This made difficult for some farmers to fill in the survey form, as in some cases, accountant has a remote work and was not present in the office.
- Some farmers complained about the complexity of the survey, necessity for many exact numbers, and considerable amount of time spent for filling it in (according to observations of the local expert, time for completion of one questionnaire ranged between 1.5 – 4 hours, depending on data availability at the moment).
- No compulsory or motivating mechanism has been developed in order to encourage farmers to take a more active part in the survey, this resulting in a lower number of observations.
- Russian speaking farmers encountered some difficulties in filling in the survey, due to language barrier.
- Some questions related to technical topics and not only financial topics were difficult for the farmers to answer precisely.

Based on the piloting carried out, the following **recommendations** are applicable in order to improve the relevance and utility of the survey and its operationalization as an instrument:

1. Better information to beneficiaries about how to enter correct data in the questionnaire in the future.
2. Better training of beneficiaries about how to use data from their balance sheets.
3. Improvements of the survey questionnaire is needed, for example regarding data on employment before the investments.
4. A more focused and precise questionnaire could be useful in order to increase the response rate.
5. Personal interviews or telephone supported interviews could increase the response rate and improve the data quality.
6. Involvement of territorial offices of AIPA in contacting the potential respondents and distribution of the questionnaire.
7. Utilization of massive qualitative data is resource demanding and should be avoided, unless qualitative studies should complement the quantitative analysis provided here.
8. Translation of the questionnaire in the Russian language in order to reach the Russian speaking population.
9. Further analysis of the collected data can take place with the help of a case approach, where cases (beneficiaries) selected among the participating beneficiaries in the survey can be explored in more details. The in-depth analysis can take advantage of personal interviews in order to collect additional information about the specific design of the sub-measures, both regarding content of the sub-measure (eligibility criteria, selection criteria, prioritization

of sectors, aid intensity etc.) and the administration of the sub-measure (application procedures, administrative controls and payment procedures etc.). This combined approach using a quantitative survey to collect information of the general level and using case studies to collect qualitative information on in-depth issues, is common procedures in international evaluations of programs and policies.

CONCLUSIONS

The paper presents the analysis of the data collected by a policy monitoring tool. A survey was implemented with the objective to provide MAFI and AIPA with monitoring and some evaluation data in order for MAFI – on an ongoing basis – to improve the measure design and thus increase effectiveness and efficiency of the measures implemented under the National Strategy on Agriculture and Rural Development.

The findings reveal both the positive impacts of subsidies on agricultural productivity and efficiency, as well as areas requiring improvement for future policy development. The results highlight that the subsidies granted through NSARD have had a generally positive impact on agricultural production, profitability, and efficiency.

The main findings of the tool implementation are summarized below:

- Income generation of the investments is 39% on farm income and 51% on profits. This is high, compared to the development in the agricultural sector in general in the period.
- Investment efficiency is 14.2% for profit and considered high compared to the sectoral growth in value of production and gross value added (GVA).
- Investment efficiency is highest for small farms (20%) and lowest for micro farms (3%).
- Farmers in the age category from 40 years to 49 years has the highest investment efficiency with 25.9%
- Female farmers have a higher investment efficiency than male farmers with 18.1% against 13.6%.
- 700 new fulltime jobs have been generated with an average investment cost of 0.9 million MDL
- Labour productivity has increased with 20% from 2016 to 2019.
- Farm mechanization has increased with 30%
- Land under operation has increased with 7%
- Productivity (tons/hectare) of the main commodities has increased with 14.3%
- Export is not playing any big role in the survey population. Only 8 producers out of 118 have export after the investments
- Promotional instruments are not used a lot (only of 16% of the beneficiaries) and they do not demonstrate high efficiency
- Quality certificates provide positive effects to the agricultural producers. 32% of the beneficiaries use different types of quality certificates and demonstrate an investment efficiency on profits of 29%, which is double the efficiency of the total population in the survey.

- The most successful agricultural producer measured in investment efficiency (indicated in brackets for each category) is:
  - small scale producer (19.9%)
  - female producer (18.1%)
  - age between 40 and 49 years (25.9%)
  - member of and association (14%)
  - has invested in measure 1.1 Stimulating investments for the production of vegetables and fruits on protected land (winter greenhouses, solariums, tunnels) in 2017 (40.2%) and
  - measure 1.4 Stimulating investments for the equipment and technological renovation of livestock farms in 2018 (23.6%)
  - is a quality certificate holder (29%).

