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Yerevan

**RESEARCH**

# **Circular Economy and SMEs in Armenia**

**Conducted by: Environment and Health NGO**

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# Acronyms

B&Bs	Bed and Breakfast
CEPA	Comprehensive and Enhanced Partnership Agreement
EBRD	European Bank for Reconstruction and Development
EMS	Environmental Management System
EoL	end-of-life
EU	European Union
GDP	Gross Domestic Products
ISC	Investment Support Center
ISO	International Organization for Standardization
NGO	Non-Governmental Organization
NCIE	National Center for Innovation and Entrepreneurship
OECD	Organization for Economic Cooperation and Development
RECP	Resource Efficiency and Clean Production
SME	Small and Medium sized Enterprises
SME DNC	SME Development National Centre of Armenia
UNIDO	United Nations Industrial Development Organization

# Introduction

The **"CIRCUL-UP! Building capacity and raising awareness to popularize Circular Economy in Armenia"** project, funded by the European Commission, aims to promote and implement circular economy principles in Armenia. The project seeks to bring about a systemic shift in the country's economy and society towards circularity. This involves strengthening civil society, reframing the entrepreneurial ecosystem, and launching media and communication campaigns to encourage consumers to adopt circular practices.

The Circular Economy has been gaining momentum in recent years, for its potential to significantly optimize resource use, reduce production and consumption related GHG emissions, while at the same time offering competitive advantage opportunities for businesses.

The European Commission has highlighted circularity as a critical feature of economic systems in the next few years and as an essential aspect to be developed by companies in order to achieve resilience and sustainability across all productive and industrial sectors. The European SME Strategy<sup>1</sup>, announced in March 2020, aims to mobilize European SMEs across various sectors to contribute to the objectives of the **European Green Deal** and the twin digital and green transition.

During the last decade, an increasing number of countries, including Armenia started developing policies and strategies to stimulate the transition towards a more resource efficient and circular economy. Overall, the principles of resource efficiency and materials circularity have started to guide national, sector specific and even local policies and strategies.

This research, conducted as part of the CIRCUL-UP! Project by the Project partner **"Environment and Health" NGO**, focuses on assessing and analyzing the current state of circularity among Armenian SMEs. It aims to identify gaps and barriers preventing SMEs from adopting circular business models. The report specifically examines **three promising sectors: food processing, tourism, and textiles**. By highlighting the economic sectors with the potential for rapid transition to circularity, the report aims to provide insights on business benefits of the circular economy for SMEs and recommendations for policymakers.

The research findings are based on a desk review of international and national publications, official documents, strategies, statistical and research data, as well as focus group discussions involving representatives from SMEs, SME associations, local governments, and non-governmental organizations involved in environmental issues.

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<sup>1</sup> Communication from the European Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. An SME Strategy for a sustainable and digital Europe. COM/2020/103

# 1. Circular economy in the SME sector in Armenia: current state, concepts, institutional and regulatory framework

## 1.1. *Circular economy concepts in Armenia*

The Government of Armenia places high importance on improving the environmental performance of its economy, which has been reflected in the Strategic Program of Perspective Development of the Republic of Armenia (2014-2025). The Program of the Government of Armenia for 2021-2026<sup>2</sup> includes number of measures to help stimulate transition towards a circular economy, boost global competitiveness, foster sustainable economic growth and generate new jobs. The action plan established concrete actions, with measures covering the whole life cycle: from production and consumption to waste management and the market for secondary raw materials and a revised legislative proposal on waste improving the country's overall resistance to environmental challenges, prioritize global environmental agenda, and align the country's maturity with international best practices and commitments. These efforts are considerable encouraged and supported by a variety of international and multilateral initiatives, such as EaP GREEN Programme (2013 – 2017), EU4Environment Programme (2019-2022), UNIDO RECP (Resource Efficiency and Clean Production) actions that support the uptake of circular economy for more resource efficient business solutions among SMEs.

Currently, the Ministry of Economy, in collaboration with the Ministry of Environment, is leading the development of the Green Economy Strategy. The document is at its draft stage and discussions between different intergovernmental committees and international organizations are still ongoing. According to the Ministry of Economy the purpose of the concept is to present the main problems and challenges of sustainable development and green economy of Armenia, which relate to the current state of the country's economic, natural and human capital, and accordingly to define the vision of green economy transition and the main goals. "Emphasizing the importance of the transition to a green economy in Armenia, the green agenda should be formed as smoothly as possible and be the basis of new opportunities and growth for businesses" - as noted by the Deputy Minister of Economy Ani Ispiryan<sup>3</sup>.

In addition to the Green Economy strategy, complementary documents are being prepared, including concept papers on circular economy and green taxonomy. These documents will further support the integration of sustainable practices into the economy. Notably, the Ministry of Economy took a significant step forward by developing the "Roadmap on creating preconditions for extended usage of natural resources in economic cycle (circular economy)" in September 2022 (hereinafter circular economy roadmap)<sup>4</sup>. This roadmap identifies industry sectors with high potential for circular economy practices. During the first semester of 2023, the Ministry of Economy plans to conduct simplified assessments to evaluate the potential and identify new opportunities within these sectors. The assessments will also identify barriers and propose possible solutions, informing the development of the Circular Economy strategy and action plan by July 2023. Regarding the Green Economy Strategy, the draft document is currently in the consideration phase. It also includes provisions on eco-labelling, which can contribute to promoting environmentally friendly products and practices. The expectation is to publish the strategy in the upcoming months for public review, ensuring transparency and opportunities for public input.

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<sup>2</sup> Decision of the Government of the Republic of Armenia 1363-N of 18 August, 2021

<sup>3</sup> <https://mineconomy.am/news/2637>

<sup>4</sup>Resolution of the Minister of Economy (N1503-L, September 2022)

The application of the circular economy toolkits are among the priorities of the Waste System Strategy of the Republic of Armenia<sup>5</sup>. The strategy recognizes the significance of incorporating the principles of the circular economy, commonly known as the "5Rs" (refuse, reduce, reuse, repurpose, and recycle), in business waste reduction and recycling efforts. By adopting these principles, the strategy aims to achieve maximum benefits while minimizing landfill waste. One of the key issues highlighted in the strategy is the lack of culture and mechanisms for separate waste collection. This lack of infrastructure hinders the potential for waste to be properly valued for reuse or recycling purposes. To address this, the strategy emphasizes the need to develop systems and practices that encourage separate collection of waste, enabling its depreciation for further reuse or recycling. The Strategy provides the definition of the *Circular Economy, which is defined* as an economic system that seeks to minimize waste and maximize resource utilization. It aims to eliminate waste by promoting continuous resource use and implementing recovery and recycling practices. Circular economy systems strive to create a closed-loop system where products have extended shelf life, minimizing waste generation. This regenerative approach stands in contrast to the traditional linear economy model, which follows a "waste generation, use, and disposal" pattern. The circular economy model focuses on secondary processing of products, aiming to conserve natural resources and balance the use of renewable resources. By prioritizing the application of circular economy toolkits, the Waste System Strategy of the Republic of Armenia aims to transform the waste management system, promote sustainable practices, and reduce environmental impact while maximizing resource efficiency.

As part of its co-operation with the European Union, Armenia has made commitments to green economy. This is reflected in the Eastern Partnership Summit Declarations and the EU-Armenia Comprehensive and Enhanced Partnership Agreement (CEPA) (2017). EU-Armenia Comprehensive and Enhanced Partnership Agreement (CEPA) – the roadmap sets out 12 actions on climate change and 34 energy efficiency, renewable energy, and energy security actions. In Chapter 3 of the CEPA, Armenia commits to strengthen cooperation on environmental issues, thereby contributing to the long-term objective of sustainable development and greening the economy.

The Action Plan of the Government Program for 2021-2026 in line with the other sectors also refers to SME sector development issues, including supporting start-ups, promoting innovation and financial inclusion of SMEs however the supporting in application of circular economy concepts and business models are not specifically targeted.

The transition to a circular economy requires a comprehensive and integrated approach across various policy domains to effectively address the economic, environmental, and social challenges associated with it. While promoting green practices is important, it is equally crucial to integrate circular economy objectives into cross-cutting policies such as SME development, promotion of innovation and investments, agriculture development and education strategies to ensure coherence and maximize the impact of these initiatives.

## **1.2. SME development institutional and regulatory framework**

Armenia has conducted a proactive SME policy since the early 2000s. The Law on State Support and the "Concept for SME Development Policy and Strategy were the initial documents conveying the SME first definition and outline of the state support main directions. The establishment of the SME Development National Centre of Armenia (SME DNC) in 2002 was an important step towards creation of the dedicated SME agency responsible for the policy implementation, offering a wide range of targeted support programs.

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<sup>5</sup> Waste System Strategy of the RA has been approved by the Government of Armenia (GoA) in 2021 (Decree of the GoA N 464-L, April 1, SME2021)

*State organizations:* SME policy design and coordination is carried out by the Ministry of Economy of the Republic of Armenia. The SMEDNC was the main public institution implementing SME support programs and policies using budgetary resources as well as funds from international and donor organizations through its central office in capital city Yerevan and network of 10 regional offices ensuring outreach throughout the country. The SME support activities of the center include: (i) access to business information and consulting (ii) access to business knowledge; (iii) access to markets and business internationalization; (iv) access to finance. The SMEDNC starting from 2020 is experiencing a structural change and it has been renamed to “Investment Support Center” under the brand name “Enterprise Armenia”. The regional branches of the SMEDNC have been already closed down by the end of 2020. Due to the reorganization some of the functions previously performed by Business Armenia, which was the country’s investment and export promotion agency were taken over. The reorganization is not fully completed and it is expected that SME support function will be either is transferred to another state organization or upgraded within ISC.

