

MARKET STUDY ON AVAILABILITY OF PRODUCTS PRIORITIZED FOR SUSTAINABLE PUBLIC PROCUREMENT IN THE REPUBLIC OF MOLDOVA

Action implemented by:

Disclaimer

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Table of Abbreviation

CA	Contracting authority
CE	Conformité Européenne
CO ₂	Carbon dioxide
EMAS	Eco-Management and Audit Scheme
EO	Economical operator
EU	European Union
FAO	Food and Agriculture Organization
FSC	Forest Stewardship Council
GHG	Greenhouse gas
ISO	International Organization for Standardization
IT	Information Technology
LCA	Life Cycle Assessment
LCC	Life cycle cost
MOLDAC	National Accreditation Center of the Republic of Moldova
OECD	Organisation for Economic Cooperation and Development
PC	Personal computer
PVC	Polyvinyl chloride
SME	Small and medium-sized enterprise
SPP	Sustainable Public Procurement
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
USD	United States dollar
WHO	World Health Organization

1. Introduction

1.1. Project background

In June 2016, the Republic of Moldova ratified the Public Procurement Agreement of the World Trade Organization, and this, together with the Moldova - European Union Association Agreement, previously signed in 2014. These agreements require Moldova to take all measures for the liberalization of trade and the development of the public procurement system in accordance with international best practices.

Since 2015, the national normative framework and practices in the area of public procurement have evolved considerably. Sustainable public procurement principles such as transparency, competition, non-discrimination were introduced to lead to the state budget and planning savings. The Republic of Moldova, aims at applying general principles for public procurement considering environmental and social factors.

With the support of UNEP in 2020, the "Report on the progress of the implementation of sustainable public procurement in the Republic of Moldova in the years 2017 – 2020" was produced. One of the recommendations presented in this report was the prioritization of sustainability considerations in public procurement by identifying mandatory sustainability requirements.

Previously, in 2015 with the support of UNEP, two product groups were prioritized, for which Sustainable Public Procurement (SPP) technical specifications were developed: fresh vegetables and fruits and energy-efficient double-glazed windows and doors¹.

Within the framework of the project of the "European Union for Environment Action" (EU4Environment), under the guidance of UNEP, the prioritization exercise was developed, following which 3 priority products were established, for which technical specifications were developed with Sustainable Public Procurement (SPP) criteria and which will be proposed later for the implementation of pilot procurement procedures in Republic of Moldova: personal computers, motor vehicles and print paper.

One of the key steps of the SPP Approach is to undertake a market analysis, which was carried out for the 5 prioritized products: fresh vegetables and fruits, energy-efficient double-glazed windows and doors, personal computers, motor vehicles and print paper.

As part of the prioritization process, it is essential to clarify what the market is prepared to offer, at what price and for what sustainability criteria.

The market readiness analysis aims to complement the prioritization exercise and refers to the list of products selected as a result of the initial prioritization process.

The market readiness analysis will lead to the final validation of a list of products to be entered into the public procurement system together with an appropriate set of sustainability criteria.

1.2. Objectives of the study

UNEP recommends the following approach for the readiness study: supply analysis and demand analysis.

¹https://www.oneplanetnetwork.org/sites/default/files/market_readiness_analysis_of_the_public_procurement_system_in_the_republic_of_moldova.pdf

The purpose of the supply analysis will be to assess the capabilities of the local market to supply the selected products at a competitive price and to analyze potential threats or opportunities to the local economy.

The purpose of the demand analysis here will be to analyze the national procurement demand for the selected products.

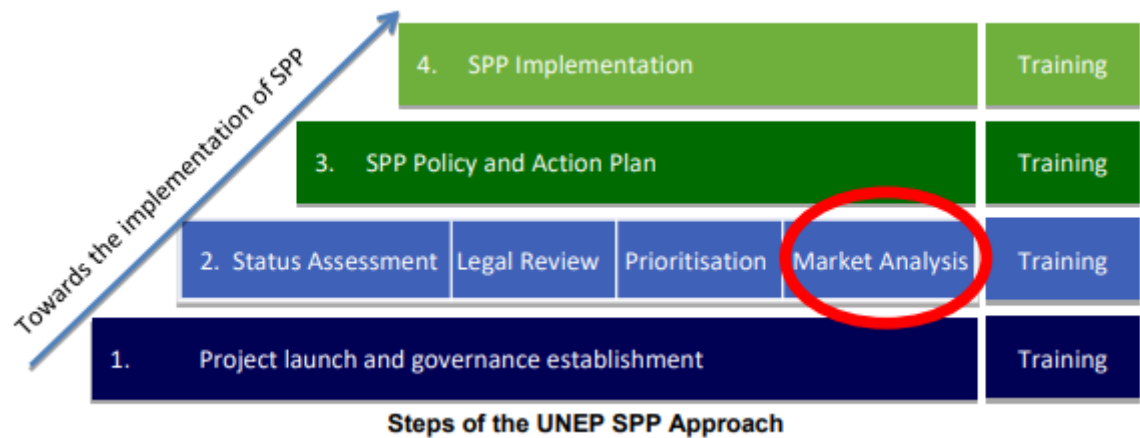
The analysis of the supply and demand conditions, for the prioritized products, should allow conclusions to be made regarding the opportunity and feasibility of prioritizing the selected product groups for the implementation of the SPP.

The market readiness analysis should help to define, for each of the priority products, a set of feasible sustainability criteria together with possible means of verification.

1.3. Methodology

UNEP provides support to countries to develop and implement SPP policies by raising awareness and building the capacities of decision makers and public procurement managers.