Notably, the efficiency of certain subsidy measures varied significantly across different types of farms. Despite the positive impact observed, the analysis also identified certain gaps in the monitoring and evaluation of subsidy effectiveness. The findings underscore the need for more robust data collection and analysis tools, which can provide policymakers with a clearer understanding of subsidy outcomes and guide adjustments to the subsidy framework. Thus, an ex-ante assessment could inform decision makers whether formulated policy objectives are sufficiently specific and whether instruments intended could be effective in achieving policy objectives. As a base for an ex-post evidence-based policy development, sound and representative information sources are a prerequisite. FADN-like farm survey serving an impact assessment study of farm-specific subsidies was supported by FAO in 2021. However, the development of a monitoring and evaluation system on a continuous basis is required to assess the potential impacts of the budgetary transfers to the agricultural sector including mid-term effects.

Administratively, it is recommended to assign a policy analysis and monitoring function in MAFI by providing additional capacities (economists, statisticians) with a plan to pursue on policy monitoring and evaluation including value chain analysis studies, price monitoring,

independent product specific studies and general impact assessment (at least once in two years) based on farm survey. Such a unit should have access to detailed statistical databases of the different authorities across the Republic of Moldova in order to produce even more consistent estimates of support indicators taking into account differences in product quality and uses.

At the same time, the number of existing support measures is relatively big and findings also point to areas where further refinement of the subsidy system may be needed. It is resource demanding for MAFI and AIPA to monitor and evaluate a big number of support schemes. If subsidies are focused on a smaller number of measures, it will be possible to conduct full review of these support measures. These reviews can be coupled with open and interactive policy dialogue with agricultural producers and NGOs, consumers and based on discussion to prioritize budget support.

As Moldova's agricultural sector continues to evolve, the operational policy monitoring tool will ensure that public support is better aligned with the diverse needs of farmers and contributes more effectively to the long-term sustainability and competitiveness of the sector. The operational tool proposed in this research provides a valuable foundation for future evaluations, enabling ongoing improvements in the design and implementation of agricultural support measures.

ACKNOWLEDGEMENTS

This applied part of this paper represents a synthesis of an analytical report[1] prepared during the implementation of a FAO project in the Republic Moldova between 2020 and 2021 (TCP/MOL/3701 - Building MARDE Administrative Capacities for the Implementation of Agrifood Products Promotion Policy)[2]. The theoretical part of the article was developed in the framework of the of Subprogram 030101 „Strengthening the resilience, competitiveness, and sustainability of the economy of the Republic of Moldova in the context of the accession process to the European Union", institutional funding.

REFERENCES

Agenția de Intervenție și Plăți pentru Agricultură (AIPA). (2025). *NFDARE Annual Management Reports*. www.aipa.gov.md

Brad, L., Popescu, G., Zaharia, A., Diaconeasa, M. C., & Mihai, D. (2018). Exploring the Road to Agricultural Sustainability by Assessing the EU Debt Influencing Factors. *Sustainability*, *10*(7), 2465. https://doi.org/10.3390/su10072465

Chen, Y., & Chen, M. (2019). Subsidies under uncertainty: Modeling of input- and output-oriented policies. *Economic Modelling*, *85*, 39-56. https://doi.org/10.1016/j.econmod.2019.05.005

Chirwa, E. W., & Dorward, A. R. (2012). *Private sector participation in the farm input subsidy programme in Malawi, 2006/07 - 2011/12*. Policy Brief 2. https://eprints.soas.ac.uk/16742/1/Chirwa%20and%20Dorward%202012%20Private%20Sector%20Policy%20Brief%20June%202012%20Final.pdf

Cimpoies, L. (2021). Agricultural support policy in Moldova: a key factor to agricultural development? *Scientific papers. Series Management, Economic Engineering in Agriculture and Rural Development*, *21*(2), 169-176. https://www.researchgate.net/publication/352762084_AGRICULTURAL_SUPPORT_POLICY_IN_MOLDOVA_A_KEY_FACTOR_TO_AGRICULTURAL_DEVELOPMENT