*Non-state organization:* There are many non-state organizations in Armenia, such as association, unions and coalitions, incubators, private business consulting companies advocating business interests, implementing different business promotion projects, as well as providing tailored assistance. The effectiveness of the mentioned organizations, particularly business associations and unions are in different levels and the general observation is that these organizations are still in the initial phase and heavily dependent on donor funded projects. Capacity building activities of such organizations need to be continued focusing on development of paid services based on the needs of their members and target groups they serve.

There are different platforms for public-private dialogue, but the effectiveness of the latter is quite low. There is an SME Council under the Prime Minister of Armenia supposed to have four meetings a year. The Ministry of Economy has also conducted frequent consultations involving the main SME and sectorial organizations, however the public-private consultations have not been formalized and well-structured and results of such kind of consultations are not visible to public yet.

The adoption of a new SME development strategy for the period 2020-2024, developed with the active engagement of stakeholders including the private sector, represents a significant effort in the SME sector. The strategy aims to create a favourable environment that fosters the growth of innovative and competitive SMEs. Aligned with the country's medium-term development program, the strategy receives state budget funding and potential donor funding.

The strategy focuses on key priorities for SME sector development, including enhancing the institutional and legal framework, improving access to finance and markets, and promoting women and youth entrepreneurship through targeted programs.

However, SME development strategy for 2020-2024 lacks sufficient emphasis on the promotion of green practices among SMEs, except slight highlight on the necessity of promotion of green technologies. Specific technical and financial support tools are also missing. To address this gap, it considerable enhancement to ensure a more comprehensive approach to supporting SMEs in their transition towards a circular economy is crucial. This would enable a more effective and coherent policy response to the overarching economic challenge of achieving a sustainable and circular future.

By integrating environmental considerations and circularity principles into the SME strategy and broader frameworks, Armenia can provide a holistic approach that fosters sustainable development, promotes resource efficiency, and encourages SMEs to adopt greener practices. The ongoing development of the Green Economy strategy and related documents demonstrates Armenia's commitment to promoting sustainability and integrating environmental considerations into its economic framework. These efforts will certainly contribute to fostering a greener and more resilient economy in the country.

## **2. SME development in Armenia**

## 2.1. Definitions and characteristics of the SME sector in Armenia

The role of SMEs in Armenia as in other European countries is significant, having a great influence on almost all elements of the country's economic structure. SMEs are considered to be the backbone of the economy and major source of entrepreneurial innovation and skills.

The SME definition has been articulated in the Law of the Republic of Armenia on "SME State Support" since 2000. It has been approximated with the EU definition in 2011 and based on three criteria covering employment, turnover and balance sheet:

**Table 1. Definition of micro, small and medium enterprises in Armenia**

	Employment	Annual turnover	Balance sheet
Micro	< 10 employees	≤ AMD 100 million (EUR 182,398)	≤ AMD 100 million (EUR 182,398)
Small	< 50 employees	≤ AMD 500 million (EUR 911,993)	≤ AMD 500 million (EUR 911,993)
Medium	< 250 employees	≤ AMD 1 500 million (EUR 2,735,978)	≤ AMD 1 000 million (EUR 1,823,985)

Note: Average exchange rate by the CBA as of December 2021 (1 EUR=548.25)

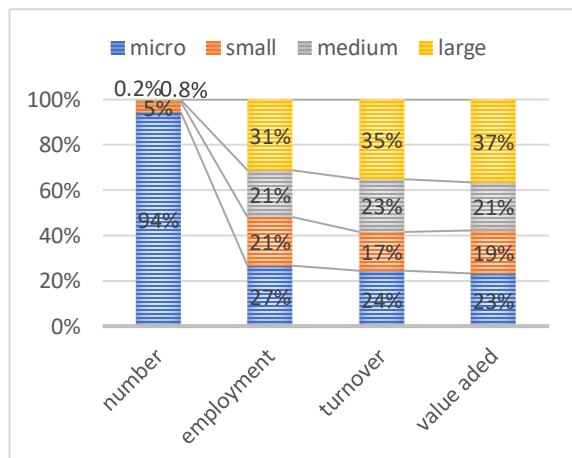
Source: Amendments to the Law on State Support of Small and Medium Entrepreneurship (2011)

The Statistical Committee of the Republic of Armenia has made efforts to improve the quality and the availability of SME statistics. In 2018 the Committee, in cooperation with the OECD, developed a methodology of Enterprise Statistics to have comparable demography on SMEs starting from 2017.

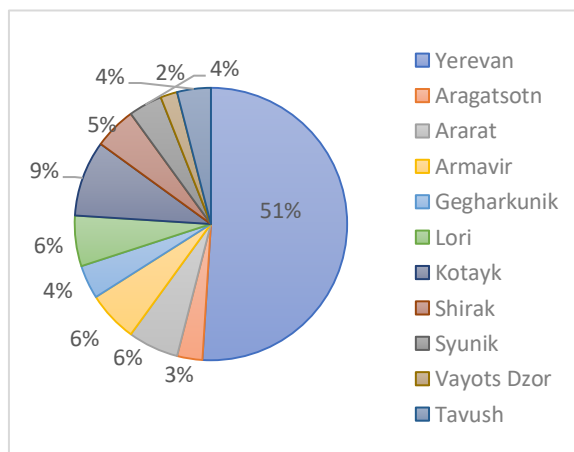
SME contribution to GDP in 2021 comprises 27.7%, which shows only around 3% increase during the last three years, while in most of the OECD countries SMEs contribute more than 50% of GDP. The Government Program for 2021-2025 puts forward the goal to achieve 55% SME contribution to GDP during five years.

According to the official statistics of 2021<sup>6</sup> SMEs in Armenia count 89.831, representing 99.8% of all enterprises, out of which 94% are microenterprises dominated in the trade sector. SMEs account for 69.6% of total business employment and generate up to 63.4% of gross value added, which are broadly comparable with the SME performance in the EU, however contributing with only 27.7% in GDP of the country and 23% in total employment (Figures 1-3).

**Figure 1. Distribution of SMEs by number, employment, turnover and value added (2021)**



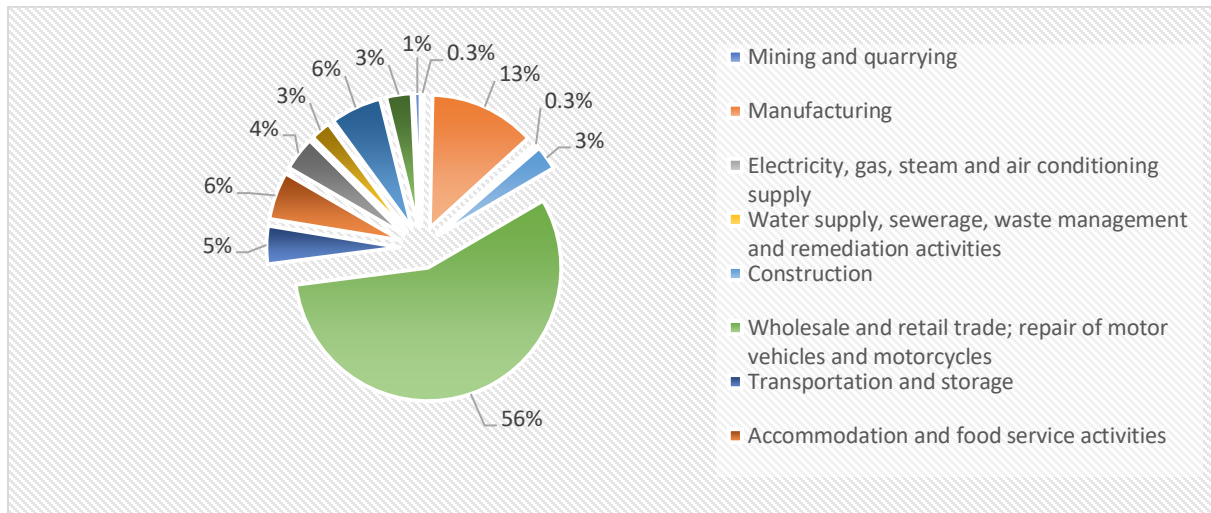
**Figure 2. Distribution of SMEs by regions (2021)**



<sup>6</sup> Statistical Committee of the Republic of Armenia, SME statistical bulletin 2022- <https://www.armstat.am/en/?nid=82&id=2536> (The framework of SMEs includes the sectors of non-financial business economy of the Statistical classification of economic activities in the European Community (NACE Rev.2))



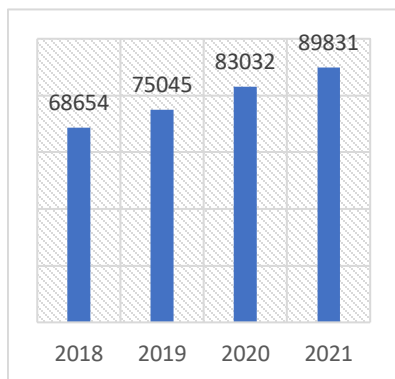
**Figure 3. Distribution of SMEs by industry sectors (2021)**



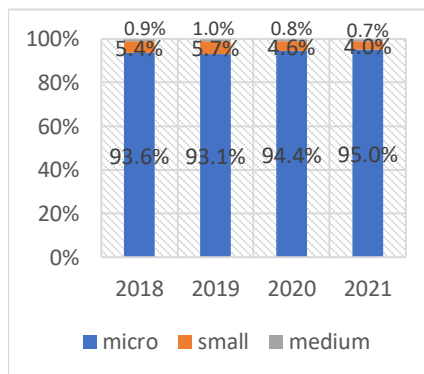
The dynamic of SMEs presented for 2018-2021 (Figures 1-3)<sup>7</sup> is positive and shows constant growth over 2018-2021 period. In 2020-2021, even in the COVID19 situation, an 19% increase was recorded while the number of employees involved in the SME sector for the same years has declined by 2%. Number of newly established SMEs during 2019-2021 counts 14786 while, however SMEs survived after three years of their operations is only 7209, comprising around 49% of the newly established ones. The high number of the SMEs with terminated activities and the fewer number of survived SMEs shows **the lack of effective SME support mechanisms that support their sustainability and growth during the incubation stage.**

In 2019, the business density (new registrations of limited liability (or its equivalent) per 1000 people ages 15-64) in Armenia according to WB Entrepreneurship Database<sup>8</sup> counts 3.43, which increased by around 80% comparing with 2015, however is lack behind from some other middle-income countries. For neighbouring Georgia, the same figure counts 9.35.