The methodology applied at the country level is the "UNEP SPP Approach" which is designed as a series of steps to be followed by governments to design and then implement an SPP action plan.



The recommended steps from the "UNEP SPP Approach²" were followed in the present Market Analysis.

² <https://wedocs.unep.org/bitstream/handle/20.500.11822/35415/MAE.pdf>

2.Categories of sustainable products and services for the sustainable public procurement pilot tenders

2.1. Selected sustainable product categories

During the prioritization exercise, the UNEP approach was applied³.

After reviewing the most purchased products in the Republic of Moldova, alternative products on the market, as well as following studies of different impacts (on the environment, on social and economic areas), and the calculation of the score, the final ranking of the products has been established.

According to the prioritization results, the 3 priority products are cars, office paper and computers.

As previously mentioned, 2 other groups of priority products determined in 2015 are fresh vegetables and fruits and energy-efficient double-glazed windows and doors.

These 5 prioritized product groups were analyzed in present Market Analysis.

2.2. Sustainability criteria for the selected product categories

a) Cars

For cars, the sustainability criteria will focus primarily on the impact they exert on the environment:

- Greenhouse gas (GHG) and air pollutant emissions produced by energy consumption during the use phase.
- GHG and air pollutant emissions produced along the supply chain of the energy carriers.
- Environmental impacts produced during the manufacture of batteries for electric vehicles.
- Noise emissions produced by the vehicle and tires during the use phase.

Respectively, the basic SPP criteria will be the following:

- CO₂ emissions and energy efficiency.
- Atmospheric pollutants emissions.
- Energy consumption displays. The vehicles must be equipped with a mechanism showing the fuel consumption level to the vehicle driver.
- Information about traffic and route optimization. The vehicles must be equipped with the systems informing about the traffic and optimizing the route, thus providing the vehicle driver with the services for information supply before going on the route, in order to help the driver to avoid the traffic and to take decisions on route optimization. This system must be an integrated system, i.e. it must be an integral communication module, which is composed of a modem and a subscriber identification module (SIM), which is permanently integrated into the motor vehicle.
- Minimum battery warranty (for hybrid or electric motor vehicles).

³ [JPE.pdf \(unep.org\)](#)

b) Office paper

For office paper, the most important SPP criteria are determined by the raw material source from which it is produced and the manufacturing method used.

Both topics are solved by using eco-certifications, which establish that the cellulose from which the paper is produced comes from renewable sources or from responsibly managed forests, and methods with low environmental impact were used in the production of the paper, in particular chlorine was not used for bleaching this one.

c) Computers

For computers, the SPP criteria focus on the most significant environmental impacts during their life cycle, and have been divided into four distinct categories:

- Extending the life of the product.
- Energy consumption.
- Dangerous substances.
- End of life management.

As a result of Life Cycle Assessment (LCA) evidence the criteria pay specific attention to extending a product's lifetime through improved durability, upgradeability and reparability.

Extracting and recovering larger plastic parts, metals and critical raw materials at the end of their life can also increase the EU's resource efficiency and reduce the impact of making new IT (Information Technology) products.

d) Fresh vegetables and fruits

For the organic fresh vegetables and fruits category, the most important sustainability criterion identified was that production methods must not include the use of pesticides or chemical fertilizers.

According to the FAO/WHO Codex Alimentarius, organic agriculture is "holistic production management system that avoids use of synthetic fertilizers and pesticides, minimizes pollution of air, soil and water, and optimizes the health and productivity of independent communities of life, plants, animals and people"⁴. In the Republic of Moldova, to be officially labeled as organic, fruits and vegetables must comply with the criteria established by the **ecological label "Agricultura Ecologică - Moldova"**⁵, launched by the Government in December 2010. These criteria include the elimination of any environmental pollution techniques, maintaining the natural level of soil fertility, the exclusive use of organic fertilizers and the avoidance of genetically modified organisms and synthetic chemical additives or other similar substances.

⁴ <https://www.fao.org/3/y4587e/y4587e.pdf>

⁵ <https://www.madrm.gov.md/ro/content/agricultura-ecologic%C4%83>

e) Energy-efficient double-glazed windows and doors

For the category of energy efficient doors and windows, the sustainability criteria will focus on reducing energy waste from artificial lighting (caused by poor natural lighting), heat loss (caused by infiltration and thermal attributes of windows) and similar issues. The thermal resistance of windows and doors highly depends on the material used and the quality of the frame, coatings, the number of glazing sheets and the distance between the glass sheets and the filling composed of inert gas. The following technologies have been identified that are specific to energy efficient windows:

- Insulated glazing units consisting of two or more glass sheets that reduce heat transfer. The internal space between the panes is sealed and may be filled with inert gas, such as argon or krypton, which, in turn, reduce heat transfer thanks to their low thermal conductivity.
- Low-E coatings applied to the glass sheets to reduce heat loss through thermal radiation inside the building in wintertime. There are also coatings that can reduce the penetration of infrared radiation in summer, thus reducing the temperature inside, and air cooling measures in summer time.
- Frames and sashes with high thermal resistance. Currently, the most common materials are plastic profiles with multiple hollow chambers.
- Gaskets allowing for proper window sealing. Mechanisms that allow for different opening possibilities with different opening levels/directions.

In general, when purchasing windows, it is important to take into account all characteristics relating to the window profile, installation, soundproofing qualities, tightening technologies and number of hollow chambers.

The impact on the environment generated by Polyvinyl chloride (PVC) carpentry is determined by:

- High thermal and acoustic protection.
- The lifespan can reach 50 years.
- The PVC profile is fire resistant, it self-extinguishes from the beginning of a fire.
- Windows made of virgin PVC can be recycled and reused.