Cimpoies, L., & Sarbu, O. (2020). The economic impact of farm subsidies in Moldova's agricultural sector development. *Scientific Papers. Series Management, Economic Engineering in Agriculture and Rural Development, 20*(2), 155-160. https://www.researchgate.net/publication/342889212_The_economic_impact_of_farm_subsidies_in_Moldova's_agricultural_sector_development

Colen, L., Gomez y Paloma, S., Latacz-Lohmann, U., Lefebvre, M., Préget, R., & Thoyer, S. (2016). Economic Experiments as a Tool for Agricultural Policy Evaluation: Insights from the European CAP. *Canadian Journal of Agricultural Economics*, *64*(4), 667-694. https://doi.org/10.1111/cjag.12107

Daugbjerg, C., Tranter, R., Jones, P., Little, J., Costa, L., Knapp, T., Sottomayor, M., & Swinbank, A. (2005). The visibility of agricultural subsidies and market illusions in the Common Agricultural Policy: Some evidence from farmers' views in Germany, Portugal and the United Kingdom. *European Journal of Political Research*, *44*(6), 749-766. https://doi.org/10.1111/j.1475-6765.2005.00246.x

Dombrovschi, I. (2020). Efficiency of subsidies allocation to agricultural enterprises in the Republic of Moldova. *Economy and Sociology*, 1, 53-63. https://doi.org/10.36004/nier.es.2020.1-05

[1] Special thanks to Morten Kvistgaard, an international agricultural and rural development expert with working experience from more than 40 countries, including the Western Balkans and Central Asia, for his significant contribution in the development of the monitoring tool

[2] The views and findings are the authors' own and don't imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the UN

Dorward, A., Chirwa, E., Boughton, D., Crawford, E., Thomas, J., Slater, R., Kelly, V., & Tsoka, M. (2008). *Towards 'Smart' Subsidies in Agriculture? Lessons from Recent Experience in Malawi*. Natural Resource Perspectives 116. Overseas Development Institute. https://www.files.ethz.ch/isn/93191/NRP116.pdf

Herzfeld, T., Lucaşenco, E., & Zvyagintsev, D. (2022). Agricultural policy development in Moldova over one decade: recent estimates and an outlook towards EU accession. *Economy and Sociology*, 2, 7-21. https://doi.org/10.36004/nier.es.2022.2-01

Heyl, K., Ekardt, F., Sund, L., & Roos, P. (2022). Potentials and Limitations of Subsidies in Sustainability Governance: The Example of Agriculture. *Sustainability*, *14*(23), 15859. https://doi.org/10.3390/su142315859

Houari, M., Fayçal, M., & Guellil, M. (2023). *The effect of subsidies on thechnical efficiency of Algerian agricultural sector: Using Stochastic Frontier Analysis (SFA) Approach*. https://doi.org/10.21203/rs.3.rs-2670680/v1

Kusek, J. Z., & Rist, R. C. (2004). *Ten Steps Ten Steps to a Results-Based Monitoring and Evaluation System*. The World Bank. https://openknowledge.worldbank.org/server/api/core/bitstreams/f87d81cf-54e9-5a35-ab9e-dc24fc61f85a/content

Latruffe, L., Bravo-Ureta, B. E., Carpentier, A., Desjeux, Y., & Moreira, V. H. (2017). Subsidies and Technical Efficiency in Agriculture: Evidence from European Dairy Farms. *American Journal of Agricultural Economics*, *99*(3), 783-799. http://www.jstor.org/stable/26155898

Li, C., Sha, Z., Sun, X., & Jiao, Y. (2022). The Effectiveness Assessment of Agricultural Subsidy Policies on Food Security: Evidence from China's Poverty-Stricken Villages. *International Journal of Environmental Research and Public Health*, *19*(21), 13797. https://doi.org/10.3390/ijerph192113797

Lucasenco, E. (2021, October 15-16). Public support to agricultural producers in the Republic of Moldova - trends and recommendations. In: *Creşterea economică în condiţiile globalizării = Economic growth in the conditions of globalization*: conferinţa internaţională ştiinţifico-practică (15th Edition, Vol. 1, pp. 368-374). Institutul Naţional de Cercetări Economice. Chişinău: INCE. https://ibn.idsi.md/vizualizare_articol/156796

Mazancová, K., Martinát, S., Pícha, K., & Navrátil, J. (2025). Perceived and "Real" Importance of Subsidies for Agricultural Enterprises in Post-Communist EU Countries. *SAGE Open*, *15*(1), 1-19. https://doi.org/10.1177/21582440251324756