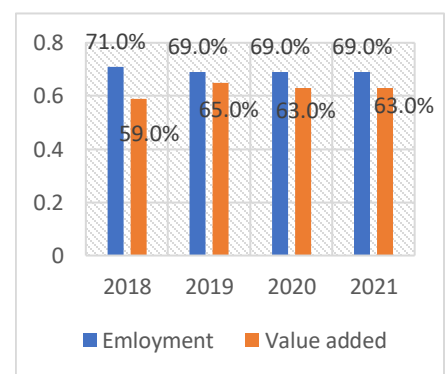
**Figure 4: Number of SMEs**



**Figure 5: Share of SMEs across their size**



**Figure 6: Share of SMEs in total employment and gross value added**



<sup>7</sup> Statistical Committee of the Republic of Armenia, SME statistical bulletins for 2018-2021 “SMEs in the Republic of Armenia”

<sup>8</sup> World Bank, Entrepreneurship Database, available at: <https://www.worldbank.org/en/programs/entrepreneurship>

Based on the Figure 3 - Distribution of SMEs by industry sectors, it is evident that the main concentration of SMEs, excluding the wholesale and retail trade sector, which is not the priority target sector for the circular economy, lies within the manufacturing (13%), professional, scientific and technical activities (6%), and accommodation and food services (6%) sectors. These sectors, particularly manufacturing and accommodation and food services, will be the primary focus of the study.

Given the prominence of the manufacturing sector, the study will explore its potential for circular economy practices. This will involve examining the specific subsectors within manufacturing, such as food and beverage production and textile manufacturing. According to the official statistics<sup>9</sup> the food and beverage sector holds significant importance, constituting 50.6% of the total manufacturing sector. In addition, the textile industry will be a specific area of focus within manufacturing due to its substantial environmental impact. Although it represents a smaller portion (2.5%) of the total manufacturing sector, the study recognizes the need to address its significant environmental challenges. Circular economy strategies, such as recycling, upcycling, and sustainable production, will be explored to promote more sustainable practices within the textile industry.

Furthermore, the study will also concentrate on the tourism sector, encompassing accommodation and food services. This sector's 6% concentration among SMEs highlights its economic significance and potential environmental impact. The study will analyze various aspects of the tourism sector, including hospitality, transportation, and attractions, to identify opportunities for circular practices. The aim is to minimize waste generation, enhance resource efficiency, and promote sustainable tourism practices.

More details on specifics of the selected sectors and their potential for circularity are provided within the Section 4 of this study.

### 3. Role of SMEs in Circular Economy

SMEs play a crucial role in national economies due to their significant contributions in the production and distribution of goods and services. Moreover, their adaptability to technological advancements and environmental changes makes them even more valuable. In addition, SMEs have the potential to generate employment opportunities and foster innovative projects. They serve as a catalyst for economic development and can facilitate the transition towards a circular economy model, which promotes sustainable resource usage and waste reduction.

While SMEs may have a relatively low individual environmental footprint, their collective impact can surpass that of large businesses in various aspects. In Armenia, SMEs constitute over 98% of all enterprises, making them a significant contributor to the country's economy. However, many SMEs are unaware of their own environmental impacts and lack understanding of what it entails to operate in an environmentally friendly manner. Going beyond regulatory compliance poses a significant challenge for them. The key bottleneck lies in the lack of awareness regarding cost-effective opportunities for sustainable practices. Addressing these knowledge gaps and promoting awareness of environmentally friendly practices is crucial for enabling SMEs to make a positive environmental impact and contribute to sustainability efforts in Armenia.

The 2022 edition of the Flash Eurobarometer on SMEs, resource efficiency, and green markets<sup>10</sup> highlights that SMEs in the European Union (EU) have taken significant steps to transition their business operations towards environmental sustainability. According to the survey, 89% of SMEs are implementing at least one action to enhance resource efficiency, such as minimizing waste, saving energy/water, recycling materials or waste within their companies, using greener suppliers, designing products for easier maintenance or reuse, selling residues and waste to other companies, and utilizing renewable energy sources. The survey

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<sup>9</sup> Statistical Committee of the Republic of Armenia, Publication - "Socio-Economic Situation of RA, January-December 2022", [https://armstat.am/file/article/sv\\_12\\_22a\\_121.pdf](https://armstat.am/file/article/sv_12_22a_121.pdf)

<sup>10</sup> The 2022 edition of the Flash Eurobarometer on small and medium enterprises (SMEs), resource efficiency and green markets - <https://europa.eu/eurobarometer/surveys/detail/2287>

explores various aspects, including SMEs' performance and actions to improve resource efficiency, the obstacles they face, and the potential impact of policy measures in accelerating their green transition. These kind of periodic surveys provide valuable information on the current state of SMEs' environmental performance and help assess progress and identify gaps. The findings can inform government efforts to support SMEs in adopting greener practices and align with sector-specific strategies. By understanding the challenges and progress of SMEs in their journey towards sustainability, policymakers can develop targeted measures and support systems to facilitate a greener business environment and contribute to overall environmental objectives.

The most recent informative survey in Armenia on the environmental performance of SMEs was conducted in 2015 as part of the "Promoting better environmental performance of SMEs" Project<sup>11</sup> with the support of the OECD. While there have been some positive changes since then, they have not been significant. Considering the current stakeholder communication and the fact that few initiatives have been initiated since the publishing of the report in 2015, the study results still present valid status quo.

**Environmental compliance** - The study revealed that only a few entities aimed to go beyond environmental compliance, with the main barriers being the lack of financial resources and a limited awareness of green opportunities. Certification processes can be costly, making it difficult for many SMEs, especially micro-enterprises, to afford them. In Armenia the number of companies that holds ISO 14000 series certificates is less than 2%, and the businesses, which hold certificates are mostly large and mid-size companies quote commercial reasons for doing so: demand from suppliers and customers, foreign partners. And very few companies see EMS as a useful management tool to improve the company's performance. Indeed, Armenia's National Institute of Standards, which has been accredited as an EMS certification body since 2005, had issued ISO 14000 series certificates to less than 10 companies and a few more are in the process. The vast majority of organizations certified are large organizations operating in mining and construction sectors and underlying reasons behind for certification of environmental management system are mainly tender requirements, improved company reputation and performance. Businessmen believe that there is little customer demand for the adoption of those systems from local market and that demand is only driven by international markets.

**Eco-labelling** - Eco-labelling aims to provide consumers with information to make environmentally conscious purchasing decisions. However, for eco-labelling to be effective, a comprehensive support mechanism and certain standards need to be in place to promote its adoption.

In the field of eco-labelling, Armenia has made some progress, particularly in agricultural products. Environmental certification or eco-labels serve as evidence that a business follows eco-friendly practices and processes that go beyond regulatory compliance. However, in Armenia, the use of terms like "ecological", "environmentally friendly", "biological" or their "eco", "bio" or other abbreviated forms on product labelling or advertising is allowed only if appropriate documentation is available.

Currently, the only international certification and control body in Armenia is ECOGLOBE LLC. This organization provides various food certification standards, including internationally recognized organic certification applicable in major foreign markets such as the EU, USA, Japan, Switzerland, UK, and Sweden. ECOGLOBE has also developed private standards for sustainable agriculture, including non-GMO certification and natural cosmetics standards. These certifications have enabled Armenian companies to obtain EU equivalent organic certification for their products in the areas of soil, plant and animal products, as well as collection of wild fruits, beekeeping, wine, and other areas leading to increased organic production and market presence in foreign markets.

However, it is important to note that there are no specific labelling schemes for non-agricultural products, services, and companies in general. To promote eco-labelling in Armenia effectively, there is a need for the development of labeling norms for non-agricultural products and services. Additionally, the establishment of incentives from one side and monitoring tools from the other would encourage businesses to adopt eco-

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<sup>11</sup> Promoting better environmental performance of SMEs, EU EaPGreen Project, Armenia, May 2015

friendly practices beyond regulatory requirements and help ensure the environmental integrity of certified goods and the adherence to sustainable practices.