2.3. Tools and methods of verification

The certificate of conformity is an important tool for checking the quality of most goods.

The certificate of conformity is a document that certifies that an appropriately identified product has been subjected to conformity assessment procedures and that, at the time of assessment, the product conforms to the applicable specified requirements

Certificates of conformity or test reports issued by foreign conformity assessment bodies are recognized, based on bilateral agreements on mutual recognition of conformity assessment activities. The recognition of conformity certificates is carried out by issuing a new certificate of conformity by the certification bodies accredited by the National Accreditation Center.

Certificates of conformity are issued by accredited conformity assessment bodies. The accreditation activity is carried out by the National Accreditation Center, designated as the unique national accreditation body, with the abbreviated name "MOLDAC"⁶⁷.



The CE mark⁸ of conformity (*conformité européenne*) is a mark that certifies the conformity of the product with the applicable safety requirements. To indicate whether a product complies with national legislation that is harmonized with Community directives, a conformity mark is used - the CE mark. Products bearing this mark meet requirements that provide a high level of protection of public interests such as health and safety in general, health and safety at work, consumer protection, environmental protection and security, while guaranteeing that the free movement of products is not restricted to a greater extent than permitted by Community harmonization legislation or national law.

Eco-label

Ecolabelling is, according to ISO 14020, a set of voluntary tools with the aim of stimulating the demand for products and services with environmental effects by providing essential information about their life cycle to satisfy the buyer's demand for environmental information. The ecological label - is a graphic symbol applied to the product, packaging, in a brochure or other informative document that accompanies the product/service and which provides the necessary information regarding the criteria for awarding the ecological label to products and services on the market.

The eco-label is awarded to a wide range of product groups⁹.



The European Ecolabel is a voluntary system, established in 1992 to encourage businesses to produce or buy products and services that are environmentally friendly. The products and services that have received the ecological label bear the well-known logo of the European flower to allow consumers - including public and private purchases - to easily identify ecological products.



The Republic of Moldova has its own ecological labeling system, in accordance with EU requirements. The eco-label symbol has been registered at the State Agency for Intellectual Property. Thus, products and services conforming to the primary environmental criteria will be easier to identify, facilitating the application of best practices for the protection of the environment and public health, as well as the recycling of products. The Government of the Republic of Moldova approved Decision no. 204/2023 for the approval of the Regulation on ecological labeling, a document that will enter into force in April 2024¹⁰.

Thus, in public procurement procedures, the tenderer must provide reference standards that show that the products are ecological: internal eco-certification or any other eco-certification recognized by the Republic of Moldova.

⁶ [LP235/2011 \(legis.md\)](https://legis.md/LP235/2011)

⁷ <https://acreditare.md/registre/>

⁸ https://europa.eu/youreurope/business/product-requirements/labels-markings/ce-marking/index_ro.htm

⁹ https://environment.ec.europa.eu/topics/circular-economy/eu-ecolabel-home/product-groups-and-criteria_en

¹⁰ https://www.legis.md/cautare/getResults?doc_id=136729&lang=ro

a) Cars

All types of cars in the Republic of Moldova are imported. To verify compliance with the SPP criteria established for cars, the tenderer must provide the vehicle's certificate of conformity and the vehicle's technical sheet that includes this information.

At least to meet the maximum level of pollution cars must meet **Euro 6 emission Standard**¹¹.

For minimum battery warranty (for hybrid or electrical motor vehicles) the tenderers must present a declaration with the warranty terms.

b) Office paper

The Republic of Moldova does not have its own office paper production. All products carrying any type I ecolabel, such as the EU Ecolabel can serve as means of proof if it is specified that the paper is made from 100% recovered paper fibres, or the virgin fibre for pulp production shall come from legal sources, and the paper is Chlorine Free. Any other appropriate means of proof, such as a technical dossier of the manufacturer or a test report from a recognised body will also be accepted.

Paper reference standards that can serve as means of proof: **FSC (Forest Stewardship Council®)**¹², **Blue Angel label**, **European Ecolabel**, **Nordic Swan label**, or any other equivalent standard.



c) Computers

To verify compliance with the SPP criteria established for computers, the tenderer must provide:

- A written declaration that the products supplied will be warranted in conformity with the contract specifications and the related service level agreement.
- A declaration that the requested spare parts will be available for X years.
- A statement that the applicable parts are replaceable by the end-user and/or a technician.
- The service/repair manual with instructions on how to replace the parts through a direct link to the document on the manufacturer's website.
- The valid Energy Label.

¹¹ <https://eur-lex.europa.eu/RO/legal-content/summary/emissions-from-heavy-duty-vehicles-euro-vi-certification-rules.html>

¹² <https://fsc.org/en>

- The computer's certificate of conformity.



The reference standards for PC energy-efficiency is **Energy Star** or equivalent certification.

For End-of-life management the tenderer must provide the registration number in the "List of Producers of Electrical and Electrical Household Waste" kept by the Environmental Agency via the information subsystem, which is integrated into the Automated Information System "Waste Management".¹³

d) Fresh vegetables and fruits

For fresh vegetables and fruits in addition to common qualification and selection criteria the tenderer must provide reference standards showing that the products are organic: domestic eco-certification or any other eco-certification acknowledged by the Republic of Moldova.

According to the provisions stipulated in Law no. 115-XVI of June 9, 2005¹⁴, the national mark "Ecological Agriculture - Republic of Moldova" is applied to organic food products, which have been subjected to the inspection and certification procedure.



The national mark "**Ecological Agriculture - Republic of Moldova**" is an official sign, which confirms that the production process is controlled by inspection and certification bodies and guarantees that the product is obtained according to the requirements and principles of ecological agriculture¹⁵.