Meyer, R., Zander, R., & Fritsche, H. (2011). *Subsidies as An Instrument in Agriculture Finance: A Review*. Joint Discussion Paper. World Bank, BMZ, FAO, GIZ, IFAD, and UNCDF. https://www.researchgate.net/publication/235942005_Subsidies_as_An_Instrument_in_Agriculture_Finance_A_Review

Minviel, J., & De Witte, K. (2017). The influence of public subsidies on farm technical efficiency: A robust conditional nonparametric approach. *European Journal of Operational Research*, *259*(3), 1112-1120. https://doi.org/10.1016/j.ejor.2016.11.014

Möllers, J., Herzfeld, T., Arapi-Gjini, A. & Batereanu, L. (2022). *An analysis of farm support measures in the Republic of Moldova*. Discussion Paper 199. Halle (Saale), Germany: IAMO. https://www.iamo.de/fileadmin/documents/dp199.pdf

Parliament of the Republic of Moldova. (2017). Law on the principles of subsidies in the development of agriculture and rural environment: no. 276 from 16.12.2016. *Official Gazette of the Republic of Moldova*, 67-71, art. 93. https://www.legis.md/cautare/getResults?doc_id=125183&lang=ro

Parliament of the Republic of Moldova. (2023). Law on the subsidies in agriculture and rural areas: no. 71 from 31.03.2023. *Official Gazette of the Republic of Moldova,* 134-137, art. 209. https://www.legis.md/cautare/getResults?doc_id=136602&lang=ro

Sha, Z., Ren, D., Li, C., & Wang, Z. (2024). Agricultural subsidies on common prosperity: Evidence from the Chinese social survey. *International Review of Economics & Finance*, *91*, 1-18. https://doi.org/10.1016/j.iref.2023.12.006

Shik, O., Stratan, A., Ignat, A., & Lucasenco, E. (2016, November 24). Evaluation of agricultural support in the Republic of Moldova. In: *Agrarian economy and rural development - realities and perspectives for Romania* (7th Edition, pp. 30-36). Bucharest, Romania. https://rses.ince.md/handle/123456789/291

Stratan, A., Lucasenco, E., & Ceban, A. (2018). Estimating the support for the agricultural sector in the Republic of Moldova. *Agricultural Economics and Rural Development*, *15*(1), 83-91. https://ibn.idsi.md/ro/vizualizare_articol/213076

Tang, X., Wang, J., Zhang, B., & Zhang, L. (2017) Application of the DEA on the performance evaluation of the agricultural support policy in China. *Agricultural Economics*, *63*(11), 510-523. https://doi.org/10.17221/120/2016-AGRICECON

Yang, Q., Zhang, P., Li, Y., Ning, J., & Chu, N. (2023). Does the Policy of Decoupled Subsidies Improve the Agricultural Economic Resilience? – Evidence from China's Main Corn Producing Regions. *Sustainability*, *15*(13), 10164. https://doi.org/10.3390/su151310164

Annex 1. Survey

Background data

Data about the economic agent	
Type of agricultural producer micro/small/medium/large	
Type of farm LLC, JSC, peasant farm, individual enterprise, etc.	
Administrator woman / man	
Administrator's age	
Type of employment of the founder (main / additional occupation)	
Membership of an association, YES / NO	
Certificate of Quality Holder (HACCP / Global Gap / ISO22000 / GMP)	
Measure	*Reply*
2017	
Measure(s) (for example measure 1)	
Sub-measure(s) (for example sub-measure 1.2)	
Operation (for example sub–measure 1.2.S)	
Investment object	
2018 (is only filled in, if beneficiaries from 2017 also received some subsidies in 2018)	
Measure(s) (for example measure 1)	
Sub-measure(s) (for example sub-measure 1.2)	
Operation (for example sub–measure 1.2.S)	
Investment object	
Use of the insurance mechanism: Yes / No	
- If Yes, which investment object / products are insured?	
Use promotional instruments: Yes / No	
- If yes, how big a share of investments is dedicated to promotion activities, %	
- Which types of promotional instruments are being used	

Indicators	2017 – The year of the investment	2019 – Two years after the investment	Comments, if relevant
Total operated / utilized land, number of hectares			
Land in ownership, ha			
Leased/rented land, number of hectares			
Land related to the investment, ha			
Agricultural machinery, equipment, units			
Animals, number of livestock units			
Equipment of livestock farms, units			
Post harvest infrastructure: area, m2, tons, no. of equipment, etc.			