**Resource efficiency applications** - The Armenian entities establish resource efficiency systems in the business processes to mainly achieve cost reduction and gain competitive advantage. The financial debt instruments initiated by the international organizations (KfW, EBRD, GCF), as well as state support subsidy programs of renewable energy (e.g. solar panels, solar water heating systems) are emerging among Armenian business and households.

**Green products** - According to the same study mentioned previously, around 10% of entities stated about producing eco-friendly goods or services (2% have received an eco-label), while 9% stated that in upcoming years plan to initiate green production process. At EU level about one of three (32%) SMEs offer green products or services, with a further 11% planning to do so in the next two years<sup>12</sup>.

The drivers for the producers to transmit traditional value chains into its green analogy are the company values and reputation, international and local market trends, gained competitive advantage.

Additionally, even when companies are aware of the potential benefits of improving their environmental performance to enhance competitiveness, a lack of appropriate skills and expertise often hinders their ability to take advantage of win-win opportunities.

Therefore, the effective strategy to present environmental information to small businesses should emphasize the "business case" and highlight the financial benefits of environmental improvements. This approach can focus on potential savings, reduced costs, and increased efficiency, which can resonate with SMEs and encourage them to prioritize sustainable practices.

In this context, it is worth mentioning the valuable experience of REC Caucasus (Regional Environmental Centre for the Caucasus) in implementing the Resource Efficiency and Clean Production (RECP) approach with the support of UNIDO (United Nations Industrial Development Organization)<sup>13</sup>. The application of RECP in over 100 SMEs has created a valuable knowledge base and represents a significant step towards transitioning to a circular economy. This experience can serve as an example and provide insights into successful practices that can be shared and replicated across SMEs in Armenia.

Indeed, addressing the challenges faced by SMEs in adopting environmentally friendly practices requires a multi-faceted approach. Access to financial resources, raising awareness about the benefits of green opportunities, and providing the necessary skills and expertise are crucial factors in overcoming these barriers and promoting better environmental performance among SMEs in Armenia.

Overall, creating supportive frameworks, providing targeted assistance, and facilitating knowledge exchange are essential for empowering SMEs in Armenia to embrace sustainable practices, enhance their competitiveness, and contribute to the transition towards a more environmentally conscious and resource-efficient economy.

## 4. Sectors-specific strategies in relation with the circular economy

The circular economy is indeed a broad and comprehensive concept that extends to various aspects of products, infrastructure, equipment, and services across all industry sectors. In the circular economy Roadmap of Armenia, specific industry sectors have been recognized for their high potential in adopting

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<sup>12</sup> Flash Eurobarometer 2022, <https://europa.eu/eurobarometer/surveys/detail/2287>

<sup>13</sup> EU4Environment Regional Program "Resource Efficient and Cleaner Production (RECP) Project, <https://recp.am/en/news/7>

circular economy practices. These sectors encompass a range of areas, including agriculture, energy, construction, manufacturing (such as light industry, food, chemical, etc.), services, and trade.

Taking into account the significant presence of SMEs, their role in employment generation, and the contribution to the gross value-added, it is evident that the food processing, textile, and tourism sectors play a crucial role in the Armenian economy.

#### ***4.1. Overview of the food processing and beverages sector and its potential for circularity***

Waste in the food industry is generated in various sectors along the production chain. The food industry in Armenia produces significant amounts of waste which include: fruit and vegetables leftovers, discarded items, bones, blood and skin from meat and fish processing, leftovers from wineries, such as pomace and grape stalks, waste from the dairy industry such as for example whey, wastewater from washing, blanching and cooling operations. While much of this waste is organic and therefore less hazardous, it can still have negative impacts on the environment if not managed properly. However, it's important to note that these waste materials also present an opportunity for implementing circular economy practices.

Food processing being categorized as one of the priority industry sectors by the Government of Armenia<sup>14</sup> shows its significance in the country's economic development. The selection of priority sectors is based on various criteria, including the sector's contribution to the creation of added value, export potential, innovation capacity, employment generation, availability of raw materials, and opportunities for green production demonstrating a commitment of the Government of Armenia in promoting sustainable practices.

According to the official statistics the food and beverage production volumes in 2022 made up about 35% of the total industrial production volume, and more than 50% of the manufacturing industry, recording increase for more than 5% in comparison with the same period in 2021<sup>15</sup>. Armenia's food industry plays a significant role in the country's economy, with food products accounting for more than a fifth of its goods exports each year. Several important segments within the industry contribute to this export value, including processed food and alcoholic beverage production, with a particular emphasis on wine and brandy made from locally grown grapes.

Armenia has a strong tradition of winemaking, and its wine and brandy production are highly regarded. The unique combination of soil and climate conditions, along with the country's high altitude and limited use of chemical fertilizers, contributes to the production of flavourful grapes and high-quality wines. The export of alcoholic beverages, including wine and brandy, is a significant component of Armenia's food processing exports.

In addition to alcoholic beverages, Armenia exports a range of other food products. Fish, cheese, canned fruits, jams, coffee, and mineral water are among the principal food processing exports. The country's natural resources and favourable agricultural conditions enable the production of diverse food products, which are then processed and exported.

Furthermore, some Armenian exporters also engage in the shipment of frozen fruits and vegetables. This highlights the potential for utilizing the country's abundant produce in processed frozen food products, further expanding the range of food exports.

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<sup>14</sup> Government Decree N 534-L, 13 April, 2023 –“Approval of the concept paper of the five priority industry sectors”

<sup>15</sup> Statistical handbooks “Social-economic situation of the Republic of Armenia for January-December 2022”, <https://armstat.am/am/?nid=82&id=2547>

Armenia's commitment to sustainable agricultural practices, such as limited use of chemical fertilizers, helps maintain the quality and flavour of its produce. This emphasis on natural cultivation methods contributes to the appeal of Armenian food products in the international market.

Overall, the combination of favourable soil and climate conditions, high-altitude agriculture, and a focus on traditional production techniques contributes to the export success of Armenia's food industry. By capitalizing on its natural resources and adhering to sustainable practices, Armenia is able to offer flavourful and high-quality food products to the global market, particularly in segments such as alcoholic beverages, fish, cheese, canned fruits, jams, coffee, mineral water, and frozen fruits and vegetables.

Besides Armenia is progressing in **organic agriculture** development, which is part of Armenia's sustainable development concept and is a priority area in the government's agro-food policy. The summary report "Organic Agriculture – A step towards the Green Economy in the Eastern Europe, Caucasus and Central Asia region" concluded that organic agriculture can play a strategic role in the transformation to a Green Economy and in revitalising the farm and food sector. It can create employment that provides better returns per unit of labour input all along the value chain. It can also increase income and food security for rural communities, create business opportunities for investors, and increase the contribution of agriculture to the national economy by reducing import bills for farm inputs – which is particularly important for Armenia, that imports all of its chemical fertilizers and pesticides (UNEP 2011).

In general, the problems that can arise in food processing are mostly related to energy and waste management.

**Energy Management:** Food processing typically requires significant energy inputs, and inefficient energy use can contribute to both environmental and economic costs. Implementing energy-efficient technologies and practices can help reduce energy consumption and lower operating costs. This may include optimizing production processes, improving insulation, utilizing energy-efficient equipment, and exploring renewable energy sources such as solar or biomass.

**Waste Management:** Effective waste management is crucial to minimize the environmental impact of the food industry. Implementing waste reduction strategies, such as source separation and recycling programs, can divert waste from landfills. Additionally, organic waste can be utilized for various purposes, such as composting or anaerobic digestion, to generate energy or produce fertilizers. Developing partnerships with local farmers or composting facilities can help establish efficient waste management systems.

**Value-Added Product Development:** Another approach to reducing waste in the food industry is to explore opportunities for creating value-added products from waste materials. For instance, fruit and vegetable leftovers can be processed into juices or sauces. Winery waste like pomace and grape stalks can be used for producing biofuels, animal feed, or even cosmetics. By finding innovative ways to utilize these by-products, the food industry can generate additional revenue streams while reducing waste.

**Water Management:** The proper management of wastewater generated during food processing is essential to protect water resources. Implementing water-efficient technologies, recycling and reusing water within the facility, and ensuring compliance with wastewater treatment regulations can help mitigate the environmental impact. Furthermore, exploring water-saving practices, such as implementing automated systems for water monitoring and control, can contribute to more sustainable water management.

**Collaboration and Knowledge Sharing:** Encouraging collaboration among stakeholders within the food industry, including producers, processors, and waste management entities, can foster the exchange of best practices and knowledge sharing. This collaboration can help identify common challenges and develop innovative solutions to improve energy and waste management practices throughout the industry.

By addressing energy and waste management challenges in the food industry, Armenia can promote a more sustainable and environmentally friendly approach to food production. Embracing circular economy

principles, such as reducing waste, reusing by-products, optimizing resource use and cooperation with other industry sectors can lead to economic benefits, reduced environmental impact, and a more resilient and efficient food industry.

#### **4.2. Overview of the textile sector and its potential for circularity**

Textiles and clothing are an essential part of our daily lives and at the same time textile industry is a major source of pollution and waste. Textiles are among the highest-pressure category for the use of primary raw materials and water and for GHG emissions, after food, housing and transport. It is estimated that less than 1% of all textiles worldwide are recycled into new textiles<sup>16</sup>

Making textiles circular can have an immense impact on environment. By extending the life of textile products through reuse and repair and keep end-of-life (EoL) materials in the economy through recycling reduce use of raw material and pollutions.