When labeling ecological agro-food products, depending on the origin of the raw material, an indication of the place where the agricultural raw material that makes up the product was grown will be placed in the same visual field as the national brand, in one of the following forms:

- "Ecological Agriculture - Republic of Moldova" if the agricultural raw material was cultivated in the Republic of Moldova.
- "Ecological Agriculture - non Republic of Moldova", if the agricultural raw material was not cultivated in the Republic of Moldova.
- "Ecological Agriculture - Republic of Moldova / another country", if part of the agricultural raw material was grown on the territory of the Republic of Moldova, and another part - in other countries.
- "Ecological Agriculture - EU", when the agricultural raw material was cultivated in the European Union."

¹³ <https://siamd.gov.md/portal/deee.html>

¹⁴ https://www.legis.md/cautare/getResults?doc_id=132886&lang=ro#

¹⁵ [HG884/2014 \(legis.md\)](https://www.legis.md/cautare/getResults?doc_id=132886&lang=ro#)

The National Accreditation Center of the Republic of Moldova (MOLDAC) is the institution in charge of accrediting the conformity assessment bodies. It does so by issuing the National Accreditation Mark, a legally protected standard. Upon accreditation, MOLDAC transfers the right to use the accreditation symbol to the conformity assessment bodies¹⁶.

The Ministry of Agriculture and Food Industry periodically places on the Ministry's website the list of economic agents, products and the type of activity for which the use of the national trademark "Ecological Agriculture - Republic of Moldova" has been approved¹⁷.

The right to use the national trademark "Ecological Agriculture - Republic of Moldova" for products, labels and packaging of ecological agri-food products belongs to the economic agents that produce, process, import, export and/or sell organic agri-food products, registered by the competent authority.

The inspection and certification of ecological agri-food production is carried out by the inspection and certification bodies authorized by the competent authority based on the accreditation granted by the accreditation body.

At the same time, fresh fruits and vegetables must meet the minimum quality requirements set out in Government Decision No. 929/2009 regarding the approval of "Quality and marketing requirements for fresh fruits and vegetables"¹⁸.

e) **Energy-efficient double-glazed windows and doors**

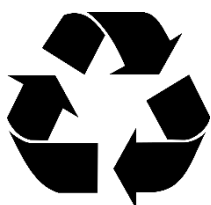
In addition to common criteria for procurement of energy-efficient double-glazed windows and doors criteria the tenderer must provide reference standards like:

- Carpentry reference standards: Green Line or equivalent certification.
- Management system certification according to EN ISO 14001/EMAS¹⁹²⁰ standard or an equivalent standard.
- Quality management system certification for carpentry production, according to ISO 9001 Standard²¹.

In Moldova, inspection and certification bodies for PVC windows and doors are accredited by the National Accreditation Center and approved by the Ministry of Infrastructure and Regional Development.

The PVC profiles are imported to be then assembled in Moldova. They are already certified by foreign/international certification bodies, but according to a Government Decision on the approval of the technical regulation of construction products, these profiles, as well as glass and windows, are subject to mandatory certification in Moldova as well.

For windows and doors in the Republic of Moldova, the following ecolabels are used:



Ecolabel regarding the recycling of PVC profiles – the presence of this ecolabel on PVC profiles is recommended, but shall be compulsory if the contracting authority (CA) includes this as a requirement within public procurement procedures of purchasing

¹⁶ https://acreditare.md/register_category/organisme-de-certificare-a-produselor-ecologice/

¹⁷ <https://maia.gov.md/ro/content/operatorii-certifica%C5%A3i-%C3%AEn-agricultura-ecologica-0>

¹⁸ [HG929/2009 \(legis.md\)](https://legis.md/HG929/2009)

¹⁹ <https://op.europa.eu/en/publication-detail/-/publication/cca83b1c-5b40-4dc5-b186-62fd0b9c620c>

²⁰ https://www.emas.de/fileadmin/user_upload/4-pub/UGA_Infosheet_From-ISO-14001-to-EMAS.pdf

²¹ <https://www.iso.org/iso-9001-quality-management.html>

doors and windows which are energetically eco/efficient. It confirms that the PVC profiles used in assembling doors and windows can be recycled after disposal.



Ecolabels for PVC profiles which are produced with a chemical stabilizer based on Calcium – Zinc formula as standard for plastic profiles. Lead is eliminated throughout the whole production process. The green line profiles are not good only from organic point of view. They are also more resistant against the effects of external factors. During the procedures of public procurement of sustainable

doors and windows, they must be assembled from PVC profiles which do not contain lead.



European Conformity Marking (EC Marking) represents a declaration of the producer that the product is conform and complies with all the applicable directives in the field of windows and doors.

3. Analysis of supply of the selected product categories at the market

3.1. Availability of the selected products

a) Cars

The market readiness for cars focused on determining the availability of those cars that correspond to the main SPP criteria, such as the level of air pollution, CO₂ emission and their energy efficiency.

A primary examination of the market showed that there is a wide variety of types of cars available on the market of the Republic of Moldova that meet these criteria:

- Cars with Hybrid engine.
- Cars with Plug-in hybrid engine.
- Cars with electric motor.

At the same time, most new imported cars correspond to the maximum pollution level of the Euro 6 emission standard.

Practically there are sustainable alternatives to the traditional ones, both on the primary and on the secondary car market.

It should be noted that cars that meet the SPP criteria are usually 15-30% more expensive than conventional ones.

b) Office paper

The Republic of Moldova does not have its own paper production, so all office paper is imported. Regarding the offer of office paper, we can also note that there is a vast sustainable alternative. Thus, the market offers office paper that has a wide range of eco-labels, which is practically the basic SPP criterion.