Indicator	*Reply*
Total investment costs, MDL (2017 - 2018)	
Own sources, MDL	
2017	
2018	
Total	
Bank credits	
2017	
2018	
Total	
Grants	
2017	
2018	
Total	
Amount of received subsidy, MDL	
2017	
2018	
Total	
Degree in which there is respected the implementation of proposed deadlines from the business plan, % (Fully respected = 100%, Not respected at all = 0%	

Output data

Output data refer to the operational delivery of the investment such as a tractor, a new irrigation system, increased warehouse and cooling facilities etc. The data relates to the individual beneficiary and can only be aggregated to the extent that the same indicators are used, for example m2 green houses, m2 irrigation capacity etc.

Indicator and measurement unit	*Capacity indicator (select from column 1)*	*Before investment*	*2017 – Immediately after investment*	*2019 – 2 years after investment*	*Comments, added by interviewer, if relevant*
Capacity of production, numbers (ha of land, number and m2 of tunnels and greenhouses etc., number of animals, post-harvest infrastructure such as storage and cooling facilities, irrigation infrastructure m2 covered)	For example: number of green houses, and m2 of green houses	For example: 3 green houses, of a total of 90 m2	For example: 5 green houses, of a total of 200 m2		For example: 2 new green houses and 3 renovated.
Productivity of production, yield (tons/ha; kg/m2; liter wine/kg produce; liter milk/animal, kg. meat/animal	For example: Kg of product/ m2 green house	For example: 3 kg of table grapes/m2	For example: 3.5 kg of table grapes/m2		
Diversity of production		For example: basic product apples / grapes		Juice / jams / dry fruits	
Export		Poland, Romania		Poland, Romania, Czechia, etc.	

Result and impact data

Results and impacts relate to the effects of using the output delivered with the investment, such as using the tractor, benefitting from using the irrigation system and the post–harvest facilities in terms of increased employment, increased turnover and gross value added. The data can be aggregated at sector level, since the indicators are common and horizontal covering all measures.

Indicator and measurement unit	*Registration from the year prior to the investment*	*2017 –Immediately after investment*	*2019 – 2 years after investment*
Turnover (value of produced output sold on the market), MDL *(code 010 from balance sheet)*			
Gross Value Added (turnover minus intermediate costs for input to the specific production, such as fertilizers, pesticides, animal feeds, petrol, rented machinery services etc. If you have no fixed costs, NVA is equal to GVA) MDL *(code 110 minus sum of codes 060,070,080,090,110 from the balance sheet)*			
Net Value added (GVA minus fixed costs to payments for houses and machinery not linked to any specific production) MDL (*GVA minus code 100 from balance sheet / or code 140 from balance sheet)*			
Income (value of earnings of the farm or beneficiary is defined as Value of output minus Intermediate costs minus fixed costs plus subsidies) MDL			
Jobs, permanent, maintained, men (Full time job = 1960 working hours per year)			
Jobs, permanent, maintained, women(Full time job = 1960 working hours per year)			
Jobs, seasonal maintained, men (Half time job = 980 working hours per year)			
Jobs, seasonal maintained, women (Half time job = 980 working hours per year)			
Jobs, new, men (Full time job = 1960 working hours per year)			
Jobs, new, women (Full time job = 1960 working hours per year)			
Jobs, new seasonal, men (Half time job = 980 working hours per year)			
Jobs, new seasonal, women (Half time job = 980 working hours per year)			

Authors' contributions·

- Conceptualization: Dmitry ZVYAGINTSEV, Eugenia LUCAȘENCO
- Methodology: Dmitry ZVYAGINTSEV, Eugenia LUCAȘENCO
- Formal analysis: Alexandru CEBAN
- Investigation: Dmitry ZVYAGINTSEV, Eugenia LUCAȘENCO
- Writing – original draft: Dmitry ZVYAGINTSEV, Eugenia LUCAȘENCO, Alexandru CEBAN
- Writing – review & editing: Dmitry ZVYAGINTSEV, Eugenia LUCAȘENCO, Alexandru CEBAN
- Supervision: Eugenia LUCAȘENCO