There is substantial potential for rapid and sustainable growth in the textile sector, and the RA government recognizes the revival of the sector as a means to create jobs, foster value-creating trade, expand exports, and promote women's employment and entrepreneurship. By focusing on these objectives, the government aims to unlock the sector's full potential and contribute to Armenia's economic development and social progress.

The clothing and accessories industry is a strategic export-oriented sector in the Republic of Armenia, playing a significant role in employment, particularly for women. In 2020, the sector employed around 7,400 individuals, showing a growth of 1.5 times compared to 2017. With a production potential of approximately 6 billion drams in 2021, the sector holds a crucial position within Armenia's industrial landscape. Although textiles constitute a small share of the overall industry (2.8% in 2021), statistical analysis and interviews with manufacturing companies indicate the sector's considerable development potential and its significant social impact in the country<sup>17</sup>.

The sector primarily consists of small and medium enterprises, and over the past 10-20 years, large producers and well-known brands have emerged in Armenia's textile sector. According to the State Revenue Committee of Armenia, the number of textile companies listed as large taxpayers increased from 8 in 2017 to 11 in 2021.

The textile sector also shows substantial export potential. Despite a decline in exports in 2019 and 2020 (20%), textile products from Armenia experienced an average annual growth rate of over 40% between 2011 and 2020. In 2020, clothing and clothing accessories (excluding knitted machine-made or hand-made items) accounted for the largest share of exports (69%), followed by knitted clothing and accessories (machine-made or hand-made) at approximately 25%.

According to the Government Program (2023-2026) on development of the Armenia's Textile Industry it is planned to implement comprehensive measures for technological re-equipment, expanding into new international markets, and strengthening current positions, including within the textile sector. The government aims to support Armenian companies' participation in international exhibitions, provide annual training for around 2,000 specialists in the processing industry, create favourable working conditions, facilitate the acquisition of modern equipment and skills through financial and consulting support, and employ other tools to promote sector development. Currently, Armenia's textile sector represents a small portion of the global textile industry and primarily focuses on producing garments from imported raw materials that require minimal fabric processing. However, some major companies have expressed intentions to expand their operations to include fabric production, which involves dyeing and finishing processes. This expansion may elevate environmental risks, necessitating proper management of production waste. It is noteworthy that the aforementioned Program also addresses the issues of sustainable textile production. The action plan of the Program among the others also anticipates activities

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<sup>16</sup> Ellen McArthur Foundation (2017), *A new Textiles Economy*

<sup>17</sup> Program of the Government of Armenia on "Development of the Armenia's Textile Industry for 2023-2026", Government Decree N 138L, February 2, 2023

to support the increase of number of textile companies which holds internationally recognized environmental management systems, including ISO 14000 series and other eco-certificates and labels.

Adopting a more holistic approach is crucial for supporting sustainable practices and promoting circular economy principles in the textile industry.

Sustainable sourcing of materials is a key aspect of a circular textile industry. This involves promoting the use of environmentally friendly and socially responsible raw materials, such as organic fibres, recycled fibres, and renewable materials. It also requires establishing transparent and traceable supply chains to ensure the integrity and sustainability of the materials used.

In addition to sustainable sourcing encouraging the adoption of eco-friendly technologies is another important step. This can involve offering incentives or subsidies for businesses that invest in sustainable technologies, such as energy-efficient machinery or water recycling systems. Government support and collaboration with industry associations can play a crucial role in facilitating the adoption of these technologies.

This can involve implementing cleaner production techniques, reducing water and energy consumption, minimizing the use of hazardous chemicals, and adopting technologies that enable more efficient and sustainable production methods. Collaboration with research institutions and technology providers can help identify and implement innovative solutions in this regard.

Promoting recycling and upcycling of textile waste is another important component of a circular textile industry. Establishing efficient collection and sorting systems, investing in textile recycling facilities, and fostering collaborations with recycling and upcycling enterprises can help divert textile waste from landfill and reintroduce it into the production cycle.

Encouraging product life extension through repair and reuse is also critical. Supporting initiatives that promote repair services, offering incentives for consumers to repair and maintain their textile products, and facilitating the resale and sharing of pre-owned textiles can help extend the lifespan of products and reduce the need for new production. This can be facilitated through innovative business models such as rental services, clothing libraries, and online platforms for second-hand sales.

Furthermore, fostering linkages between textile producers and suppliers is essential for creating a more sustainable and circular industry. This can involve establishing networks and platforms that facilitate collaboration, information sharing, and resource exchange among stakeholders in the textile value chain. Encouraging partnerships between designers, manufacturers, suppliers, and waste management organizations can promote a more integrated and circular approach to textile production and waste management.

To drive positive change, promoting awareness among textile industry stakeholders about sustainable production methods is essential. This can be done through training programs, workshops, and information campaigns that highlight the benefits of adopting eco-friendly practices. Additionally, providing support for capacity building and technical expertise can help textile businesses transition to more sustainable models by providing them with the necessary knowledge and tools.

#### ***4.3. Overview of the tourism sector and its potential for circularity***

Integrating circularity and resource efficiency in the tourism value chain can lead to a sustainable and resilient tourism ecosystem. It offers opportunities for businesses to innovate and differentiate themselves, while tourists can engage in purposeful travel and contribute to positive impacts. By embracing circular economy principles, the tourism industry can drive behaviour change, foster collaboration with interlinked sectors, and contribute to the overall transformation of the tourism ecosystem towards a more sustainable future.

Armenia's tourism industry plays an important role in the country's economy, contributing to employment and economic growth. As the sector continues to recover from the challenges posed by the pandemic and



regional conflicts, the country's rich cultural and natural assets position it well to attract visitors from around the world.

Armenia offers a diverse range of tourism opportunities, attracting visitors with its cultural, religious, ecological, agricultural, recreational, culinary, nature, adventure, and genealogical attractions. The country boasts numerous cultural and historical sites, including UNESCO World Heritage sites, medieval monasteries, churches, and fortresses, making it an attractive destination for those interested in heritage tourism.

Hospitality companies in Armenia, including hotels, B&Bs, restaurants, transportation companies, tour operators, and travel agencies, cater to the needs of both domestic and international tourists. Key markets for international tourists visiting Armenia include France, Germany, Russia, Iran, and the United States.

Armenia's tourism industry has experienced impressive growth over the past decade, with an annual growth rate of nearly 15 percent from 2010 to 2020, making it one of the world's fastest-growing tourist destinations. However, in 2020, the COVID-19 pandemic and regional hostilities had a significant impact on international tourism, resulting in the lowest number of international tourists since 2005. As global travel restrictions are gradually lifted, Armenia's tourism industry is being revived. While the number of travellers increased significantly in 2021, it was still below pre-COVID levels. The first half of 2022 has witnessed strong international tourism numbers, partly due to a large volume of Russian travellers following the invasion of Ukraine.

According to the official statistics the number of tourists visiting Armenia has seen a significant increase compared to the past two years. The number of tourists visiting Armenia in 2022 was more than 1.6 million, which is almost doubled comparing with 2021. In the first quarter of 2023, over 450 thousand tourists visited Armenia, which is nearly three times more than the same period in the previous year<sup>18</sup>.

Tourism development new strategy currently in the development phase. Embracing a circular economy approach in the tourism value chain can contribute to the sector's sustainability and resilience, offering opportunities for businesses, tourists, and the interconnected industries.

**Competitiveness and Innovation:** Implementing circular economy principles can enhance the competitiveness of tourism businesses. By adopting innovative practices, such as waste reduction, recycling, and resource optimization, eco-labelling and certification businesses can differentiate themselves in the market. This can lead to cost savings, improved operational efficiency, and the development of unique products and services that appeal to sustainability-conscious travellers.

**Diversification and Differentiation:** Circular economy strategies can enable tourism businesses to diversify their offerings and create unique experiences. For example, implementing circular practices in accommodation facilities by incorporating energy-efficient technologies, utilizing renewable energy sources, or adopting water-saving measures can attract environmentally conscious tourists seeking sustainable accommodation options. Such differentiation can help businesses tap into niche markets and attract a broader customer base.

**Interlinkages with Other Sectors:** The adoption of circular economy principles in the tourism industry can influence and encourage sustainability in interlinked sectors, such as transportation and food and beverage. Collaborative efforts across these sectors can lead to the development of sustainable tourism ecosystems.

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<sup>18</sup> Statistical handbooks "Social-economic situation of the Republic of Armenia for January-December 2022", <https://armstat.am/am/?nid=82&id=2547> and "Social-economic situation of the Republic of Armenia for January-March 2023", <https://armstat.am/am/?nid=82&id=2567>

**Positive Footprint and Purposeful Travel:** The circular economy offers opportunities for tourists to leave a positive footprint by engaging in sustainable practices during their travels. This may include choosing accommodations with eco-certifications (e.g. Green key), supporting local and sustainable businesses, participating in responsible tourism activities, and minimizing waste generation. Travelers can align their values with their travel choices and contribute to positive environmental and social impacts.

**Behaviour Change and Ecosystem Transformation:** The circular economy approach has the potential to create a ripple effect throughout the tourism ecosystem. By promoting sustainable behaviours among tourists, such as reducing waste, conserving resources, and supporting local communities, the entire sector can undergo a transformative shift towards sustainability. This can encourage businesses, communities, and policymakers to collaborate and develop long-term strategies for a more sustainable and resilient tourism industry.