At the same time, an important aspect is the fact that office paper that meets the SPP criteria is 2-10% more expensive than conventional paper.

c) Computers

Similarly, in the case of computers, the Republic of Moldova does not have its own production in this regard. At the same time, there is still the phenomenon of assembling computers from various imported components by different small local EOs, which reduces their cost, but does not provide the necessary performance from a sustainable point of view.

However, CAs have gradually moved away from the practice of purchasing such computers assembled from component parts on the local market, by requesting computers that are produced by a brand name. Thus, the market offers a fairly wide range of brand name computers, which can meet a number of SPP criteria such as energy efficiency certification and the absence of hazardous substances certified by CE certification.

Such requirements as the extended warranty period, the possession of authorized service centers in order to ensure the upgradeability and repairability of computers are also requested. Another mandatory requirement submitted to EO is their inclusion in the "List of Producers of Electrical and Electrical Household Waste" kept by the Environmental Agency via the information subsystem, which is integrated into the Automated Information System "Waste Management" in order to ensure recycling computers at the end of their lives.

At the same time, the problems related to the logistics of computers and spare parts for them persist, which appeared especially starting in 2020 in connection with the COVID 19 pandemic, and which are usually manifested by a longer delivery term, but this does not affect the requirements of the SPP criteria.

As a rule, computers that meet the SPP criteria are on average 30% more expensive than conventional computers.

d) Fresh vegetables and fruits

Aiming to answer the question, to what extent the market is ready to provide organic fruit and vegetables, we have, first of all, to find out what is the number of local certified economic operators that produce or sell such products, and what is the available volume of organic products.

We should mention from the very beginning that the economic operators that take part in public procurement procedures for conventional foodstuffs, do not produce and supply organic products. This essentially means that organic producers are on the market, but they do not participate in public procurement.

The estimated quantities that can be provided by an local eco-producer per year, are the following:

- Organic potatoes – 2,500 to 4,000 kg.
- Organic carrots – 200 to 3,000 kg.
- Organic cabbage – 50 to 1,500 kg.
- Organic beetroot – 70 to 2,000 kg.
- Organic apples – no data available.

The maximum quantity provided by an eco-producer depends on the method of organic products growing-up – permaculture that limits the possibilities of agriculturiers.

Respectively, if we compare the quantities of organic vegetables provided now by local producers and the quantities of vegetables that are yearly purchased by the contracting authorities, we will see that the supply does not comply with the demand even to the smallest extent.

Another aspect is the difference of price for organic and conventional agricultural products (see Table 3.1.).

Table 3.1.: Difference of price for organic and conventional agriculture products (average price for 2022).

Product	Price per kg of organic product (MDL)	Price per kg of conventional product (MDL)*	Price difference (%)
Potatoes	25-30	8.58	290-350%
Cabbage	15-20	11.37	132-175%
Carrots	25-27	10.09	247-268%

Product	Price per kg of organic product (MDL)	Price per kg of conventional product (MDL)*	Price difference (%)
Beetroot	15-25	9.96	150-250%

* 2022 average prices.

We realise from the above Table 3.1. that the price difference is very high. The producers of organic products mention that they are ready to lower the procurement prices by 20-30% if the purchased quantity is big. However, the price difference will be considerable even in such a case.

e) Energy-efficient double-glazed windows and doors

Studying the market, it was determined that EOs suggest products on the market that meet sustainability criteria such as:

- PVC-profile with five sections as a minimum.
- Glass unit with two sections (three glass layers).
- Low-e glass.
- Space between the glasses – filled in with inert gas.

All such criteria are aimed to reduce the heat losses over the winter time and to avoid the overheating over the summer time through the windows. Respectively, installation of such windows shall entail the reduction of expenses for heating services over the winter time and the reduction of electrical power consumption by the air conditioning units, which implies positive consequences for nature such as mitigating climate change and reducing energy consumption.

As for the prices of energy-efficient windows and doors, it should be noted that their price is composed of several elements, and one of them is the size of the windows, that is, the price of the windows depends on their size, and as I mentioned above, the sizes are not standard, but are individual for each separate project. Thus, the price difference for conventional windows and energy efficient windows would be approximately 30% (energy efficient products are more expensive than the conventional ones).

The general conclusion is:

1. The economic operators that usually participate at public procurement procedures, may provide energy-efficient double-glazed windows and doors, without any limitations.
2. The difference of prices for common windows and energy-efficient windows makes about 30%.

3.2. Market players

a) Cars

In the case of car procurement, at least 54 EOs were determined to be participants in public procurement procedures in the last 3 years, with the average offer being 1.1 bidders per procedure.

All cars traded in the Republic of Moldova are imported, and EOs are mostly prepared to present offers that meet the SPP criteria.

b) Office paper

The number of participants in public procurement procedures for office paper in the last 3 years amounted to 79 EOs, the average offer being 2.3 bidders per procedure.

The office paper is imported, there is no such production locally. But EOs on the local market import production that mostly has the necessary eco-certification to meet the SPP criteria.

c) Computers

The number of participants in computer public procurement procedures in the last 3 years constituted 86 EOs, the average offer being 2.1 bidders per procedure.

Computers are a category of products that comes entirely from import, respectively there is no such production locally. However, the EOs on the market are mostly ready to submit to public procurement procedures computers that meet the SPP criteria.

d) Fresh vegetables and fruits

The only local certification currently active, which the Republic of Moldova has, is eco-certification of agricultural products. The Ministry of Agriculture and Food Industry of the Republic of Moldova records the local agricultural producers/sellers that are certified in the eco-agriculture²²²³: 152 producers/sellers of various organic agricultural products are certified, 15 of which are producers of organic vegetables.