## 5. Barriers preventing SMEs In Armenia from adopting circular economy business models

Through a comprehensive research process involving a desk review, stakeholder consultations, and focus group discussions with SMEs, potential barriers hindering the adoption of circular economy business models by SMEs have been identified. These barriers can be categorized as follows:

- lack of government support/effective legal framework
- lack of information and resources
- lack of technical and technological know-how, and
- company environmental culture
- lack of market demand for green products
- lack of support from the supply and demand network
- lack of financial resources

The categories are explained further below:

- **lack of government support/effective legal framework**

The lack of government support/effective legislation (through the provision of funding opportunities, information and training, effective taxation policy, laws and regulations, etc.) is widely recognised as a significant barrier to encourage and incentivize circular economy practices and to the uptake of environmental investments.

It appears that within the current government policy, the primary objectives of SME development are centred around improving productivity, job creation, and supporting economic growth opportunities and improving access to finance and markets for SMEs. These objectives are explicitly stated in the acting SME Development Strategy. However, it is important to note that the strategy does not clearly address the goals of reducing resource consumption and improving environmental performance through the adoption of circular business models. Subsequently there is no technical and financial toolkits in place supporting SMEs to move in embracing circular practices.

There are several projects and initiatives in Armenia that are funded by international and donor organizations and focus on promoting green practices. These initiatives play a crucial role in raising awareness and creating success stories however they rely on project-based funding and lacks a systematic and comprehensive approach. SME state support programs are currently implemented by the “Enterprise Armenia” (former SME Development National Center) and NCIE -“National Center for Innovation and Entrepreneurship” and primarily focus on supporting start-up businesses, providing information and

consultancy services to growth-oriented companies, and facilitating export activities. However, it seems that there is a lack of specific support programs aimed at promoting circular economy concepts.

➤ **Lack of information and resources**

SMEs may struggle due to a lack of awareness and access to relevant information and knowledge about circular economy principles, best practices, and available resources. As highlighted in different studies the lack of information about the benefits of the circular economy and environmental compliance is one of the main barriers to circularity.

Most small businesses seek clear and consistent information on the minimum requirements for compliance. Interpretation of text-heavy guidance can be difficult for an SME: there should be a simple message about the problem, its solution (step-by-step guidance) and where to go for more information. To avoid excessive or unnecessary costs for businesses, environmental guidance should also make a clear distinction between the minimum legal requirements and good practice. The most efficient way of providing compliance advice and guidance to small businesses is to take into account the full suite of regulations that apply to them, not just environmental regulations, which would require close coordination between regulatory authorities across the government.

According to the conducted by the support of OECD in frames of “Promoting better environmental performance of SMEs” Project in 2015 the vast majority of SMEs are mostly unaware of own environmental impacts, they are unclear about what it means to operate in an environmentally friendly way and going beyond regulatory compliance represents an even bigger challenge, where the lack of awareness of cost-effective opportunities is the key bottleneck. According to the results of the focus-group discussions conducted in June 2023 with the participation of more than 40 SMEs it was reconfirmed that the most of the SMEs either never heard of the term ‘circular economy’, or could not understand its meaning. On the positive side, when participants were given a simpler definition of circular economy, involving aspects such as the re-use and recovery of waste materials, the majority responded understood the meaning and some of them were either thinking or already making efforts to recycle and repair.

According to the aforementioned study, only few entities aim to record beyond environmental compliance and along with the lack of financial resources the lack of awareness on green opportunities is among the top reasons.

➤ **Lack of technical and technological know-how**

Lack of technical and technological know-how also can hinder SMEs from transforming their existing business models into a circular one. Current business practices in Armenia are widely using linear technologies keeping the economy locked. Even when the companies are aware of the potential of better environmental performance to improve a firm’s competitiveness, a lack of appropriate skills and expertise commonly prevents firms from acting upon win-win opportunities. To transform their operations into a circular model, SMEs would need to integrate new sustainable production and consumption technologies into their existing linear business models. These technologies include eco-design, clean production, and life cycle assessment, among others. However, the availability of competent professionals to manage these technologies is often limited, further impeding progress. Nevertheless, the demand for environmentally friendly technologies is often quite low, and the technical capacities are inadequate. Lack of technical know-how may result in SMEs adopting linear technologies and business models they are familiar with, and depending on their suppliers’ suggestions for innovative technical solutions. Furthermore, the insufficient investment in technologies focusing on circular product designs (eco-design) and operations, the lack of advanced resource efficiency technologies, along with the lack of cooperation with recycling companies from other industries are factors that are likely to impede the adoption of circular economy approaches by SMEs.

### ➤ **company environmental culture**

The lack of a proactive environmental culture within SMEs, can hinder their transition towards circular business models. Limited awareness of circular economy concepts among SMEs, particularly among owners and managers who hold significant decision-making power, is a major obstacle. The attitudes of SME managers towards the circular economy can vary, with some displaying a positive attitude while others may not fully embrace it. Additionally, different risk perceptions among SME owners or managers can impact their willingness to adopt circular economy practices, even after recognizing the associated benefits. Estimating concrete value propositions, assessing the costs and risks of implementing circular measures within the current business environment, and adopting a more long-term perspective pose additional complexities. Resistance to change and the reluctance to deviate from conventional business models can act as significant bottlenecks for micro-small companies.

### ➤ **lack of market demand and support from the supply network**

The barrier of **lack of support from the supply and demand network** refers mainly to the dependency of SMEs on their suppliers' and customers' engagement in sustainable activities. The successful implementation of a circular economy necessitates the collaboration of all parties across the supply chain<sup>19</sup>. Adopting a circular business model is likely to increase complexity throughout the supply chain (with regard to logistical, financial, and legal aspects). On the other hand, insufficient customer awareness of the benefits of green products does not encourage a change in consumption patterns, and often there is no substantial pressure from the demand side on smaller organisations to meet sustainability criteria or develop a circular economy business model.

Many consumers may not be fully aware of the environmental impact of their purchasing decisions or may not understand the benefits of choosing green products and services. There could be a lack of effective communication and education about the importance of sustainability and the advantages of green alternatives.

It may be difficult to persuade SMEs to act upon environmental information, even when it is obviously in their own financial interest. Government policy can play a significant role in creating demand for green products and services and boosting the market where private consumer demand for them is insufficient. These can be done directly - through green public procurement) and indirectly - through green certifications and eco-labels.

### ➤ **lack of financial resources**

Lack of financial resources is one of the main barriers to the adoption of circular economy by SMEs. Accessing finance is a challenging task for any firm, however, financing constraints tend to be more difficult for SMEs to overcome than for larger firms which have been repeatedly reflected in various studies and reports.

Access to finance is critical to SMEs' survival and growth, allowing them to expand operations, modernize equipment or move into new undertakings, including transition to circularity. Access to finance is a particular hindrance for start-ups. Eligibility criteria for start-ups to qualify for a business loan at commercial banks or credit organizations almost always include heavy collateral requirements and solid credit history, which start-up companies can rarely meet. In addition, interest rates of the commercial loans are far above what start-up SMEs can afford during initial setup and growth stages, thus limiting companies to invest. The start-ups and microenterprises are not considered a viable market by banks and credit organizations and not targeted through suitable loan instruments. Therefore, a credit guarantees and/or

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<sup>19</sup> Derojeda, K.; Verzijl, D.; Rouwmaat, E.; Probst, L.; Frideres, L. *Clean Technologies, Circular Supply Chains, Business Innovation Observatory*; European Commission: Brussels, Belgium, 2014.

interest rate subsidies can have a major influence on the size of the credit gap, and can be provided for circular transformation purposes.

There are different sources of SME financing in Armenia, including national and international, private and public. By the support of EBRD (European Bank for Reconstruction and Development) SMEs in Armenia will have more opportunities to invest in green technology. Special credits are offered through commercial banks to SMEs for investing in climate adaptation and mitigation technologies, which also help to improve their productivity and reduce costs<sup>20</sup>.

## 6. Conclusions and Recommendations

### 6.1. *Business benefits of the circular economy for SMEs*

The concept of circular economy offers a way of thinking that provides strategies and practices to increase resource efficiency. In a circular economy the central goal is to retain as much value as possible from resources, products, parts and materials to create a system that allows for long life, optimal reuse, refurbishment, remanufacturing and recycling – as opposed to a model which can be characterized as: “take-make-dispose”.

By adopting circular economy strategies and practices entrepreneurs can grasp different business benefits. These benefits depend on the adopted strategy, the degree to which the business processes are circular, the environment in which the company is active the role of the company in the value chain and the skills and proactiveness of the core team of the company. Nevertheless, the following main economic and environmental benefits for SMEs can be highlighted.

#### **Business benefits:**

***Reduces costs*** - Circularity can indeed lead to cost reductions for companies in several ways. By adopting strategies like recycling, reusing, and remanufacturing, companies can reduce their raw material procurement costs and waste disposal expenses. The circular economy promotes energy-efficient processes and the use of renewable energy sources. By optimizing energy consumption and adopting renewable energy, companies can reduce their energy costs over the long term, leading to significant savings. Circular business models often encourage collaboration between companies for resource sharing, joint production, or waste exchange. By collaborating, companies can reduce costs associated with purchasing new resources, optimize production capacity, and find cost-effective waste management solutions.

***Thinking circular stimulates innovation*** - The concept of circular economy provides inspiration for businesses to increase their resource efficiency. It provides a new lens to look at a company’s business model and operations and thereby stimulate innovation. Circular economy principles encourage companies to design new products considering durability, repairability, and upgradability.