Availability of agricultural eco-producers/sellers that are certified for the studied products are presented as follows:

- Organic potatoes – 6 producers.
- Organic carrots – 6 producers.
- Organic cabbage – no producers.
- Organic beetroot – 6 producers.
- Organic apples – no producers.

Meanwhile, number of certified producers has been growing, since there are producers that are undergoing the conversion period (i.e. the second or third year) now, hence, they can already provide organic products, and they will get the eco-certification a year later.

e) Energy-efficient double-glazed windows and doors

The specificity of the local market for PVC windows and doors consists in the fact that all the raw material for the window parts are imported, with the exception of the window glass, to then be assembled in

²² <https://experience.arcgis.com/experience/7e03ba31480b4e8b985d8f75fd2145e1>

²³ <https://madrm.gov.md/ro/content/operatorii-certifica%C5%A3i-%C3%AE-agricultura-ecologica>

Moldova. Local EOs assemble PVC doors and windows on site according to the dimensions and needs specified by the customers.

It is necessary to mention that PVC windows and doors are very rarely procured separately as products, in most cases they are procured as a component part of the work of changing/ installation PVC windows and doors, they appear as construction materials in the work estimate.

The number of participants in public procurement procedures for the replacement/installation of PVC windows and doors in the last 3 years constituted 56 EOs, the average offer being 5.85 bidders per procedure.

Over the years it has been observed that, in the case of public procurement procedures for the replacement/installation of PVC windows and doors, the number of bidders has always been considerable. So the competition in this field is quite high, and the EOs that participate in the public procurement procedures are prepared to respond with adequate offers to the SPP requirements formulated by the CAs.

Moreover, the part of producers asserted that they follow ISO14001 Ecomanagement Standard, thus allowing the organisations to minimise their impact on the environment.

3.3. Obstacles limiting the supply of the selected products

The main obstacle that could prevent public procurement of selected products with SSP criteria is **the price difference** between sustainable and conventional products.

Thus, **organic vegetables and fruits** are currently sold at prices 2-3 times higher than conventional ones, which for contracting authorities could represent the major impediment in the case of SPP purchases. There are CAs that procure considerable quantities of vegetables and fruits to feed certain categories of beneficiaries, such as children in educational institutions, patients in hospitals, soldiers, prisoners, beneficiaries in asylums and placement centers, etc. Respectively, these institutions could be in situations of impossibility to ensure the budget increase by 200-300% for certain categories of food products. And this is a major risk.

A similar situation can occur in the case of the purchase of **cars, computers or energy-efficient windows and doors** with SPP criteria. But these products are about 30% more expensive than conventional ones, and in addition to the benefits reflected on the environment, CAs can obtain other tangible benefits during the exploitation of these products by obtaining considerable savings in lower fuel consumption for cars, lower consumption of electricity and lower costs for heating buildings in winter. Although products with SPP criteria are more expensive than conventional ones, this decrease in operating expenses could convince CAs to procure sustainably.

For **office paper**, the price difference of 2-10% should not present an important impediment, in this case the situation is more positive.

Another major impediment to purchasing **organic fruits and vegetables** is the low supply of such products on the market. So, the number of certified OEs cultivating organic production at the moment is not large. For the year 2022, this number constituted 152 producers from the total number of over 5.4 thousand Small and medium-sized enterprises (SMEs) whose activity is agriculture, forestry and fishing. Also, the amount of organic production cultivated by an eco-certified producer is usually insufficient to ensure the needs of large CAs.

Thus, conclusion is that from the 5 groups of prioritized products, major impediments, which will require considerable efforts to overcome them, are encountered in the case of the purchase of organic vegetables and fruits, such as:

- 1) The number of economic operators that can produce/sell organic fruit and vegetables is not sufficient.
- 2) The quantity of organic agricultural products as provided currently in the market is much lower than the quantities that are purchased within public procurement procedures.
- 3) In the case of organic and conventional products, the price difference is considerable.

3.4. Threats and opportunities for the local production. The potential for development of selected products

For 3 prioritized product categories (**cars, computers and office paper**) there is no local production and in the near future it is not expected to be developed. So in the case of these 3 products there are no threats for the local production. At the same time, since these 3 categories of products come from imports, the demand for sustainable products created by CAs will further make importers revise the technical specifications for imported products towards sustainable ones, which in the end will have an overall positive impact on the market, because it will create an offer on the market of sustainable products available not only for CAs, but for the general public.

For **organic vegetables and fruits**, the situation is more complicated, because both the demand and supply for such products at the moment is generally very low. Organic vegetables and fruits currently represent a very narrow specific niche. Due to the rather high prices for this production, interest in it is shown by a narrow group of the population and restaurants.

As mentioned above, the number of producers who grow organic vegetables and fruits is quite small, as well as the volume of their production, insufficient to satisfy the needs of the contracting authorities. From this point of view there is a great potential for the development of the production of this product category. But for that, the Ministry of Agriculture and Food Industry jointly with the Ministry of the Environment will have to take a series of joint measures to stimulate the production of organic vegetables and fruits, which would lead to an increase in the number of organic agricultural producers and the amount of organic production.

Organic agriculturists invoke a planning-related challenge: if they want to cultivate larger quantities of organic vegetables, they need to know the volume to be requested by the contracting authorities, at least a year before. In other words, they want guarantees that organic products will be finally sold in full volume and they will not face financial losses. This challenge comes across the way of public procurement scheduling for the budget year, and this contradicts the requests of eco-agriculturists.

The low volume of supply could be partly solved by importing organic agricultural produce, which could lead to lower prices of local organic produce, and that would ultimately become more affordable. Because the high price of organic agricultural production is not caused by objective causes such as the specifics of the cultivation process and the high expenses during it, but by the subjective perception of producers and some buyers such as that everything with the eco prefix should be much more expensive. Accordingly, the increase in supply should normalize this phenomenon.

For **energy efficient PVC windows and doors** the situation is much more positive. Although the PVC profile and hardware are imported, the production process of the windows and doors is located locally. For the most part, manufacturers of PVC windows and doors already have raw material that meets the energy efficiency criteria for their production. Thus, the increase in demand for energy efficiency specifications will have an overall positive impact on the market in general by further stimulating the development of

the production of energy efficient PVC windows and doors available to both public authorities and the general public.

4. Analysis of national public procurement demand for selected product categories and services

a) Cars

The data concerning the purchase of cars by the contracting authorities (according to the information from the Automated Information System – MTender State Registry of Public Procurements) in 2020-2022 are presented in the Table 4.1., below.

Table 4.1. Purchase of cars by the contracting authorities in 2020-2022 in the Republic of Moldova.

Year	2020		2021		2022	
	Number of contracts	Value (MDL)	Number of contracts	Value (MDL)	Number of contracts	Value (MDL)
Cars	58	36,426,731.33	52	23,004,808.03	84	61,899,879.65

The information in the Table 4.1. presents data on public procurement procedures, announced by the contracting authorities. Additionally, there were direct contracts with low value of public procurement, but unfortunately no real data for low-value procurements are available.

It can be drawn a conclusion that even without knowing the value of the low-value contracts through which cars were procured, the amount of public procurement contracts for their purchase is a considerable one. (the value of the direct contracts in 2022 was more than 3,3 millions USD).

The spectrum of CAs procuring cars is quite broad. Practically all CAs are equipped with service cars. At the same time, there are CAs such as the General Police Inspectorate, the Customs Service, the National Food Safety Agency, etc., which have large fleets of cars. Thus, cars are a frequently procured product and the application of SPP criteria to procurement will have a major impact on the environment.

b) Office paper

The data concerning the purchase of office paper by the contracting authorities (according to the information from the Automated Information System – MTender State Registry of Public Procurements) in 2020-2022 are presented in the Table 4.2., below.

Table 4.2. Purchase of office paper by the contracting authorities in 2020-2022 in the Republic of Moldova.

Year	2020		2021		2022	
	Number of contracts	Value (MDL)	Number of contracts	Value (MDL)	Number of contracts	Value (MDL)
Office paper	52	7,052,234.96	47	10,079,403.99	94	31,022,258.60

Likewise, the information in the Table 4.2. presents data on public procurement procedures, announced by the contracting authorities, and unfortunately no real data for low-value procurements are available. But the value of the paper procured through low-value procurements is a considerable one, because mostly CAs procure it specifically through this method. Any CA procures office paper. There are CAs who, due to the specifics of their activity, procure very large quantities (such as the Public Services Agency, the General Prosecutor's Office, the Secretariat of the Parliament of the Republic of Moldova etc.).

Without knowing the value of the low-value contracts through which office paper were procured, the value of public procurement contracts for their purchase is a considerable one (the value of the direct contracts in 2022 was almost than 1,7 million USD).

c) Computers

The data concerning the purchase of computers by the contracting authorities (according to the information from the Automated Information System – MTender State Registry of Public Procurements) in 2020-2022 are presented in the Table 4.3., below.

Table 4.3. Purchase of computers by the contracting authorities in 2020-2022 in the Republic of Moldova.

Year	2020		2021		2022	
	Number of contracts	Value (MDL)	Number of contracts	Value (MDL)	Number of contracts	Value (MDL)
Computers	75	13,609,080.17	89	37,451,171.94	90	33,183,153.71

The information in the Table 4.3. presents data on public procurement procedures, announced by the contracting authorities, and unfortunately no real data for low-value procurements are available.

Absolutely all CAs are equipped with computers. And in this case, many CAs also procure computers through small-value purchases.

Without knowing the value of the low-value contracts through which computers were procured, the value of public procurement contracts for their purchase is a considerable one (the value of the direct contracts in 2022 was almost more than 1.8 million USD).

d) Fresh vegetables and fruits

Organic fruit and vegetables, which were previously prioritized group of products as those that have sustainability capacity and can be suggested for future SPP pilot tenders are:

- Potatoes.
- Cabbage.
- Carrots.
- Beetroot.
- Apples.

There were analysed the data of the public procurement procedures, which were carried on in 2020, 2021 and 2022 in the Republic of Moldova (presented in Table 4.4.).

Table 4.4. Executed public contracts of fruits and vegetables (conventional products) in 2020-2022 in the Republic of Moldova.

Conventional products	2020			2021			2022		
	Quantity (kg)	Total amount (MDL)	Average price (MDL)	Quantity (kg)	Total amount (MDL)	Average price (MDL)	Quantity (kg)	Total amount (MDL)	Average price (MDL)
Potatoes	1,485,454.60	9,372,294.44	6.17	1,075,638.00	5,378,338.77	5.49	1,689,850.00	12,727,538.75	8.58
Cabbage	354,384.90	1,977,974.02	6.48	425,023.79	2,172,980.14	6.15	401,459.00	1,114,839.20	11.37
Carrots	247,490.64	1,434,511.50	6.43	246,097.64	1,293,556.57	5.98	268,590.00	2,441,245.38	10.09
Beetroot	170,093.00	729,840.10	5.06	184,938.00	860,080.70	5.42	202,126.00	1,151,787.20	9.96
Apples	396,757.28	2,836,230.51	7.64	371,896.40	2,511,664.96	8.04	424,034.00	3,456,087.35	8.74

The information in the Table 4.4. presents data on public procurement procedures, announced by the contracting authorities. Additionally, there were direct contracts with low value of public procurement. According to the estimates, which were provided by the Court of Accounts of the Republic of Moldova in an audit report on public procurement, the the value of low-value procurements is almost the same as the the value of those public procurement, which are carried on via competitive procedure. However, no real data for low-value procurements are available.