***Creates a green image***- Consumers, businesses and governments are more and more aware of the environmental impact of the products which they use. They therefore are more tuned in to sustainability when making their buying decisions. Through adopting circular economy strategies and practices businesses can reduce the environmental footprint of their products and thereby differentiate themselves from their competitors.

***Opens new markets and opportunities for growth*** - Circular solutions may also create new markets / niches. For example, in the textiles industry there are various businesses which produce yarns from discarded clothing or from textiles waste. Since consumers are looking for sustainable clothing, this has grown into a separate market which exists next to the market for regular textiles.

***Increased customer loyalty and more stable revenue streams*** - The global growing trend is that consumers

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<sup>20</sup> <https://www.ebrd.com/news/2018/ebrd-and-gcf-support-armenian-green-investment.html>

will care not only about product quality and price, but also keen on knowing that products they buy are produced in environmentally friendly ways. Adopting such business models have the benefit that they increase customer loyalty and provide more stable revenue streams. Which us supposed that will be further extended in Armenia. A downside is that such models generally require investments.

**Environmental benefits:** Adopting circular economy strategies and practices is not only beneficial to business but also the environment. Becoming more circular requires companies to reduce their environmental impact by:

- reducing use of raw materials;
- reducing energy consumption and/or using solely renewable/green energy;
- reducing water consumption;

By doing so, becoming more circular is also a proactive way of meeting future compliance requirements.

#### **Case study: Nairian cosmetic company**

*Nairian, a flourishing local business in Armenia, was founded by a family and has since become well-known for its variety of organic skincare cosmetics. The company operates on a sustainable farm, which not only supports a small village with jobs but also contributes to agricultural development in the area.*

*One of Nairian's core commitments is to environmental values, and they strive to balance business efficiency with nature protection. For instance, their bottles of natural products are designed to be recyclable, and they encourage customers to participate in their recycling program. Customers who return empty bottles receive a special discount when purchasing the same product. The recycling process is handled by a separate company called "Apaga."*

*In terms of farming practices, Nairian maintains sustainability by avoiding the use of synthetic fertilizers in their agricultural production. They also compost all organic waste generated on the farm. Furthermore, Nairian ensures that they only wild-harvest non-endangered crops and utilizes upcycled and recycled equipment whenever feasible.*

*While Nairian primarily sources organic oils from Italy, they also purchase a smaller portion from local producers. In an effort to further expand their sourcing options, Nairian experimented with extracting oil from fruit stones. However, this approach turned out to be too expensive for them. This is where CirculUP! can assist fruit producers in introducing oil production into their factories. CirculUP! can create a link between these producers and the cosmetics factories in Armenia. This would enable the fruit producers to supply oils such as rosehip and buckthorn, which have significant potential in the industry due to their high demand and relatively high prices.*

<https://www.nairian.am/en>

Source: Notes from company visit conducted by CirculUP Project staff

## Case study: M.Sisakyan textile company

### 6.2. Recommendations

Whereas circular economy concepts have already emerged in Armenia, further and stronger policy actions, effective systems and structures are needed to support wider application of circular economy business models by SMEs.

Key recommendations are divided following three major groups:

- (1) Establishment of enabling circular economy ecosystem and improved legal framework**
- (2) Promotion of green practices and circular economy business models among SMEs**
- (3) Creating market demand for green practices**

#### 1. Establishment of enabling circular economy ecosystem and improved legal framework

The role of the government in supporting the establishment of an enabling circular economy ecosystem is crucial for driving sustainable and efficient resource use. This ecosystem involves various stakeholders, including public and government actors, ministries, universities, non-profit organizations, SMEs, and citizen-consumers. The Ministry of Economy, in particular, can play a leading role in coordinating and uniting these stakeholders around a common objective.

By bringing together diverse stakeholders and leveraging their expertise, the Ministry of Economy can

*The M. Sisakyan LLC textile production facility in Spitak, Lori Province, Republic of Armenia, has been utilizing advanced technology in its textile production since 2017. In 2022-2023, the facility participated in the EU4Environment initiative, which is implemented by REC Caucasus. This initiative focuses on providing technical support for resource efficiency and waste reduction. As part of the initiative, the facility underwent assessments for resource efficiency and clean production (RECP).*

*During its operations, the textile production facility generates a significant amount of textile waste, which used to be discarded. However, through the organization's willingness to collaborate and its open approach, a partnership was established with a textile "LATE".*

*"LATE" is a non-formal group of artists, sewers, tailors who exclusively work with textile waste to create a wide range of products, including pictures, carpets, bags, toys, and more. This partnership exemplifies a circular business model, where collaboration between small and medium-sized enterprises (SMEs) allows for the transformation of waste textiles into valuable resources. By repurposing the textile waste, this approach not only enables the creation of new products but also significantly reduces the negative environmental impact associated with textile waste disposal.*

*CirculUP! can play a crucial role in mapping and creating linkages between textile companies that generate waste and those that utilize waste as a material for creating new products or recycling. By facilitating such connections, CirculUP! can support the establishment of more circular business models within the textile industry, promoting resource efficiency, waste reduction, and sustainable practices.*

<https://www.facebook.com/lateupcycling>

Source: Interview with the RECP expert and head of LATE

foster collaboration, knowledge sharing, and alignment towards achieving the goals of a circular economy.

Launching of the GREEN Armenia policy dialogue platform in 2022 by the Government of Armenia, in cooperation with the World Bank, the European Union and the United Nations Development Program was an important step in support of Armenia's promising sustainable development, green recovery and growth.

A working group needs to be established under the Ministry of Economy to support the works of the Platform. The group's insights can inform future decision-making.

Recommendations:

- **Establishment of the stakeholder working group under the Ministry of Economy:** This working group would consist of representatives from relevant organizations, including ministries, universities, non-profits, SMEs, and consumer groups. The purpose of this group would be to provide guidance throughout the entire circular economy journey, from policy development to the introduction of specific support schemes and incentives that encourage circular economy practices, as well as can play a role in monitoring the progress and evaluating the results of circular economy initiatives.
- **Enhancement of SME strategy with consideration of circular economy and resource efficiency objectives:** It appears that the SME development strategy for 2020-2024 lacks sufficient emphasis on the promotion of green practices among SMEs and emphasis on integration of circular economy principles. To address this gap, it would be beneficial to enhance the strategy explicitly highlighting not only the importance of promoting circular economy concepts within SMEs and its benefits, but also design targeted activates and toolkits to help SMEs in their transition towards a circular economy. This could involve providing technical and financial support, tax incentives, grants, or subsidies for SMEs to adopt environmentally friendly practices and invest in eco-innovation.
- **Alignment of the SME strategy and sectoral policies:** Alignment of the SME strategy with sector-specific and circular/green economy strategies and policies is crucial to create a synergetic and holistic approach towards promoting circular economy business models. This alignment supports the development and provision of specific support schemes and toolkits tailored to the needs of each sector. For example, in case the Program of the Government of Armenia on "Development of Armenia's Textile Industry for 2023-2026," addresses sustainable textile production and promotes eco-certification and labelling. The action plan of the Program among the others also anticipates activities to support the increase of number of textile companies which holds internationally recognized environmental management systems, including ISO 14000 series and other eco-certificates and labels. the Waste management strategy highlights the importance of waste reduction through introduction of incentives for new business models of private companies that can offer waste collection, disposal services. and efficient installation systems. By ensuring coherence and coordination among different related strategies, the necessary support can be provided to achieve the established targets and promote circular economy principles effectively. Alignment requires coordinating efforts and resources with relevant government structures, programs and initiatives as well as with industry associations, experts, and stakeholders to develop sector-specific support schemes and toolkits.
- **Promotion of the Eco culture:** To promote eco culture and behaviour change, it is important to focus on increasing awareness and knowledge about circular economy concepts among SME owners, managers, and employees. Providing targeted training and resources that demonstrate the benefits and opportunities of circular business models can help overcome resistance and encourage engagement. Social media platforms can also create dedicated groups or communities where SME owners, managers, and employees can engage in discussions, share experiences, and access resources related to circular economy practices. Encouraging *collaboration and networking* is crucial for facilitating knowledge sharing and creating a supportive ecosystem for circular economy transitions. SME support agencies and business associations can take the lead in establishing networks, platforms, or clusters that bring together SMEs, research institutions, industry experts, and other stakeholders interested in the circular economy. These platforms can organize events, workshops, and conferences focused on circular economy topics, providing



opportunities for learning, exchanging ideas, and building partnerships. Additionally, *Green awards* and *recognitions* can be introduced to celebrate and showcase SMEs that have successfully implemented circular economy practices, inspiring others to follow suit.

## 2. Promotion of green practices and circular business models among SMEs

While SMEs have the potential to drive innovation and embrace green practices, they often face challenges due to a lack of knowledge, resources, and capacity in implementing circular business models. As highlighted in different studies the lack of information about the benefits of the circular economy and environmental compliance is one of the main barriers to circularity. SMEs are often unaware of many financially attractive opportunities for environmental improvement. There is a widespread misperception that protecting the environment is associated with technical complexity, burdens and costs. Even when they are aware of the potential of better environmental performance to improve a firm's competitiveness, a lack of appropriate skills and expertise commonly prevents firms from acting upon win-win opportunities. In order to effectively introduce green practices and circularity, specific support schemes become crucial. Through specific support schemes SME support government agencies, business associations can provide SMEs with the necessary information, resources, and guidance on green practices and circular business models enabling them to make informed decisions and overcome barriers to adopting circular practices. Therefore, environmental information targeting small businesses should make the "business case" and illustrate the financial benefits of environmental improvements.