Hence, we can draw a conclusion that the quantities of fruit and vegetables as purchased by the contracting authorities via competitive procedure and through the direct contracts are rather big (the value of the direct contracts in 2022 was almost 21 millions MDL or approx. 1,1 millions USD).

The spectrum of CAs that procure food products in general, and vegetables and fruits in particular, is quite wide, such as hospitals, schools, kindergartens, the army, different placement centers for different categories of beneficiaries, penitentiary institutions, etc. In this way demand for this product category will always exist.

f) Energy-efficient double-glazed windows and doors

The second group of products prioritized previous within the EaP GREEN project, was energy-efficient double-glazed windows and doors.

The data concerning the purchase of double-glazed windows and doors by the contracting authorities (according to the information from the Automated Information System – MTender State Registry of Public Procurements) are presented in the Table 4.5., below.

Table 4.5. Purchase of double-glazed windows and doors by the contracting authorities in 2020-2022 in the Republic of Moldova.

Year	2020		2021		2022	
	Number of contracts	Value (MDL)	Number of contracts	Value (MDL)	Number of contracts	Value (MDL)
Double-glazed windows and doors	30	7,462,074.86	31	9,979,006.72	27	7,262,924.40

It should be mentioned that in the majority of cases, the double-glazed windows and doors are purchased together with works on installation thereof, as a part of public procurement procedures for more complex works, where window and door replacement may be only a small part of works. Besides this, a part of works on window and door replacement may be purchased via low-value procurements (through direct contracts) and no real data for low-value procurements are available.

For these reasons it is very difficult to estimate the real value of public purchases of PVC windows and doors. But in 2022, at least 0,4 millions USD was spent on their purchase through competitive procedures.

PVC windows and doors are also a category of product that any CA will procure at the stage when the building in which the CA is located will be repaired, they being one of the strategic elements of the building's energy efficiency, which determines the relevance of the application of the SPP criteria in the case of purchases their.

5. Conclusions and recommendations for SPP application and practices

Determining the five prioritized product categories for applying the SPP criteria seems feasible. However, the organic fruit and vegetable sector still faces a number of problems that must first be solved in order to facilitate the expansion of the market for these products.

The environmental benefits of applying SPP criteria are generally known and it does not take much effort to convince CAs of their importance. One of the major problems of CAs in the Republic of Moldova is the fact that sustainable alternatives are often more expensive than conventional ones, and CAs are in a state of permanent insufficiency of financial sources. For this reason, an essential activity will be the training of CAs in the application of the Life Cycle Cost (LCC) approach to convince them, that next to the benefits related to the environment, the application of the SPP criteria is also an efficient one from an economic point of view, and the efficient use of public money is one of the procurement principles specified in the Law on public procurement no. 131/2015 (art. 7).

In addition to the economic challenge, as for other countries, the Republic of Moldova is characterized by challenges such as:

- Lack of special knowledge in the field of sustainable procurement.
- Inadequate training of procurement specialists.
- Low awareness of the importance of sustainable procurement.
- Low government involvement and insufficient regulation of the field.
- Lack of commitment from top managers - it is often very difficult to convince decision makers that sustainable procurement is needed.
- Sustainable procurement procedures take time and the contracting authority often has time constraints.
- Attitude of the business environment - low market demand for recyclable materials, insufficient industry integration, lack of incentives for companies to implement sustainable procurement, limited availability of sustainable products.
- The cost of sustainable products and services and the perception that sustainable products are more expensive.
- The reluctance of the actors involved in the change.

All these challenges will find their solution through the appropriate measures taken step by step according to the SPP National Action Plan.

For cars, office paper, computers and energy-efficient windows and doors, the market in general has been ready to offer sustainable solutions for some time. But the higher cost of sustainable alternatives compared to conventional ones will require the application of the LCC approach by CAs to determine the procurement of these products with SPP criteria.

In the case of organic vegetables and fruits, the situation is more delicate, because in addition to the excessively high price of organic production, the supply of the organic production volume does not coincide with the CAs demand. In this case, the government, through the Ministry of Agriculture and Food Industry and the Ministry of the Environment, will have to undertake a series of measures that will stimulate the growth of organic production and help bring prices back to an appropriate level.

Additionally, for the implementation of sustainable public procurement in the future it will be necessary to undertake measures such as:

- Running a broad campaign to promote the concept of sustainable public procurement, its importance and the benefits of applying the SPP criteria.
- Approval of some regulations regarding sustainable public procurement.
- Continuous and adequate training of representatives of the contracting authorities responsible for conducting public procurement procedures in order to correctly apply the SPP criteria, as well as EOs in order to submit appropriate offers.
- Elaboration of model technical specifications with SPP criteria for different categories of products and services and their periodic adjustment.
- Elaboration of guidelines regarding the SPP and its adjustment, especially after conducting pilot tenders for the procurement of prioritized products with the application of the SPP criteria.
- Establishing a mechanism for reporting and monitoring the SPP.
- It would be welcome, emerging from the experience of other states that have already successfully implemented SPP, to be given government support for organic production producers, their motivation by tax reduction, etc.