SMEs may require financial assistance to invest in sustainable technologies, equipment, and infrastructure. Facilitating collaboration not only within industry sectors but also across different stages of circularity can be extremely beneficial in establishing and promoting circular practices among SMEs.

Collaboration allows SMEs to share their experiences, successes, and challenges related to implementing green practices and circular business models. By learning from each other, SMEs can gain valuable insights, practical knowledge, and innovative solutions that can accelerate their transition towards circularity. Sharing best practices and lessons learned fosters a supportive environment where SMEs collectively overcome common obstacles and optimize their circular strategies.

The concept of SME greening needs to be addressed in the SME support national programmes developed by Ministry of Economy of Armenia and integrated into the scope of activities of the institutions responsible for SME development and entrepreneurship promotion, such as Enterprise Armenia and National Centre for Innovation and Entrepreneurship

### Recommendations:

- ***The Ministry of Economy should re-design its website to provide circular economy principles and good practices specifically designed for SMEs.*** The alternative is to launch another ***specialised website with sector-specific green practices*** (linked/incorporated to websites of SME development state agencies). Business associations, academic institutions, NGOs and international projects and consultants could be engaged to develop concise, simple-language materials, including video materials (compliance related, sector-specific guides, good practices, case studies) to populate the circular economy benefits and transformation steps relevant to specific activity sectors. However, designing and launching an online educational and information tool is not enough: there needs to be an effective communication strategy to ensure that businesses continue to use and benefit from it. Through targeted communication campaigns and information dissemination, government can highlight the environmental, economic, and social advantages of adopting sustainable approaches. Increased awareness creates a positive perception of green practices, motivating SMEs to embrace circularity. Case studies should preferably be local in order to increase the acceptance of their conclusions by small businesses.
- ***Enhance technical and financial toolkits supporting SMEs to embrace promotion of circular practices:*** To effectively promote circularity among SMEs, it is important to incorporate specific measures and initiatives that target sustainable practices with the scope of SME support regular schemes, which are currently lacking. In particular, it is recommended:

- **Capacity Building and Training:** Support schemes should include capacity-building components that provide SMEs with the necessary knowledge and skills to embrace circularity. This can be achieved through development and promotion of *training programs* and *mentoring initiatives* focused on circular business models, sustainable design, waste management, and resource optimization.
- **Design technical support program to support numerous SMEs to undergo RECP assessments:** Expert guidance helps SMEs to understand the benefits, feasibility, and practical implementation of circularity, addressing any knowledge gaps and capacity limitations, as well as to identify short term and long term RECP actions and to evaluate financial cost. Enhancing SMEs' understanding of circular principles can empower them to incorporate these practices into their operations effectively.
- **Design and launch start-up business support program, specifically supporting creation of new enterprises embracing circular business models,** based on existing experience of supporting start-ups (e.g., Government Measure N19, “Successful start campaigns” of the Enterprise Armenia)
- **Foster collaboration and networking through creation of interactive map of enterprises:** Collaboration across different stages of circularity allows SMEs to integrate their operations within the value chain. For example, a product manufacturer should have easy access to contact and collaborate with a recycling company to establish a closed-loop system, where the product is designed for easy disassembly and recycling, and the recycling company ensures the materials are reused or recycled back into the production process. This integration promotes circularity by maximizing the value of materials throughout their lifecycle. A textile producer that generates waste materials can collaborate with another textile producer that exclusively uses waste materials as raw materials. This collaboration enables the efficient utilization of resources and reduces waste generation, leading to cost savings and improved environmental performance. Along with the technical support it is recommended to create **interactive map of circular businesses** that connects businesses within the circular economy value chain and showcases their activities, waste generation, and utilization of recycled materials, this map can promote collaboration, transparency, and informed decision-making among stakeholders. Here's an outline of how such a map can function:
  - **Data Collection:** Gather data on businesses involved in the circular economy. This information can be obtained through surveys, partnerships with industry associations, government databases, and other relevant sources.
  - **Categorization:** Classify businesses based on their main activities and position in the circular business value chain. This could include categories such as material suppliers, manufacturers, distributors, waste management companies, recycling facilities, and businesses utilizing recycled materials.
  - **Information Integration:** Compile relevant information for each business, such as their name, description, website, GPS coordinates contact details, and key products or services. Additionally, include data on waste generation, recycling volumes, etc.
  - **Filtering and Search Functionality:** Enable users to filter businesses based on specific criteria, such as industry sector, waste type, recycling practices, or certification status. Incorporate a search function to find specific businesses or locations.
  - **Links and Connections:** The map should allow users to navigate and explore businesses across the circular business value chain based on their location and other relevant criteria. Establish links between businesses within the circular value chain. For instance, highlight businesses that supply materials to others or those that utilize recycled materials from specific sources. This interconnected view helps users understand the flow of resources and promotes collaboration among businesses.
  - **User-Friendly Interface:** Design an intuitive and user-friendly interface that allows users to easily navigate, search, and access information on businesses of interest. Include tooltips, pop-ups, or additional details when users interact with specific businesses on the map.

- **Regular Updates:** Ensure that the map is regularly updated to reflect any changes in business activities, locations, or available data. Establish a mechanism to collect feedback from users to improve the accuracy and usefulness of the map.

To ensure sustainability of the map it is important that it is initiated by the Government/SME support structures in close cooperation with business associations. In case Map is initiated and created by the support of international organizations it critical that Government takes the commitment for further maintenance.

- **Development of special financial assistance schemes to promote green practices:** Governments can offer grants, subsidies, tax incentives, and low-interest loans specifically targeted at promoting green practices and circularity. Such financial support reduces the initial investment costs and incentivizes SMEs to transition towards more sustainable and circular business models. Existing loan guarantee scheme of the Enterprise Armenia can be modified to target also circular business models. such as investment in sustainable technologies, resource-efficient production processes, or the development of circular supply chains. Financial institutions can also be encouraged to provide preferential terms for SMEs implementing circular practices.

### 3. Creating market demand for green practices

SMEs in Armenia remain mostly unaware of the potential of commercializing improved environmental performance and gaining competitive advantage. It may be difficult to persuade SMEs to act upon environmental information, even when it is obviously in their own financial interest. Other considerations are at least as critical, primarily the need to strengthen market incentives for environmental improvements by directly (green public procurement) and indirectly (green certifications and eco-labels) increasing the demand for improved environmental performance and green products and services.

**Green public procurement:** Government policy can play a significant role in creating demand for green products and services and boosting the market where private consumer demand for them is insufficient. Governments can exert its own supply chain pressure through its procurement policies and make it a condition of tendering for government contracts that the applicant commit to maintaining specified environmental standards up and down the supply chain. By using their purchasing power to choose goods and services with lower environmental impact, public authorities can help to drive down the costs of such purchases and make them more affordable generally.

**Green certifications and eco-labelling:** Ultimately, the primary goal of green certification or eco-labelling programs is to increase the market share of their members. The scheme should be designed well enough so that the business benefits to SMEs outweigh both the direct costs in terms of fees that must be paid to obtain a label or certification and the indirect costs of staff time to be spent complying with their requirements. Although supply chain pressure in some sectors is a powerful driver for some SMEs to adopt an environmental management system (EMS), small businesses face serious obstacles, including a lack of resources, knowledge and technical capacity, the fact that most EMS-related costs are upfront and benefits are medium-term, as well as low public visibility. Therefore, it is necessary to tailor EMSs, both in terms of their content and delivery, to the particularities of SMEs. The key, at least for smaller businesses, is to focus on simple, accessible improvements in management practices, rather than the introduction of a formal, administratively complex EMS. Those “simplified” EMSs could be developed and promoted by business associations and should also be recognized by the environmental authorities, which may offer additional incentives: regulatory (e.g. reduced inspection frequency) or financial (e.g. reduced administrative fines in case of minor offences). In order to make environmental management credentials more relevant to specific economic sectors, the Ministry of Economy and the Ministry of Environment should collaborate with business associations to develop sectoral certification brands and eco-labels, many of which affect SMEs, as well as guidelines on how businesses may “earn” the right to display appropriate signs (stickers, posters, etc.) to highlight their environmental practices to their customers. Several donor-supported short-term programs in Armenia have promoted eco-labelling,

but their sustainability has not been ensured. In order to institutionalise such schemes, the criteria and process for determining whether a product merits an eco-label or green certification should be transparent. It is necessary to ensure that labels are not awarded too easily, without rigorous scrutiny of each company's practices, which would devalue them. It is also important to communicate to a broad audience to raise the recognition of the label or certification, starting at a very early stage of the scheme's development.

**Recommendations:**

- The Armenian government should gradually **include environmental criteria in its purchasing decisions**. For example, purchasing guidelines could require that particular products contain a minimum amount of recycled content or achieve specified levels of energy efficiency. Procurement rules should also favour – through price preferences, explicit set-asides, or other mechanisms – suppliers who comply with environmental requirements, obtain green certification, qualify for environmental labels, or otherwise demonstrate their environmental credentials.
- The Ministry of Economy and national standardisation organisation should work with SME support agencies and business associations to **design, using international experience, a multi-tier environmental management system with a simplified certification procedure** which would allow certified SMEs to be recognised for achieving each tier of complexity.
- All stakeholders should work jointly **on promoting eco-labelling** in Armenia aligned with EU's current SMGP (Single Market for Green products) initiative. Sectoral trade associations should play a major role in developing guidelines for relevant certification brands and labels and promoting their benefits among the business community.